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The Influence of Information and Communications Technology on Project Performance in the Aviation Sector: The Case of Kenya Airports Authority

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ABSTRACT

The world over, integration of ICT into e-government and e-governance has become the trend due to advancement in technology and the need to keep a brace with the dynamic business world. For the ICT investments to be justified the influence of ICT on Project Performance needs to be probed with respect to service delivery, efficiency and accountability. The purpose of this study is to establish the influence of the adoption of ICT on Project Performance within the Aviation Sector. The purpose this study was guided by three objectives that explore how; Information Communications and Technology Resources, Information Quality and Information Communications and Technology Change Management influenced Project Performance in Kenya Airports Authority. The literature review revealed that there was limited studies focusing on the influence of ICT adoption on Project Performance in Kenyan Parastatals, especially in the Aviation sector. The methodology adopted descriptive correlational design. The target population was KAA staff involved in project management. The sample was selected using Stratified random sampling and data was analysed using to generate descriptive statistics. The analysis revealed a composite mean of 4.29 for ICT resources and project performance and a strong positive correlation of variables is 0.659, with a significance value of .000 thus the alternative hypothesis was accepted. The study found a composite mean of 4.301 and a standard deviation of 0.5622 for Information Quality and project performance, a positive strong correlation of 0.741, the significance value of the coefficient is 0.000 thus conclusion that there is a significant relationship between the variables. Lastly ICT Change Management and Project Performance at KAA had the highest composite mean of 4.353 and a standard deviation of 0.59

shows that most respondents agreed, and a correlation was given as 0.761 and a significance value .000 showing a significant association between the variables. Hence lead the study to conclude that ICT adoption has a positive influence on Project Performance. The researcher recommends that other Government Parastatals should be encouraged to adopt ICT based operations to enhance productivity and optimal resource use. Secondly, to ensure value is accrued from investing in ICT infrastructure, policy makers need to formulate ICT Change management policies customized for their environment, to ensure smooth transition. Lastly, for projects to be able to adhere to the set budget and quality specifications, quality information needs to inform the decision making process at all levels of the organization.

KEY WORDS: *Project Performance, ICT Information Quality, ICT Change Management, ICT resources*

Introduction

Technology has been refined through years of innovation in both the private and public sector have experienced unprecedented uptake of Information and Communications Technology (ICT) based business solutions globally. The growth in use of ICT based solutions for business and the associated expenditure will continue to soar in the foreseeable future and industrial developments on ICT use have improved the efficiency of project management. ICT applications in project environment have helped in the automation of document management, electronic business applications, mobile computing wireless communication, and web based project management. Public sector the world over has adopted the principles of E-Governance and E-Government so as to ensure that they are more accountable, transparent and effective, since ICT has redefined every aspect of doing business. The United Kingdom and New Zealand Governments' review on Portfolio, Programme, and Project Management (P3M) practice revealed increase in success and reduction of costs through improving methodologies capabilities. In Australia, (Public Accounts Committee, 2014) confirmed that ICT had provided a huge potential for improving Government services and enabling agencies to operate more efficiently. In South Africa, the Infrastructure Delivery Management System (IDMS) has been adopted as a guide for most effective practice delivery of infrastructure management has been adopted to streamline the use of ICT in project management in Public Service (National Treasury South Africa, 2015). This model focuses on: Project Management, Portfolio Management and Operations and Maintenance. In Kenya first e-Government strategy was formulated in 2004 enable harmony and coordination while enabling different government departments to still pursue their separate ICT agenda. The Integrated Personnel and Payroll Database (IPPD) and Integrated Financial Management Information System (IFMIS) are some of the information systems that are already in use. Other applications include ITAX, online Selection and Recruitment and the Border control System (Wamoto, 2015). The integration of ICT based solutions into Project Implementation has been occasioned by numerous perceived benefits. For us to reap these benefits in reality it is imperative to come to a realization that integration of ICT into project implementation is a means to an end as noted

in (Saul, 1994). Hence expenditure on ICT can only be rationalized if by exhibiting clarity in terms of benefits amassed and not adoption for the sake of it.

Kenyan Parastatals continue to invest heavily on ICT based solutions hence there is need to analyze the effect of this investment on Project Management (PM) in the aviation sector. This research seeks to investigate ICT integration and its effect on Project Management, with Kenya Airports Authority as the focal point.

