INFLUENCE OF ADOPTION OF INFORMATION COMMUNICATION TECHNOLOGY ON ORGANIZATIONAL PERFORMANCE: A CASE STUDY OF KENYA WILDLIFE SERVICE

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ABSTRACT

Research shows that the use of information and communications technology (ICT) plays a very key role in the growth and development of the economy in developing countries. ICT has been seen as a tool that increases efficiency; create new opportunities for generating income, access to various new markets and generally improving governance. ICT has contributed to significant changes in developing countries in the past two decades with some of the changes to include economics, communication, education and travel. This study sought to establish the influence of adoption of ICT on organizational performance at the Kenya Wildlife Service (KWS). The target population of focus for this research was the staffs in KWS head office who deal with information technology, the implementation of IT and IT systems. A sample of 80 staff was drawn from the target population of 800 staff who work in the head office. The primary means of collecting data for this study was through the use of questionnaires which used likert scale to generate quantitative data. The study revealed that staff motivation, process efficiency, service quality and customer satisfaction influence performance of an organization as indicated in the coefficient of determination (R-Squared) with a value of 0.633 which explains 63.3 percent of the variation in KWS performance. The difference, 36.7 percent, may be explained by other factors not included in the study. The study recommends that the organization should adopt and utilize a business model which can be used to add value to the organization and assist in the process efficiency which is a key variable in the study. This will result in improved processes and creation of new processes that make it easier for the organization to carry out their mandate and be able to provide better services. The organization should come up with processes and structures that are sufficient. Decision making is a key and as noted in the study, most of the employees view was that ICT has not resulted in better decision making. The management should therefore use technology to be able to distribute power to different people in different capacities in the organization. The study also recommends thorough training of employees before implementation of technologies as some of the employees thought that the implementation of technology will result in them losing their jobs. The study recommends that other aspects that have contributed to the overall growth in performance be looked into as ICT is not the only factor that has resulted in the growth in performance, though it has greatly contributed to the performance.

Keywords: ICT, Organizational Performance
INTRODUCTION

Information and communications technology (ICT) plays a very key role in the growth and development of the economy in the developing countries (Crede & Mansell, 1998). According to the World Bank report of 2008, it was noted that adoption of ICT is known to increase operational efficiency, provide access to new markets or services and create new opportunities for income generation (WB, 2008). There has been considerable improvements achieved in Africa with respect to certain aspects of ICT, however there are still areas where improvement is needed in order for Africa as a whole to be able to take advantage of the benefits of ICT (WB, 2008).

PURPOSE OF THE STUDY

Tourism is one of the key economic earners in Kenya and has been mapped with the country’s Vision 2030 blueprint as part of the economic pillar which will see Kenya becoming globally competitive and prosperous; aimed at having the country maintain a sustained economic growth of 10% per annum over the next 25 years (Vision 2030).

The tourism sector therefore has to ensure that the sector sustains the economic growth through enhancement of Kenya’s tourism products to include wildlife conservation which is mandated by the Kenya Wildlife Service.

It is therefore important to understand the influence that adoption of ICT has on the organization performance.

This study answers a number of research questions that is;

1. How does the influence of adoption of ICT affect quality of service at KWS?
2. Does the adoption of ICT influence customer satisfaction at KWS?
3. How does adoption of ICT influence the process efficiency in KWS?
4. How does adoption of ICT influence staff motivation at KWS?
5. How does adoption of information technology influence the overall organization performance?

BACKGROUND OF THE STUDY

ICT has greatly contributed to the growth and development of countries like China whose economy has grown steady over the years. The use of internet in China, for example has seen the growth of the number of internet users increase more than six times from 1997 to 1999, reaching 8.9 million; as of 2004, the growth of internet users increased to 80 million (Luo, 2000; Layman, 2004). According to (Gabberty, 2004), Chinas success in the transition towards economic parity has been greatly attributed to investment in ICT. The correct implementation of technology has seen Chinese manufacturers moving up the scale in the global supply chain and thus leading to economic growth and development of this country (Spencer, 2003). ICT strategies have been adopted by companies in China to assist in coming up with more innovative products as there has been an increase in competitiveness (Carr, 2003).
INFLUENCE OF ICT ON ORGANIZATION PERFORMANCE

独立变量
- Quality of Service
- Customer Satisfaction
- Process Efficiency
- Staff Motivation

依赖变量
- Organization Performance

METHODOLOGY
RESEARCH DESIGN AND SAMPLE SIZE

The research for this particular model was carried out through a case study; which can be described as a detailed investigation of an individual, institution or a phenomenon (Mugenda and Mugenda, 2003). Case study research is one of the most common approaches applied in the field of Information Systems (IS) (Alavi et al., 1992). Sauer (1993) asserts that research in information systems is best done by case study. Myers (1997) further argues that the case study approach is well-suited to IS research as it helps to study the use of technologies in organizations.

