FACTORS INFLUENCING IMPLEMENTATION OF INFORMATION COMMUNICATION TECHNOLOGY PROJECTS IN NATIONAL GOVERNMENT MINISTRIES IN KENYA

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ABSTRACT

This purpose of the study was to establish the factors influencing implementation of ICT projects in the National Government Ministries in Kenya with a focus on ICT infrastructure, organization structure, financial resources allocated to ICT projects and ICT expertise capacity. Such comprehensive analysis of factors influencing implementation of government ICT projects in one study is rare and information on the four dimensions factors is scarce. Yet, National government ministries in Kenya have continued with ICT projects implementation over the years under the e-Government master plan framework with mixed performance outcomes. Several studies conducted on implementation of ICT projects have concurred that implementation of ICT projects in national government ministries in Kenya fail in different stages due to numerous reasons. This study apply a combination of ICT diffusion and adoption theories and was conceived to highlight the most critical ICT, organizational, financial and ICT expertise capacity factors requiring attention of ICT project implementers in Kenyan public sector context. The specific objectives of this study therefore included: to establish the influence of ICT infrastructure; organization structure; financial resources allocated to ICT projects and ICT expertise capacity on implementation of ICT projects in the National Government Ministries in Kenya. The target population of the study included all officers from Administration, Finance, Central Planning, Procurement, ICT, Human Resource Management and Development (HRM&D), Accounts and a Technical Department involved on ICT projects management in all the 21 National Government Ministries in Kenya. Purposive sampling technique was used to select a sample size of 189 respondents from the eight departments of the 21 National Government Ministries so as to only include those who are involved and hence have experiences in ICT project implementation processes. Data was collected by use of both closed and open ended questionnaires. A pilot test of the questionnaire was administered to in one of the ministries to establish the validity and reliability of the questionnaire. The collected data was analysed using Statistical Package for the Social Sciences (SPSS) and presented in both descriptive and inferential statistical outcomes. In the end, the study established that each of the four factors was critical in influencing implementation of ICT projects in government. Further scrutiny revealed that ICT infrastructure and financial resources allocation were the most critical and significant factors influencing implementation of ICT projects in government. The study findings are deemed very important for not only the government ICT project implementers, but also other stakeholders and academia community. The government and key stakeholder will immensely benefits from the findings by being informed on the critical ICT, organizational, financial and ICT expertise capacity factors requiring their attention for the success of ICT project implementation in the public sector. The knowledge exuded in this study will definitely enhance decision making, financial resource allocation and successful implementation of ICT projects in the National Government Ministries and County Governments in Kenya. The study findings will also extend the various theoretical models applied in it to extend

frontiers of knowledge in the areas of ICT project management, diffusion and adoption of ICT innovations theory and in establishing specific areas for further research which are outside the scope of the study.

INTRODUCTION

As nations embrace e-government, the economic benefits of ICT projects are not the problems, at least for now. The challenge now is the failure of these projects that may then result to wastage of resources. Kenya being one of the developing countries gradually started embracing the use of Information Communication Technology (ICT) in the early 1990s where critical e-Government services were operated by the Government IT Services (GITS), a department in the Ministry of Finance by then. The main services provided majorly included payroll services and the Integrated Financial Information System. However, in 2004, the President's Office established the Directorate of E-Government with the mission of ensuring that E-Government services in Ministries and semi-autonomous Government agencies (SAGAs) are effectively integrated. The Kenya ICT Board was founded in 2007 with the goal of promoting Kenya as a regional ICT hub. It was also designated as the implementing company for a $114.4 million World Bank loan for the Kenya Transparency and Communication Infrastructure Project (KTCIP), which was intended to finance ICT initiatives in government, colleges, and schools, as well as some selected ICT companies. While it managed to market Kenya as a regional ICT hub and also executed several high-impact projects in government, judiciary and universities by the year 2012, the execution of e-Government projects, however, created an overlap between the role of Directorate of E-Government and that of the Kenya ICT Board. To address the overlap, the Government created the Kenya ICT Authority (ICTA) as a state corporation under the Ministry of Information Communications and Broadcasting, State Department for ICT through a Legal Notice No. 183 of August 2013 where GITS, Directorate of E-Government and Kenya ICT Board were merged.