In 1991 the Kenya Airports Authority (KAA), was entrenched under KAA Act with its mandate being to provide infrastructure for aviation services to link Kenya and the outside world.as stipulated in Chapter 395 of the Laws of Kenya it is responsible for the construction, operation and maintenance of aerodromes. All of these construction activities are project based hence it is imperative for this parastatal to adopt best practices and effective project management for its success.

Research Problem

ICT applications in Project Management are presumed to enhance; document management, enable web-based operations, electronic business applications use, mobile computing and communication. This study showed despite of the typical impediments associated with adoption of new technology, ICT had a significant positive influence on various organizational processes. Kenya Airports Authority has invested heavily in the integration of ICT into its organizational functions yet the link between use of ICT and Project Performance is yet to be probed. Influence of individual user factors, communication breakdown between the project team and suppliers/contractors, limited quality of training to staff, uneconomical procedures during project implementation are common occurrences during project implementation.

These listed observations could be symptoms that point to lack of the requisite knowledge of Project Management techniques and tools, an imbalance in budgetary allocations, lack of support from the top management and poor change management. To formulate an informed ICT policy that will ensure these perceived benefits aid PM success, a study on ICT adoption and its effect on Project Management success at Kenya airports Authority is imperative. In Kenya the adoption of ICT based solutions was triggered by the ICT Master Plan (ICT Authority, 2014) which had clear objectives but had no explicit feedback mechanism to measure the envisioned gains. Hence this study sought to bridge this gap and answer question; what is the effect of ICT adoption on Project Performance in Kenya's Aviation sector?

The study focused on the objectives listed below:

- i. To determine the influence of Information Communications and Technology Resources on Project Performance in the aviation sector;
- ii. To establish the influence of Information Quality on Project Performance in the aviation sector ;
- iii. To examine the influence of Information Communications and Technology Change Management on Project Performance in the aviation sector ;

Research Hypothesis

This research tested the hypotheses listed below at 95% level of significance:

- i. **H₀**: Adoption of Information Communications and Technology Resources has no significant influence on Project Performance in the aviation sector in Kenya;
H₁: Adoption of Information Communications and Technology Resources has a significant influence on Project Performance in the aviation sector in Kenya;
- ii. **H₀**: Information Quality has no significant influence on Project Performance in the aviation sector in Kenya;
H₁: Information Quality has a significant influence on Project Performance in the aviation sector in Kenya;
- iii. **H₀**: Information Communications and Technology Change Management has no significant influence on Project Performance in the aviation sector in Kenya;
H₁: Information Communications and Technology Change Management has a significant influence on Project Performance;

Significance of the Study

The results assist in shading light on areas that needed intervention for the aviation sector to be able to optimally utilize the ICT infrastructure. The study is of benefit to government planners and those in charge of budgeting by enabling prudent use of tax payers' money through informed decision making. These results are also of benefit Project Managers and their Project Teams by enabling them to acknowledge ICT's role and in devising ways of utilizing the same for better Project Management. These findings give the senior management especially in the Aviation Sector a basis for making decisions with regard to funding of ICT projects and ICT policy formulation.