According to Kothati (2004), a population refers to all items in any field of investigation and is and which is also known as the “universe”. Population studies are more representative because everyone has equal chance to be included in the final sample that is drawn according to Mugenda and Mugenda (1999).
The target population was the staff at the Kenya Wildlife Service head office. The study focused specifically on the staffs who deal directly with the application of technology at KWS. This includes different departments e.g. finance, customer service and marketing.

A sample of 80 was taken from the total population of 800 staff which represents approximately 10% of the total population that was involved in this study. An impartial sampling method was carried out at the second stage in order to determine the number of respondents from each group.

**TABLE 3.2: SAMPLING FRAME**

<table>
<thead>
<tr>
<th>Group</th>
<th>Population (Frequency)</th>
<th>Sample Ratio</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management</td>
<td>100</td>
<td>0.1</td>
<td>10</td>
</tr>
<tr>
<td>Middle level management</td>
<td>320</td>
<td>0.1</td>
<td>32</td>
</tr>
<tr>
<td>Low level management</td>
<td>380</td>
<td>0.1</td>
<td>38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>800</strong></td>
<td><strong>0.1</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

**DATA ANALYSIS**

The study utilized a multistage sampling method where the population was stratified according to Management levels.

An impartial sampling method was carried out at the second stage in order to determine the number of respondents from each group.

A structured questionnaire was used which had both open-ended and close-ended questions, where the close-ended was to be used as it was easier to analyze as they are in a form. The open-ended was to encourage the respondents to give a detailed and in-depth understanding without feeling held back to reveal certain information.

The simple regression model was used to find out the effect of the independent variables (quality of service, customer satisfaction, process efficiency and staff motivation) on the one dependent variable (organization performance).

**RESULTS AND DISCUSSIONS**

The study indicates that from a sample population of 80 respondents, 74 respondents responded and returned the questionnaires thus comprising of 92.5% response rate which is acceptable and can be used to make conclusions for the study.

**TABLE 4.4: DURATION OF WORKING AT KWS**
The research sought to find out the duration that the respondents have been working in the organization. The study was to find out the influence of ICT on organization performance and therefore the respondents were from various departments across the organization.

From the findings indicated in table 4.4, the respondents have been working at KWS for period ranging from 1 to over 10 years with majority of them, that is, 48.65% of them having worked in the organization between 5-10 years, 26.68% of the respondents had been working in the organization for more than 10 years, 20.27% of the respondents had been working in the organization for less than a year while 5.41% had been working the organization for a period between 1-5 years.

ADOPTION OF E-BUSINESS:

**TABLE 4.5: TO WHAT EXTENT HAS YOUR ORGANIZATION ADOPTED E-BUSINESS IN CARRYING OUT ITS ACTIVITIES.**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>To a small extent</td>
<td>7</td>
<td>9.46%</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>19</td>
<td>25.68%</td>
</tr>
<tr>
<td>To a large extent</td>
<td>31</td>
<td>41.89%</td>
</tr>
<tr>
<td>To a very large extent</td>
<td>17</td>
<td>22.97%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>74</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

From the findings on table 4.3, it indicates that the organization has adopted ICT to a large extent in various aspects on the organization through adoption of systems that ease processes. This has been seen in different aspects of the organization e.g., the introduction of the safari cards (which is an electronic cards that one tops up to before getting entry to the park) which have been integrated with all the KWS parks and thus the organization is able to collect their revenue from the parks in a systematic and accountable way while at the same time reduce fraud.
QUALITY OF SERVICE:

TABLE 4.6: HAS ADOPTION OF ICT RESULTED IN IMPROVED PERFORMANCE IN KWS.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>6</td>
<td>8.11%</td>
</tr>
<tr>
<td>Yes</td>
<td>68</td>
<td>91.89%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>74</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

According to the research response, it is clear that the adoption of ICT has improved performance in the organization with 91.89% agreeing that ICT has indeed influenced the quality of service being provided by the organization.