Kenya's government has laid out several strategies to realize vision 2030, which looks forward to upgrading the national ICT infrastructure and improving service delivery. In the last decade, it has emerged as an African ICT hub, thanks to the innovative pacesetting technologies, including M-pesa by the mobile telco giant Safaricom which has put the country on the global map. The liberation of the ICT sector started with splitting the Kenya post and Telecommunication Cooperation into three entities. This was also boosted by the entry of private players, which boosted the country's distribution of ICT infrastructure. The government has underscored universal access to ICT as the primary goal of vision 2030. Increased access to the ICTs would play a pivotal role in the country's economic growth. It would increase business efficiency, lower transaction costs, enhance competence and accountability on the government officials and improve the education standards.

In Canada, numerous studies have been done on the area of ICT projects implementation for both the private and public organizations, however, two academic studies focused on Electronic Government implementation. The first study was carried out by (Merrill Warkentin, David Gefen, Paul Pavlou and Gregory M. Rose., 2002) which was on the proposal of a conceptual model on Electronic Government implementation with the citizen trust being the underlying catalyst for this implementation. With the online tax services being one of the most widely used for the electronic services in several countries, the authors proposed how to increase the citizen trust in online services, while on the side of Institution-based trust the areas would be having in place a fair and independent judicial system that was seen as a key factor that would build trust in Electronic Government.

Government online services were trusted by the experienced users who believed in the system because of using it over a long period and realizing it was beneficial to them in accessing the services effectively and efficiently. There was the negative influence on ICT systems implementation in Canada which was brought about by the fear of personal information being lost as well as mentioned on the internet. What encouraged the implementation of ICT projects on the other hand is the individuals' perception that they had control over how their personal information would be acquired or even used. Further, a model proposed by Gilbert and Balestrini (2004) looked into the combined attitude and service-quality approaches. For this model, the dependent variable was the user's willingness to use the Electronic Government services while the independent variables that were perceived barriers plus the benefits that were also perceived. The perceived barriers consisted of confidentiality, enjoyment, reliability, ease of use, safety and visual appeal. The perceived benefits included the convenience, time, personalized and no personal interaction with the people offering these services. There was also the other factor of age influencing the implementation of Electronic Government.

Research done by (Njuru, 2011) and (Lubua & Maharaj, 2012) reveals that there are lessons that we can learn from African countries like South Africa who have successfully implemented Electronic Government with the aim of providing government services to the citizens online with a view of improving service delivery. Some studies indicate that African governments like South Africa and Nigeria have invested through laying of fibre optic cables, training of human resource as well as development of interactive web portals to achieve higher e-readiness indices.

Besides, according to (Jakachir, 2009; Miriam et al., 2009) there are studies that have been undertaken to examine, investigate and evaluate the various aspects of the implementation and usage of ICT in the public sector with more emphasis being on the technical, users and organizational aspects of Electronic Government. It is also noted that implementation of Electronic Government has had a positive impact in the transformation of service delivery in the public sector where the citizens are able to get prompt services and also reduced incidences of corruption to a larger extent.

According to research done by Gichoya (2007) it was not clear from any published source who was in charge of government ICT, and therefore if this was true, then it meant there was lack

of coordination, and yet, coordination is necessary for successful implementation as pointed out by Mow (2014). Though the government has set up a directorate of e-government, the relationship between it and other bodies dealing with ICT in government is not clear from any published source. However, currently, the status has changed since there is a fully fledged ministry/department in charge of the ICT docket which was established through a legal notice of May 2016.

Despite Kenya being classified as a less-developed country according to the UN's Computer Industry Development index, the country managed to successfully introduce online government services with the aim of improving its services and reducing corruption (GOK, 2013). There are several institutions that have been setup to help the country attain the vision 2030 pillar of Economic stability. Among the institutions established in 2013 by the Government of Kenya is the Information and Communication Authority. Its mandate was to coordinate all ICT activities in the country and make Kenya known globally as a local and inter National ICT hub.