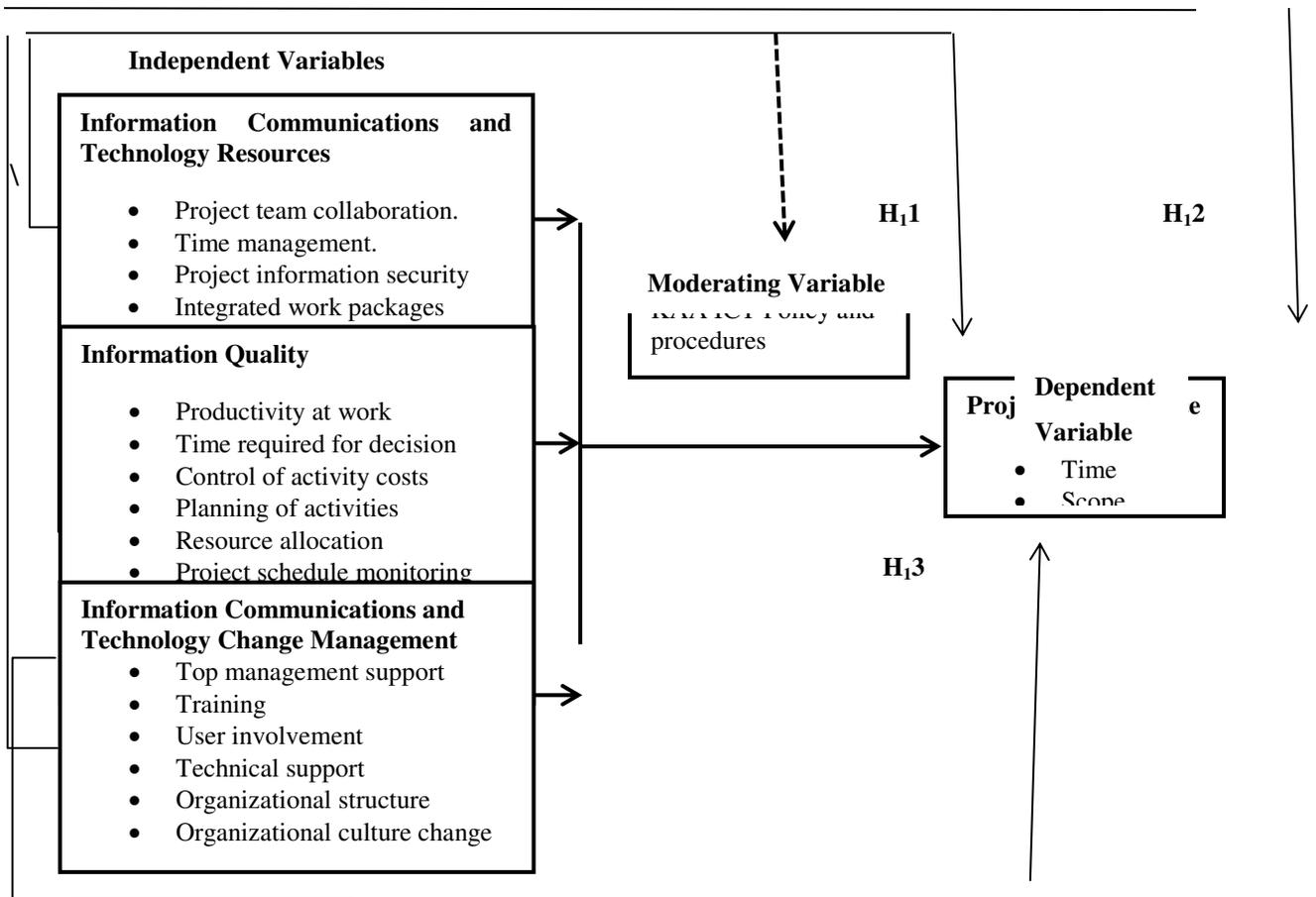
Theories on Technology Adoption

Theories are usually formulated to introduce or propose new dimensions to existing knowledge. Concepts, definitions and existing theories form a theoretical framework (Sekaran, 2005). Numerous theories have been proposed to explain adoption of technology. These include; Theory of Planned Behavior (TBP), Technology Diffusion Theory (TDT) and Resource Based Theory (RBT). This research was rooted on the theory of planned behavior (TBP) as proposed in (Ajzen, 2011). TBP strives to draw a relationship between belief and behavior. It is an improvement of the earlier Theory of Reasoned Action to which perceived behavior control has been included. According to this theory behavior of humans is determined by personal attitude coupled by social pressures and a sense of control. Central to this theory is an individual's intent that acts as the drive to behave in a particular way, for example to use a particular ICT resource. From this theory it is evident that the adoption of ICT by parastatals is not only affected by individual's capability to use the ICT resources but also by having an inherent intent to use them. Further if organizational culture is changed and the wave of change is set, those lagging behind are likely to be influenced into adopting ICT in their processes.