Quality service can be seen as the ability of a product to meet customers’ expectations. Service quality which had a good response of 91.89% according to the study in KWS performance can be explained in the organizations ability to meet the customer’s needs (Hanson, 2000).

The results of this study in regards to quality of service is in accordance to (Parasuraman et al, 1988) where service quality has been seen as a key factor for success of organizations or businesses. For performance evaluation, service quality is widely used to access the performance of the services within the organization (Cowling and Newman, 1995). The focus on service quality as a key variable is a good measure to evaluate the organizations performance.

FIGURE 4.3: GRAPH SHOWING THE QUALITY OF SERVICE ON PERFORMANCE.
CUSTOMER SATISFACTION:
FIGURE 4.4: TO WHAT EXTENT DOES ADOPTION OF ICT AFFECT CUSTOMER SATISFACTION?

From the findings on figure 4.3, the study indicates that the adoption of ICT has led to better customer satisfaction. This is as a result of improved processes that make it easy to offer better services thereby leading to overall customer satisfaction. From the findings, 52.7% of the respondents indicated that adoption of ICT has led to greater customer satisfaction to a large extent, 22.97% of the respondents showed that ICT has affected customer satisfaction to a very large extent, 16.22% of the respondents indicated that ICT has affected customer satisfaction to a moderate extent, 5.41% indicated that ICT has affected customer satisfaction to a small extent, while only 2.7% of the respondents indicated that the adoption of ICT has not resulted to customer satisfaction at the KWS.

Customer satisfaction can be compared to the performance of a product or a service that is being offered vis-à-vis the actual benefits that will be realized.

According to (Westbrook, 1981) the satisfaction is as a result of customer’s evaluation of a set of experiences that are linked to a specific service provider. This is noted in the results which indicate that the influence of ICT adoption has led to a large number of customers being satisfied. Satisfaction is evident in the large number of respondents who believed that customer satisfaction was evident as a result of the introduction to ICT, which is noted by (Peters and Waterman, 1982).
PROCESS EFFICIENCY

FIG 4.5: HAS ADOPTION OF INFORMATION TECHNOLOGY RESULTED IN BETTER FLOW OF INFORMATION WITHIN THE ORGANIZATION?

From the findings on figure 4.4, the study indicates that the adoption of ICT has led to better flow of information within the organization. This is due to automation of processes and adoption of systems that ease the flow of information. The findings show that 68 respondents out of the 74 which is 91.89% indicate that indeed ICT adoption has led to better flow of information while 6 out of 74 respondents which is 8.1% indicate that adoption of ICT has not led to better flow of information.

TABLE 4.7: TO WHAT EXTENT HAVE THE FOLLOWING AREAS OF PROCESS EFFICIENCY BEEN AFFECTED BY INFORMATION TECHNOLOGY?

<table>
<thead>
<tr>
<th>Response</th>
<th>Cohesion Between Departments</th>
<th>Decision Making</th>
<th>Relation with other firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>To a large extent</td>
<td>33</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>To a moderate extent</td>
<td>14</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>To a small extent</td>
<td>4</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>To a very large extent</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>To no extent</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>74</strong></td>
<td><strong>74</strong></td>
<td><strong>74</strong></td>
</tr>
</tbody>
</table>
STAFF MOTIVATION

FIGURE 4.6: DOES INFORMATION TECHNOLOGY INFLUENCE STAFF MOTIVATION AT KWS.

From the findings on staff motivation, it is evident that information technology has a major contribution to the staff motivation at KWS. This is because of the ease in automation of processes and procedures which makes it easy to carry out work. Information technology has also led to improved communication in the organization thereby assisting in better decision making.

Motivation can be defined as a set of process concerned with forces that energizes behavior and directs towards achieving a certain goal. This can be seen as the inner drive that causes employees to work towards achieving the set objectives (Baron, 1983). This is also evident in the response received from staff which shows that 93% of the staff at KWS are motivated and this has resulted in an improved performance in the organization.

REGRESSION AND CORRELATION COEFFICIENTS

Regression analysis was used to determine the relationship between the variables. The analysis included an error term, where the dependent variable was expressed as a combination of the independent variable.