There are a wide range of ICT Initiatives and projects ongoing in Kenya focused on e-Infrastructure. They include Konza City, County Connectivity projects, National Fibre Optic Broadband Infrastructure, and Digital Migration (IST Africa, 2017). Others include eLearning and Skills development (the Laptop Programme, Digital Learning Programme, Presidential Digital Talent Programme), Digital Inclusion (Pasha Centres/Digital Villages), Business Process Outsourcing, Local Content Programme (Tandaa Digital Content Grants, Open Data Portal), Information Security and Other Initiatives (zero-rated taxes on imported ICT hardware, eGovernment).

ICT Projects that have been implemented by the government are categorized into e-Infrastructure Projects; eLearning and Skills development Projects; Digital Inclusion Projects; Automation (Digitization) of Government Services Projects; and other ICT Projects Initiatives. E-Infrastructure projects in which the National Government has embarked on include Konza Technology Park, County Connectivity Project, and the National Fibre Optic Broadband Infrastructure (NOFBI) (Barakabitze et al., 2019). ELearning and Skills development Projects include Digital Learning Programme (DLP), and Presidential Digital Talent Programme. Digital Inclusion Projects include Pasha Centres and Digital villages, Business Process Outsourcing (BPO)/IT, Enabled Services Local Content Programme, Tandaa Digital Content Grant, Kenya open data initiative (KODI), and Information Security.

Projects under Automation (Digitization) of Government Services include E-Citizen online portal, Integrated Financial Management System (IFMIS), iTax, Public Service Commission Online Recruitment Portal, Government Human Resource Management System (GHRIS), National Employment Authority Integrated Management System (NEAIMS), Transport Integrated Management System (TIMS), Integrated Command, Control and Communication (IC3) Project among others (IST Africa, 2017). Other ICT Projects Initiatives include the central procurement of ICT Hardware, software and services under the Ministry of ICT.

Statement of the Problem

Kenya seeks to position itself in the global economy and the digital world in the future by spearheading innovation projects in ICT. The e-commerce and digital economy are very likely to take centre stage in the next few years. Therefore, Kenya needs to be more aggressive in laying out ICT infrastructure and policy framework, which would make it benefit from the opportunities presented by the digital revolution. The government has launched numerous ICT projects, created plans and laid frameworks for ICT projects implementation. Currently, ICT is governed by the national policy of 2016, which is an update of the national policy set a decade earlier. The Kenyan National Government has continuously invested in ICT projects with a view of enhancing service delivery to its clients. The National Government Ministries in Kenya have over time initiated and implemented ICT projects such as the National Fibre Optic Caple Project (NOFBI) and the County Connectivity Project (CCP) among others.

Though Kenya has made good strides and gained a modest global ranking on ICT implementation, the government's ICT projects fail in different stages including implementation stage; initiation stage, and others do not kick off at all. Some factors such as corruption in the public sector and lack of necessary monitoring and evaluation competency to guide the implementation remain a challenge in realizing the ICT goals. This exposes the gap that adequate study has not been carried out to identify the challenge of implementing ICT projects in the government of Kenya. Mukhongo (2008) notes that ICT forms the backbone of reforms in governance and reengineering service delivery in government agencies. Few studies highlight the factors that cause the failure to implement the ICT programs and what needs to be done to overcome them.

From previous studies, it is noted that factors such as project teamwork and composition, project management, effective communication, change management program and culture, business plan and vision, weak external consultancy, post-implementation support, inappropriate skills, unclear goals and objectives, scope management during the project, unrealistic time or resource estimates, all influence the implementation of ICT projects (Cushing, 2002). Ndemo (2012) observed that most of the stakeholders, consultants and project managers have made up their own personal opinion and conclusion about the ultimate causes of failure of ICT Projects. However, he notes that success or failure of a project cannot be determined at one single point in time, but over the full-life of the solution delivered by the project. According to Whittaker (1999), most ICT projects fail due to lack of structural issues such

According to the Peansupap (2004) lack of proper requirements analysis, lack of user involvement, lack of resources, lack of planning, lack of IT management, technology illiteracy, lack of executive support and unrealistic expectations are among the major causes of ICT project failures. The National Government Ministries in Kenya have over time initiated and implemented ICT projects such as the National Fibre Optic Caple Project (NOFBI) and the County Connectivity Project (CCP) among others. This proposal, therefore, aims to establish

the factors that influence the implementation of ICT Projects in the National Government Ministries in Kenya.