Conceptual Framework

The interrelationship between the study variables is conceptualized as shown in Figure 1. The purpose of this research is to probe the influence of ICT adoption on Project Performance. Therefore the dependent variable has been identified as Project Performance at Kenya Airports Authority. The independent variables have been identified as the Information Communications and Technology Resources, Information Quality and Information Communications and Technology Change Management. Hence ICT resources have the potential of significantly influencing Project Performance. The extent of this relationship will be tested in hypothesis **H₁**. Further from the reviewed literature Information Quality of an organization’s Information System has been seen to enhance Project Performance, through enabling decision making that is informed by quality information. Extent of this relationship shall be tested in hypothesis **H₂**. Change Management is imperative during introduction of new technology in an organization and it has been seen to have a relationship with Project Performance. Employees who were involved in planning change and are comfortable and conversant with the ICT resources used in Project Management were seen to be more productive and motivated. The extent of this relationship will be tested in hypothesis **H₃**.

Figure 1: Conceptual Framework



Knowledge gap

Table illustrates the existing knowledge gap from the literature reviewed.

Table 1 : Knowledge gap

Variable	Author and Year	Findings	Knowledge Gap
Information communications and technology resources	(Olatunji, 2015) (Mobegi, 2013) (Gataua, 2013)	ICT resources have an influence on organizational productivity. Introduction of ICT in the operations of SME's operations changed productivity and processes and by extension increased profits. Allocation of resources within small businesses. Improved communication.	These studies have covered the influence of ICT in in small businesses whose operations were not based on project management processes. None took Kenyan Parastatals and the Aviation sector as the focal point.
Information quality	(Kerubo, 2014)	Managers are likely to be receptive to ICT based Project Management Systems when quality of the information output is guaranteed and they are likely to use software software which gives necessary details and free of complexity.	The study focused on information quality from the Project manager's perspective and not all system users. The research was based mainly of private firms and not the Aviation sector.
Change management	(Kibuthu, 2016) (Kinuthia and Ibrahim, 2015)	ICT adoption challenges are caused by inability of staff to adapt to changes, lack goodwill from senior management and the limited quality of training to staff. Poor change management strategies may lead to inertia in adoption of efficient business applications.	These studies covered influence of ICT use on supply and not performance of projects. Issues of change management with regard to the Kenyan aviation sector were not investigated.

Summary of Chapter

This section gave a summary of how ICT has over the years diffused into Project Management. The relationship between ICT resources and Project Management success was vividly explored. This entailed the recent technological advancements with regard to ICT applications that have been tailored for Project Management. Enterprise Resource Planning was identified as one such application that is pivotal to all the Project Management operations at Kenya Airports Authority. Further, a review of existing frameworks and theories that have been proposed by researchers in in so as to determine the value of investment related to ICT in Government Parastatals. The appropriateness of the Public Value of Information Technology (PVIT) was demonstrated hence its adoption as a basis for the purposes of the study.

The link between variables adopted for this study has been explained with relation to reviewed works and the conceptual definitions. The conceptual framework was illustrated and the relationship between the dependent and independent variables explained. Studies on the influence of ICT adoption in Kenyan Parastatals and other organizations have been outlined and thereafter the gap in knowledge demonstrated. The themes of the three specific objectives were also discussed.

Target population

The target population will be Kenya Airports Authority staffs at decision making and supervision levels in Projects i.e. from the Supervisory Level to Senior Management Level. To ensure that the respondents are conversant with the ICT resources and are capable of providing the required information to the research questions, employees who have interacted with the Authority's ICT resources while in service for more than 3 years will be selected.

Table 2: Target population

Category	Target Population	Percentage Population
Senior level managers	5	5.5
Mid level managers	20	22.2
Supervisory Level	65	72.2
Total	90	100

Sample size and Sampling procedure

Participants was selected from the 90 Kenya Airports Authority employees. The participants shall be chosen using Stratified random sampling. The population shall be divided into separate sub-populations referred to as strata, from each stratum a random sample is drawn (Fienberg, 2003). This approach has been taken since KAA staffs interact with the Information Systems at different levels and frequency, depending on their seniority and job descriptions. For us to be able to get responses that are representative of a balanced cross-section of the system users, it is prudent to divide the staff into homogeneous groups.

Stratified sampling usually gives a weighted mean with a variability that is less than that of arithmetic mean when a simple random sample of the population is considered. This helps in

reducing the sampling error through representativeness of samples is highly improved (Habib, 2014).

Sample size

A sample size of 50% was arrived at as an average between previous works highest sample of 20% and the table value of 80% of the total population. This set the sample size at 46.