The model:

\[ Y_i = 3.697 + 1.269QS + 0.302CS + 0.829PE + 0.227SM \]

From the equation above, taking 5 as extreme performance, then holding the four factors constant, KWS will perform at an average of 3.697. Quality service alone has a positive effect of 1.269 units on KWS performance. Likewise, customer satisfaction has a positive effect of 0.302 units on KWS performance while process efficiency has a positive effect of 0.829 units. Staff motivation alone leads to 0.227 units increase in KWS performance. Considering the four factors
together, service quality and process efficiency have a significant effect \((p<0.05)\) while customer satisfaction and staff motivation are not significant \((p>0.05)\). A tolerance value less than 1 and Variance Inflation Factor (VIF) less than 4 indicates that the variables are not collinear.

**TABLE 4.8: ANOVA**

**ANOVA**

<table>
<thead>
<tr>
<th></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>33.945</td>
<td>4</td>
<td>8.486</td>
<td>29.729</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>19.697</td>
<td>69</td>
<td>.285</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>53.641</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Staff motivation, Process Efficiency, Service Quality, Customer Satisfaction

An analysis of variance shows that the model including Staff motivation, Process Efficiency, Service Quality, Customer Satisfaction as independent variables and KWS Performance as the dependent variable is significant \([F (4, 69) = 29.73, p<0.05]\). The result indicates that the four can be used to predict KWS performance significantly.

**CORRELATION COEFFICIENTS BETWEEN THE INDEPENDENT VARIABLES AND THE DEPENDANT VARIABLE:**

**TABLE 4.9: COEFFICIENTS**

**COEFFICIENTS**

<table>
<thead>
<tr>
<th></th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.697</td>
<td>.213</td>
<td>22.098</td>
<td>.000</td>
</tr>
<tr>
<td>Service Quality</td>
<td>1.269</td>
<td>.219</td>
<td>-5.791</td>
<td>.000</td>
</tr>
<tr>
<td>Customer</td>
<td>.302</td>
<td>.167</td>
<td>-1.803</td>
<td>.076</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Efficiency</td>
<td>.829</td>
<td>.176</td>
<td>-4.709</td>
<td>.000</td>
</tr>
<tr>
<td>Staff motivation</td>
<td>.227</td>
<td>.161</td>
<td>-1.405</td>
<td>.164</td>
</tr>
</tbody>
</table>

a. Dependent Variable: KWS Performance
TABLE 4.10: REGRESSION MODEL SUMMARY OF THE EFFECT OF INDEPENDENT VARIABLES ON THE DEPENDENT VARIABLE:

Model Summary^b

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.795^a</td>
<td>.633</td>
<td>.612</td>
<td>.53428</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Staff motivation, Process Efficiency, Service Quality, Customer Satisfaction:

b. Dependent Variable: KWS Performance

CONCLUSIONS

This study concludes that the adoption of ICT indeed has an influence on the organizational performance at KWS. This can be seen from the adoption of ICT bring about positive changes according to the response in the quality of service being offered. The adoption has also led to better process efficiency within the organization, resulting to cohesion between departments, better decision making and the relation that the organization has with other firms. This has led to better output from the staff as everyone feels as though they are part of the team and thereby giving their best input to the organization.

Automation of processes and systems within the organization has also resulted in the organizations increasing their revenue as they are now able to monitor and track the monies that are being collected at the parks due to the integration with the headquarter and the implementation of the safari card system.

The organization is also able to make decisions based on reports generated from systems and they are able to forecast their budgets and allocate resources into areas that generate income for the organization.

RECOMMENDATIONS

The study recommends that the organization should adopt and utilize a business model which can be used to add value to the organization and assist in the process efficiency which is a key variable in the study. This will result in improved processes and creation of new processes that make it easier for the organization to carry out their mandate and be able to provide better service. The organization should come up with processes and structures that are sufficient.
Decision making is also key and as noted in the study, most of the employees view was that ICT has not resulted in better decision making. The management should therefore use technology to be able to distribute power to different people in different capacities in the organization.

The study also recommends thorough training of employees before implementation of technologies as some of the employees thought that the implementation of technology will result in them losing their jobs.

The study recommends that other aspects that have contributed to the overall growth in performance be looked into as ICT is not the only factor that has resulted in the growth in performance, though it has greatly contributed to the performance.

**AREA OF FURTHER RESEARCH**

According to the research carried out, it is noted that customer satisfaction and staff motivation contribute to the overall performance; however they are not so significant; there is need therefore to access other aspects of these variables and other variables that have not been used in this study to determine the influence that ICT has on organization performance.

A further study can be done on ways to reduce fraud by introducing ICT and thus increasing the overall revenue of the organization.

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