Objectives of the Study

(i)   Establish effects of ICT infrastructure on the implementation of ICT Projects in the National Government Ministries in Kenya.

(ii)   Establish relationship between organization structure and implementation of ICT Projects in National Government Ministries in Kenya.
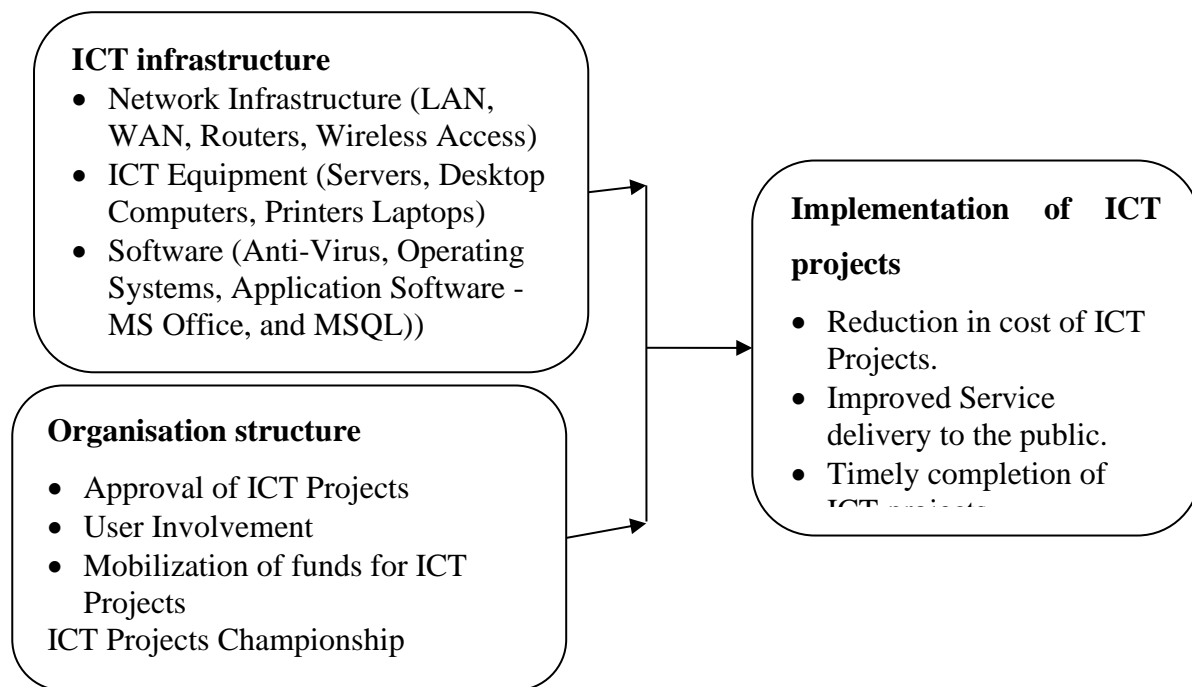
LITERATURE REVIEW

Theoretical Review

The study was based on the Resource Based Theory Discussed below: The Resource-Based Theory of competitive advantage suggests that possession of unique resources that are rare and difficult to imitate enables the company to generate margins and retain more customers than its competitors (Jurevicius, 2013). The proponents of the theory suggest that the management should look for sources of competitive advantage inside a company instead of looking for its competitive environment. The resource-based view suggests that it is more feasible to use internal resources to exploit external opportunities rather than acquire new skills for each opportunity.

For the successful implementation of ICT projects in government ministries, one should take advantage of the existing resources rather than investing in new ones. Doing so would ensure that the projects run into a success. Instead of acquiring the new physical resources such as buildings, machinery, equipment, servers, the project team should find a way that existing physical resources can be utilized to cut the initial and operational cost. The project should be designed to align with the existing processes and operations so that the employees in the given ministries can appreciate the value of a particular project. It should enhance daily operations and have an advantage over the manual process.