The sample size per stratum was calculated as shown in Table3 .

Sample size

Stratum	Target Population	% of total population	Sample size
Senior level managers	5	5.5	3
Middle level managers	20	22.2	10
Supervisory level	65	72.2	33
Total	90	100	46

For comparison purposes the look up tables generated by (Krejcie and Morgan, 1970) were used. A total population of 90 was found to coincide with a sample size of 73 which translates to 81%. An alternative method employed was a simplified formula used for calculating sample sizes (Yamane, 1967). Confidence level is taken to be 95% and $P = .5$. For a value of $e = \pm 5\%$ and $N=90$.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- N :the population size
- e :the sampling error
- n :sample size

The population size of 90 was found to give 73.47 i.e. $n = 73$. This is similar to the value obtained using (Krejcie & Morgan, 1970).

Operationalization of Variables

Operational definition of independent, dependent and moderating variables is as shown in Table 3.4.

Table 3: Operationalization of variables

Objective	Type of variable	Indicators	Measurement scale	Methods of data collection	Data collection tools	Data analysis technique
To determine the influence of Information Communications and Technology Resources on Project Performance;	Information Communications and Technology Resources	<ul style="list-style-type: none"> • Project team collaboration. • Time management. • Project information security • Integrated work packages • information flow speed • Project documentation system • Reporting and analyses • Resource management • Enhanced Scheduling 	Ordinal	Administering questionnaire	Questionnaire	Spearman Rank Correlation
To establish the influence of Information Quality on Project Performance;	Information Quality	<ul style="list-style-type: none"> • Productivity at work • Time required for decision • Control of activity costs • Planning of activities • Resource allocation • Time to complete a task • Project schedule monitoring • Quality of decisions • Monitoring of activities 	Ordinal	Administering questionnaire	Questionnaire	Spearman Rank Correlation
To examine the effect of Information Communications and Technology Change Management on Project Performance;	Information Communications and Technology Change Management	<ul style="list-style-type: none"> • Top management support • Training • User involvement • Technical support • Organizational structure • Organizational culture change 	Ordinal	Administering questionnaire	Questionnaire	Spearman Rank Correlation
	Project Performance	<ul style="list-style-type: none"> • Meeting deadlines • Adhering to budgets • Meeting quality specifications 	Ordinal	Administering questionnaire	Questionnaire	Spearman Rank Correlation

Data analysis, presentation and interpretation

This chapter analyses of data collected and all the results are presented in various table

Questionnaire Return Rate

The response rate gives the number and percentages of the questionnaires were duly filled and handed in by the participants.

Table 4: Questionnaire response rate

Stratum	Sample Size	Return Rate
Senior level managers	3	3
Middle level managers	10	10
Supervisory level	33	33
Total	46	46

All the 46 respondents who were targeted as per the sample size, handed in their questionnaires. This was within a desirable range since advocates for a response rate within arrange of 70% to 50%.

Demographic characteristics of the respondents

Demographic characteristics considered were gender, age and education level, length of rvice and level of management.

Table 5: Demographic Factors

	Group	Frequency	Percent	Cumulative percent
Gender	Male	34	73.9	73.9
	Female	12	26.1	100.0
	Total	46	100.0	
Age	21-30	6	13.0	13.0
	31-40	21	45.7	58.7
	41-50	11	23.9	82.6
	51+	8	17.4	100.0
	Total	46	100.0	
Education level	Certificate	3	6.5	6.5
	Diploma	18	39.1	45.7
	Degree	17	37.0	82.6
	Masters	8	17.4	100.0
	Total	46	100.0	
Length of service	0-5	12	26.1	26.1
	6-10	14	30.4	56.5
	11-15	6	13.0	69.6
	16+	14	30.4	100.0
	Total	46	100.0	
Job groups	1-5	33	71.7	71.7
	6	9	19.6	91.3
	7-10	4	8.7	100.0
	Total	46	100.0	

This respondents' gender obtained a balanced view of the influence of the ICT resources on project management. Distribution by both frequency and percentages is shown in Table 4.2. Male respondents constituted 73.9% of the respondents while Female were 26.1%. Most respondents fell between the ages of 31-40 years old which comprised 45.7% of the respondents. Table 4.2 also showed that the bulk of the respondents were Diploma holders at 39.1%, closely followed by Degree holders at 37%. Most of the respondents were found to have served in the corporation for 6-10 years and 16 years and over. As seen in Table 4.2 these two groups constituted 60.8% of the total number of respondents. Most of the respondents were found to belong to Job Groups 1-5 which is the Lower Level management. They constituted 71.7% of the respondents.

Influence of Information Communications and Technology Resources on Performance of projects in KAA

The first objective determined the influence of Information Communications and Technology Resources on Performance of projects in KAA. The research question to be answered was: How do Information Communications and Technology Resources influence Project Performance? This objective sought to determine how the various ICT infrastructure acquired by the Kenya Airports Authority influenced the Project Performance.

Descriptive Statistics of Information Communications and Technology Resources

Airports Authority respondents indicated to what level they agreed that ICT Resources had positively impacted Project Management. A scale of 1-5 was employed with 5 representing strong agreement while 1 represented total disagreement.

Table 6: Descriptive statistics on ICT resources

	Valid	Missing	Mean	Std Deviation
Project team collaboration	46	0	4.26	0.456
Time management	46	0	4.26	0.330
Project information security	46	0	4.26	0.389
Integrated work packages	45	1	4.24	0.295
Information flow speed	46	0	4.30	0.336
Project documentation system	45	1	4.24	0.398
Reporting and analysis	45	1	4.18	0.329
Resource management	46	0	4.39	0.478
Enhanced scheduling	46	0	4.48	0.679
Composite Mean and Std Deviation			4.29	0.41

A mean of more than 4 representing 'Agree' was obtained across all the indicators. This shows that the respondents agreed that ICT resources had positively impacted on; Project team collaboration, Time management, Project information security, Integrated work packages, Information flow speed, Project documentation system, Reporting and analysis, Resource management, Enhanced scheduling. Further the findings were confirmed by a composite mean of 4.29 and smaller than 1 standard deviation of 0.41 indicating that most of the responses were 'agree' which was represented on the likert scale by 4.

Inferential statistics on Information Communications and Technology Resources

Inferential statistics were used to demonstrate that the relationship between the two variables. This was done using the Spearman's rank correlation analysis to determine the relationship between ICT Resources and Project Performance.

The hypothesis 1 was stated as follows; **H₁1**: Adoption of Information Communications and Technology Resources has a significant impact on Project Performance

Table 7: Correlation Analysis of ICT Resources and Performance of Projects

Spearman's rho	Information Communications and Technology resources	Correlation Coefficient	1.000	0.659**
		Sig. (2-tailed)		0.00
		N	41	41
	Performance of Projects	Correlation Coefficient	0.659**	1.000
		Sig. (2-tailed)	0.000	
		N	41	41

**Correlation is significant at the 0.05 level (2-tailed)

The correlation coefficient between the two variables is 0.659, with a significance value of .000 for a sample size of 41. The BCa 95% interval ranges from 0.369 to 0.856 meaning it does not cross zero and the significance is less than 0.05, showing that there is a positive significant relationship between the use of ICT resources and project Performance at Kenya Airports Authority.

Based on these analyses, the hypothesis that; **H₁₁**: Adoption of Information Communications and Technology Resources has a significant impact on Project Performance is accepted.

Influence of Information Quality on Project Performance

The second objective of this study investigated the influence of Information Quality on Project Performance in the aviation sector. This was done using Descriptive statistics and correlation Analysis to measure the association between the variables.

Descriptive Statistics of Information Quality

The descriptive statistics were obtained from the responses from the statements; Improved productivity, Improved quality of decisions, Reduced time for task completion, decision making, Improved cost control, Better management of budgets, Improved planning of activities, Better activity monitoring and Improved monitoring of project schedule.