The Resource Based Theory was investigated how the existing ICT infrastructure can stimulate the implementation of government ICT projects. It helped check whether the existing infrastructures and frameworks are enough to implement the ICT projects. It was also identifying the government's role in ensuring that infrastructure such as internet connectivity and electricity connectivity is spread across the country. The Resource Based Theory therefore was applicable to the ICT Infrastructure variable.

Conceptual Framework

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┌─────────────────────────────────┐
│ ICT infrastructure              │
│  • Network Infrastructure (LAN, │
│    WAN, Routers, Wireless       │
│    Access)                      │
│  • ICT Equipment (Servers,      │          ┌─────────────────────────┐
│    Desktop Computers, Printers  │          │ Implementation  of  ICT │
│    Laptops)                     │ ────────►│                         │
│  • Software (Anti-Virus,        │          │ projects                │
│    Operating Systems,           │          │                         │
│    Application Software -        │          │  • Reduction in cost of │
│    MS Office, and MSQL))        │          │    ICT Projects.        │
└─────────────────────────────────┘          │  • Improved Service     │
┌─────────────────────────────────┐          │    delivery to the      │
│ Organisation structure          │          │    public.              │
│                                  │ ────────►│  • Timely completion of │
│  • Approval of ICT Projects     │          │    ICT projects         │
│  • User Involvement              │          └─────────────────────────┘
│  • Mobilization of funds for ICT│
│    Projects                      │
│ ICT Projects Championship       │
└─────────────────────────────────┘
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Empirical Review

ICT Infrastructure

The growth in the National structure of both developed and developing countries as a result of rapid evolution of digital and networked technology has enabled the responsive governing of their states by governments and the maintenance of the global economy (Castells, 2000). This pervasive and ubiquitous computing environment has created concerns within the development community on how to assess or understand the connection between national development and the impact that these technologies have on people. In the 1980s, the International Telecommunication Union (ITU) embarked on an initiative that led to major research on how ICTs and their interconnected network could be expanded across the world in order to align with the national developmental benefits (e.g., health, social services, administration and commerce) and to spur economic growth that could enhance the quality of life. In 2003 and 2005, the World Summits on the Information Society (WSIS) organized by the United Nations served as opportunities for governments, development practitioners and international donors to deliberate on issues related to the potential impacts of ICTs and their roles in global development (Hamel, 2010). The outcome of the summits positioned ICTs as an essential tool that have the potential to deal with National development concerns and that could be used to realize Millennium Development Goals.

According to (OECD, 2007) report, ICT infrastructure is the physical capital that has been assumed to promote growth through developing the capital stock and facilitating the new technologies into the production process. Further, (OECD, 2007; ITU, 2007) report indicates

that ICT infrastructure served as the most dynamic component of investments in the last few decades due to its capability to improve global economies by easing the ups and downs of the economic cycles. For instance, investment in ICT at the individual level is targeted to improve the quality of life by giving that individual access to information and the exchanges of thoughts and aspirations which often occur in all levels of economies. On the other hand, there is no doubt that investment in National ICT infrastructure is the catalyst for successful implementation of ICT projects.

Research by Pick and Azari (2011) indicate that the constant investments in ICT coupled with good governance, leads to technology readiness, which influences high level of ICT usage. There is also a direct relationship between ICT infrastructure investments and levels of human development (Bankole et al., 2011a&c). However, the challenges that face IS scholars and practitioners are to understand the research direction at macro-policy level at which investments in ICT Infrastructure usage have impacted National development. Some of these challenges are associated with lack of a unified theoretical framework and lack of in-depth understanding of the research direction (Bankole et al., 2011b &c; Soper et al., 2012). This dialogue responds to the latter as an attempt to resolve some of these challenges. It is therefore emphasized that ICT utilization is related to a measure of direct and indirect usage of technology such as computing devices, the Internet and all channels of telecommunications (Bankole et al., 2011b; Pickand Azari, 2011). It is the degree to which individual citizens in a country utilize these technologies to understand their various societies, learn about choices, understand democracy and participate in activities. This means that the usage of ICT infrastructure is associated with achievement in the aspects of National development through efficient resource allocation, as described by Sen's capability theory (Laving and Qiang, 2004). According to (Bankole et al., 2011b), ICT infrastructure usage will provide a platform for provision of information regarding access to resources and the management of such resources efficiently. This therefore will help the study to understand the importance of ICT infrastructure in the implementation of ICT projects.