Table 8: Descriptive statistics on Information Quality

	Valid	Missing	Mean	Std Deviation
Improved productivity	45	1	4.93	0.98
Improved quality of decisions	46	0	4.30	0.576
Reduced time for decision making	46	0	4.17	0.33
Reduction of time required to complete a task	46	0	4.09	0.45
Improved cost control	45	1	4.18	0.56
Better management of budgets	45	1	4.11	0.397
Improved planning of activities	45	1	4.02	0.487
Better monitoring of activities	45	1	4.96	0.78
More efficient resource allocation	45	1	4.07	0.477
Improved monitoring of project schedule	45	1	4.18	0.585
Composite Mean and Standard Deviation			4.301	0.5622

The table shows a composite mean of 4.301 and a standard deviation of 0.5622 thus the study concludes that information quality is present in project management of KAA. All the responses from respondents on all the elements affecting information quality had means higher than 4 indicating strong agreement.

Inferential Statistics on Quality of information and Project Performance

To test for correlation between Information quality and project performance H₁₂, the variables constituting the two groups were transformed into two variables and the Spearman’s analysis was used for a 2-tailed test at 95% confidence interval. The Hypothesis was stated as follows; **H₁₂: Information Quality has a significant effect on Project Performance.**

Table 9: Correlation between Quality of Information and Performance of Projects

		Information Communications and Technology Information	Quality of Information	and	Performance of Projects
Spearman’s rho	Information and Technology Information	Correlation Coefficient	1.00		0.741**
		Sig. (2-tailed)			0.000
Performance of Projects		N	42		42
		Correlation Coefficient	0.741**		1.000
		Sig. (2-tailed)	0.000		
		N	46		4

** Correlation is significant at the 0.01 level (2-tailed)

As illustrated the correlation between the two variables was 0.741, the significance value of the coefficient is 0.000, for a sample size of 46. Further, the BCa 95% ranges from 0.572 to 0.859 which does not cross zero and the significance is less than 0.05. This shows that there exists a strong positive relationship between Quality of Information and Project Performance at the Authority.

From these analyses, the alternative hypothesis is accepted. Thus the conclusion that Information Quality has a significant effect on Project Performance.

Influence of Information Communications and Technology Change Management on Project Performance

The third objective of this research probed the influence of Information Communications and Technology Change Management on Project Performance in the aviation sector. The study set out to answer the research question: How do Information Communications and Technology Change Management influence Project Performance? This objective looked at how ICT Change Management was influencing Project Performance in Kenya Airports Authority.

Descriptive Statistics of ICT Change Management

Descriptive statistics was used to analyze responses made on statements relating to change management. All of the respondents agreed that the change management strategy laid down by

KAA had led to: Top management support, Better Training, User involvement, Technical support, an optimal organizational structure and Organizational culture change towards embracing technology.

Table 10: Descriptive statistics on ICT Change Management

	Valid	Missing	Mean	Std Deviation
Top management support	44	2	4.18	0.278
Training	45	1	4.42	0.329
User involvement	45	1	4.36	0.835
Technical support	45	1	4.11	0.387
Organizational structure	45	1	4.47	0.758
Organizational culture change	45	1	4.58	0.953
Composite Mean and Std Deviation			4.353	0.59

This indicates a consistent mean of approximately 4 across all the indicators, implied that the respondents agreed that ICT change management carried out in the Authority had led to improved top management support, training, better user involvement, technical support, enhanced organizational structure and a change in the organizational culture. For better project performance. The composite mean of 4.353 and a standard deviation of 0.59 shows that most respondents agree with ICT change management as a factor in project performance.

Inferential statistics on ICT Change Management

To extract the inferential statistics, an analysis based on Spearman’s correlation was used. For this purpose 5% confidence level and 95% confidence interval based on a 2-tailed test was used. As illustrated in Table 4.8 a correlation exists between ICT Change Management and Performance of Projects.

Table 11: Correlation between ICT Change Management and Performance of Projects

		Information Communication’s and Performance of Technology Change Projects		
		Information Communication’s and Technology Management	Change	Performance of Projects
Spearman’s rho	Information Communication’s Technology Management and Change	Correlation Coefficient	1.000	0.761**
		Sig. (2-tailed)		0.000
	Performance of Projects	N	43	43
		Correlation Coefficient	0.761**	1.000
		Sig. (2-tailed)	0.000	
		N	43	43

**Correlation is significant at the 0.01 level (2-tailed)

Correlation coefficient between the two variables is given as 0.761.the significance value of this coefficient is 0.000 for a sample size of 43. Further the BCa 95% confidence interval ranges

from 0.821 to 0.860 and since it doesn't cross zero and the significance is less than 0.05, this shows that there exists a strong positive relationship between ICT Change Management and Project Performance. Hence the study accepted the alternative hypothesis three. **H₁₃**: Information Communications and Technology Change Management has a significant impact on Project Performance.