Organization Structure

It is the line of authority that determine the decision taken and distribute the type of work performed based on the strategic intent of the organization. Most of the ICT projects within the national government ministries usually involve multiple third parties such as partners, subcontractors and different ministries that may be affected by the project. The success of the project therefore become dependent on every stakeholder. The culture of an organization is defined by the experience of its members. The ICT project under implementation may conflict with the cultural norms within a given ministry which would highly affect its implementation. The management and other stakeholders may view the ICT project as a threat to some of the common cultural norms that the project may intend to solve. The ICT projects are implemented to improve service delivery and enhance transparency and accountability. The stakeholders with dubious activities will always fight with every means available at their disposal to ensure the projects do not materialize.

ICT implementation by definition is the factor that influence the way decision making in organizations are perceived at all levels by the project managers and team members. Research done by Kohli and Devaraj (2004) indicate that Management support plays a key role in the process of ICT projects implementation. Its success depends greatly on the way the leadership of the government entity perceive ICT. Leaders influence allocation of sufficient resources, such as funds for acquisition of hardware, software and hiring of human resource for project implementation of ICT projects in Government Agencies.

Most government departments and agencies both in the developed and developing countries have either adopted or are in the process of embracing ICT. All these are aimed at improving service delivery to its citizens in the Public Sector. This places great demands to the government in the way information is handled because of the infrastructure; all this is because the citizens are seeking and prioritizing quality in their lives through improved service delivery (Apulu & Latham, 2009) The key elements in effective and efficient service delivery in public institutions is reliable information and effective communication elements in. as a result of use of the right technology the quality is improved and information reaches everyone. According to Thong (1999) the attitude of the project team and the users who either implement or reject the technology that is used in an organization influences the overall performance of the said organization.

RESEARCH METHODOLOGY

This study adopted descriptive survey design. Based on Fraenkel and Wallen (2014) descriptive research survey design involves asking a large group of people questions about a particular subject with the aim of obtaining precise depiction of the characteristics of the subject under study and establish how frequent it happens. The unit of analysis for the study were 20 national government ministries involved in implementation of National Government ICT projects in Kenya. The unit of observation was the departmental heads in those ministries. The targeted respondents were HODs or DHODs in the following departments: Administration, Finance, Central Planning, Procurement, Information Communications Technology (ICT), Human Resource Management and Development (HRM&D) Accounts and one Technical Department. The sampling frame for this study comprised 21 ministries implementing national ICT projects. The sample size for the study is 180 sampled through purposeful sampling technique. A questionnaire was used to collect primary data. The data collected were coded to ensure they are in computer readable format. The research utilized quantitative data analysis methods. The data was analysed using descriptive statistics such as frequencies and percentages. Inferential statistics drawn from the analysis includes correlation, regression and ANOVA. The study model for regression was:

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + e$$

Where Y is the implementation of ICT Projects, B_o, is a constant $B_1 - B_2$ are coefficients

X_1 is ICT Infrastructure,

X_2 Organization structure

RESEARCH FINDINGS AND RESULTS

A total of 180 questionnaires were produced and administered to the sampled categories of respondents. At the end of the fieldwork, 139 useful questionnaires were coded and analyzed. The overall response rate was calculated to be about 77%, which is good enough for giving confidence for the generalization of the study findings (Holbrook, 2007).

Age distribution of the respondents depict that a majority (37.4%) are between ages 36 and 45 years, with about a third (30.9%) being in the ages between 46-55 years old.

Overall, 73.4% of the respondents have Bachelor's degree as their highest level of education, out of which 90% of them are female. The male respondents were, 63.6% who have bachelor degree. Respondents with CPA III and HRM&D mainly male, at 1.1%. About one in ten (12%) of the respondents have master's level of education, with male constituting 14.8%, which is about double the proportion of women (7.8%). Those with PhD education were majorly men constituting 4.5%.

Majority of respondents 42% having Bachelor's degree, respondents 63% having higher diploma and respondents 44% having diploma are in middle managerial level position. The illustration on the table further shows that 34% of respondents with Bachelor's degree, 13% of respondents with higher diploma and 12% of respondents with diploma were in management level respectively while 25% of respondents with Bachelor's degree, 25% of respondents with higher diploma and 44% of respondents with diploma were in operations level respectively.

Implementation of ICT Projects

The dependent variable in this study was the ICT project implementation which was measured by use of three items as presented in Table 1 below. Analysis of the items show that majority (86%) agreed that implementation of the ICT projects will contribute to timely completion of projects. Nearly nine in ten (93%) of the respondents said that implementing ICT projects would improve service delivery to the public, while 72.6% reported that effective ICT project implementation would reduce the cost of the projects.

Table 1: Implementation of ICT Projects

Responses	Agree	No Idea	Disagree	Total
Implementation of ICT Projects will contribute to timely completion of projects	86.3%	7.9%	5.8%	100.0%
Implementation of ICT Projects will improve service delivery to the public	92.8%	4.3%	2.8%	100.0%
Implementation of ICT Projects will reduce the cost of Projects	72.6%	15.1%	12.3%	100.0%

ICT infrastructure and implementation of ICT Projects

In terms of the independent variables and as the second objective of this study was to establish the effects of ICT infrastructure on the implementation of the ICT projects in national government ministries. Table 2 below shows the results. Eight in ten (82%) and 84% of the respondents acknowledged that application software and equipment respectively, are necessary in implementing ICT projects. Similarly, 87% agreed that network infrastructure does influence implementation of ICT projects. With the same vigour, licensed software such anti-virus and operating systems among others also does influence implementation of ICT projects. This was according to 76% of the respondents who agreed to that statement.

Table 2: ICT Infrastructure

Items	Agree	No idea	Disagree	Total
Network infrastructure	89.2%	4.6%	6.5%	100.0%
Internet Service providers	87.0%	6.5%	6.5%	100.0%
ICT equipment (Data Centres and Servers)	84.2%	12.2%	3.6%	100.0%
Licensed software (Anti-Virus, Operating Systems)	76.2%	10.1%	13.7%	100.0%
Application Software - MS Office	82.0%	7.2%	10.8%	100.0%

Organization structure and implementation of ICT Projects

The third objective of this study was on the relationship between organizational structure and the implementation of ICT projects. About eight in ten of the respondents agreed to the statement that approval of ICT projects (87%), user involvement (89.9%), mobilization of funds (84.9%), use of ICT project champions (81.3%) and having a competent ICT project team (89.9%) do influence implementation of ICT projects as shown in Table 3.

Table 3: Organization Structure

Items	Agree	No Idea	Disagree	Total
Approval of ICT Projects	87.1%	5.0%	7.9%	100.0%
User involvement	89.9%	3.6%	6.5%	100.0%
Mobilization of funds	84.9%	9.4%	5.8%	100.0%
ICT Project Champions	81.3%	11.5%	7.2%	100.0%
Competent ICT project team	89.9%	5.0%	5.1%	100.0%

Inferential Statistics

Regression Analysis

This study adopted multiple regression model that was discussed earlier in chapter three to evaluate the relationship between the variables of interest. The regression model composed of response variable (dependent variable) and explanatory variables (independent variables). The model of the study is represented by the formulae shown below

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

Where Y is the implementation of ICT Projects, B_0, is a constant $B_1 - B2$ are coefficients

X_1 is ICT Infrastructure,

X_2 Organization structure

Table 4.11 is the model summary for this study. R is the Pearson correlation and it shows how the variables correlate with each other. The value of correlation is 0.516 which depicts moderate degree of correlation between implementation of ICT projects (response) and ICT Infrastructure, Organization structure, financial resources allocation and ICT expertise capacity (predictors). While R^2 is the coefficient of determination which explains the how good fit the implementation of ICT projects and ICT Infrastructure, Organization structure, financial resources allocation and ICT expertise capacity. From the table the findings R square is 2.66 which means that only 26.6% of the DV variation was explained by the various IVs. However the relationships were significant as indicated by the ANOVA outcome below.