Summary, Conclusions and Recommendations

The study confirmed that there was a significant relationship between the adoption of ICT and Performance of Projects at KAA. At BCa 95% , confidence interval ranges from 0.821 to 0.860 and since it doesn't cross zero and the significance is less than 0.05 and a Spearman's rank correlation coefficient of 0.659. The study confirmed that there exists a strong positive relationship between the Quality of Information and Performance of Projects in KAA with and a Spearman's rank correlation coefficient 0.741, with the coefficient having a significance value of 0.000, for a sample size of 42. Further, the BCa 95% ranges from 0.572 to 0.859 which does not cross zero and the significance is less than 0.05. The study revealed a strong positive relationship between the variables from the calculated Spearman's correlation coefficient of 0.761. The significance value of this coefficient is 0.000 for a sample size of 43. Further the BCa 95% confidence interval ranges from 0.821 to 0.860 and since it doesn't cross zero and the significance is less than 0.05, showing a significant relationship between ICT change management and Performance of Projects.

The research adduced that ICT applications such as Electronic Document Management Systems (EDMS), Application Service Providers (ASP) and E-business applications can be used to automate routine procedures. If well used and managed they are bound to positively affect Project Performance. As noted by (Kibuthu, 2016), Project Performance is pegged on adoption and proper use of applications so as to enhance key processes e.g. supply chain management.

The research reiterate that, during planning of a project the quality of information used in decision making is imperative. Hence, a methodology is needed for the purposes of anticipating, reviewing, and controlling information sources and uses. It established that access to quality information can enhance decision leading to better transparency, accountability and reduction of corruption. Finally the study reiterated that optimistic attitudes and customer centric approach towards ICT resources all affect the speed and level to which we embrace ICT. Uptake of new technology is greatly impacted by individual attitudes.

Conclusion

With reference to the correlation coefficients, Quality of Information and ICT Change Management were found to have slightly higher correlation to Performance of Projects than was the case with ICT Resources. ICT Resources that were adopted to enhance Project Management in KAA are seen to have enhanced project team collaboration by introducing modern communication. The ICT applications in use have simplified routine procedures like scheduling

of activities, documentation, reporting and analyses. Most of the work packages that had to be done separately have since been integrated through applications such as ERP. This has had the overall effect of improving time management and enhancing information security. All these factors have a direct effect on how a particular project performs.

Quality of Information is paramount for effective and timely decision making in project management. The quality of decisions made has a bearing on productivity of the project team since it determines how they are engaged and utilized towards achieving project objectives and the overall organizational goals. For effective cost control, budgeting and resource allocation, information used by the management must be of high quality to keep erroneous judgement at a minimum. Efficiency in terms of cost, time and quality is a key determinant of how well a project ends up performing.

ICT Change Management strategies are important for any organization that intends to heavily adopt ICT into its day to day operations. Getting the employees to accept and making them comfortable in the ICT environment determines whether the adoption will be a success or just another wasted investment. The senior management has to be seen to support the adoption of ICT by continuously creating a good atmosphere in terms of training, technical support and involving all the stake holders during the planning and implementation of the transition to ICT based operations. Also, the necessary changes need to be done to the organizational structure and culture so as to foster an ambient environment for learning and innovation. In order to survive in the modern business world, organizational change is inevitable. The ability to implement these changes while keeping resistance at a minimum greatly determines the eventual performance of a project.

Recommendations

Government parastatals should be encouraged to embrace technology in their day to day activities to enhance performance. Policy makers should keep themselves abreast with trends in ICT and other related fields to ensure that they are not hit by obsolescence so as to survive in the modern business world.

To ensure that the hefty budgetary allocations that are associated with ICT project return value to Parastatals, a clear and actionable change management strategy should be developed. Once capacity has been developed and goodwill among the employees exists, the benefits that are accrued with integrating ICT into management of project will be evident in improved performance.

The quality of information used in decision making especially with regard to project management should be upheld. For a project to be able to adhere to budgets and meet quality specifications accurate information needs to inform any decision making.

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