Table 4: Model summary

R	R Square	Adjusted R Square
0.516	0.266	0.244

a. Predictors: (Constant), ICT infrastructure, Organization Structure

Analysis of Variance (ANOVA) in Table 4, explains degree of variation between dependent and independent variables. The results showed that the regression equation significantly predicts the outcome $F (2, 138) = 12.12$, $p=0.000$ which is less than 0.05 which indicates that, overall, the regression model is statistically significant to predict the outcome variable (that is., it is a good fit for the data).

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.346	2	5.336	12.116	0.000[b]
	Residual	59.022	136	.440		
	Total	80.368	138			

a. Dependent Variable: Implementation of ICT Projects

b. Predictors: (Constant), ICT Infrastructure, Organization Structure,.

Table 5 shows coefficients of regression model, which provides the necessary information to predict the dependent and predictors. Implementation of ICT Projects $=\beta_0+$ β_1(ICT Infrastructure) $+ \beta_2$ (Organization Structure) $+ \beta_3$ (Financial Resources$)$ $+ \beta_4$ (ICT Expertise Capacity)**.**

Implementation of ICT Projects **=4.968 + 0.150**(ICT Infrastructure) + **0.003** (Organization structure)

The results showed that ICT infrastructure ($p=0.004$) is critical significant factor that affect the implementation of the ICT project. This is corroborated by the findings of this study as illustrated by Tusubira and Mulira (2009). Therefore, in terms of ranking, ICT Infrastructure configuration emerged to be the most critical factors followed by organization structure.

Table 6: Coefficients of Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.968	1.251		3.972	.000
	ICT Infrastructure	.150	.051	.239	2.921	.004
	Organization structure	.003	.064	.004	.043	.966

a. Dependent Variable: Implementation of ICT Projects

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Results from the analysis showed that majority of the respondents agreed that ring-fencing of ICT funds will ensure that funds are readily available to kick start the project. Similarly, timely access of the ICT funds would help minimize the bureaucratic approval process and value for money spent would positively contribute to the implementation of the ICT projects. This factor is so critical and important in implementation of the projects in that availability of financial resources and proper utilization ensure that projects are implemented within the specified timeframe.

Configuration of the ICT infrastructure emerged to be both critical and significant factor that must be carefully considered in the management of ICT projects implementation process in public sector. This could be attributed to the high expectations the public have on e-Government services. Furthermore, successful implementation of e-service projects require proper strategic planning of the required ICT infrastructure including internet, connections to enable communications, application software that will facilitate ICT project laptops, desktop computers, printers, copiers and internet connection. Availability of proper and well-conceived infrastructure makes it easier for implementation of the projects. Thus, availability of advanced and properly functioning ICT infrastructure positively influences the ICT project implementation success.

Organization structure emerged to be the least critical factor which means it is overwritten by the ICT infrastructures during ICT projects implementation. Organization structure includes people in the authority who ensure things are done the right way. The study focused on organization in relation to the mobilization of funds from government's ministry budget, and well-wishers to facilitate the implementation of the ICT projects. The results showed that majority of the respondents agreed that mobilization of funds is such an important factor in ensuring the project is planned and in enabling the in implementation of the projects. Similarly, approval of budget by those in management would lead to timely implementation while presence of ICT champions would play a key role in ensuring the projects run smoothly to its conclusion. Therefore, organization structure was established to be an important factor in implementing ICT projects in national government ministries although not significant in the relationship modeling.

Recommendations

This study recommends the following:

The government should take ICT infrastructures as the most critical factors affecting implementation of national ICT projects. Furthermore, while having the right ICT infrastructures in place, the project implementers must also carefully consider the level of ICT expertise so as to match the ICT advancements and strategy. The study findings imply that only government institutions that match best strategy to most advanced ICTs and best ICT skills are the most likely to succeed in implementation of mega ICT projects.

Particularly, coming up with adequate ICT budgets, implementing it faithfully, and coming up with the well-conceived ICT Infrastructure are good strategic moves towards ensuring success in implementation of ICT projects in government, especially at the National Government Ministries level. As much as the study presented ICT expertise to have a weaker significance in the relationship, it is important that it is considered critical for successful implementation of the ICT projects because it is people who conceive the nature of systems to implement, configure them and support their implementation to their successful end.

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