

Factors Influencing Technology Acceptance Model on Successful ICT Policies Implementation in Public Institutions in Kenya.

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-----ABSTRACT-----

Information and Communication: Technology (ICT), a merger of two technologies; Information Technology (IT) and Communication Technology (CT) to form Information and Communication Technology (ICT) made it possible for combined information processing and communication. Email, a consequence of ICT is one of the fastest means of communication worldwide. ICT is complex thus, the need for the ICT Policies for managing ICT resources. While the benefits of ICT in public institutions cannot be disputed, there are several concerns about its success as well as the strategies to be adopted in implementation of systems in various countries. The main purpose of the research was thus to analyse the factors influencing technological acceptance model on the successful implementation of ICT policies in public institutions in Kenya specifically Jomo Kenyatta University of Agriculture and Technology. The objectives was to determine the effect of organisational structure on successful implementation of ICT policies in public institutions. The study was to be based on the Technology acceptance model, Diffusion of innovation, Rate of adoption and organisational resource capability theories which were suited for this study. The study found that organisational structure influence the successful implementation of ICT policies in public institutions in Kenya. The study recommended that JKUAT should redefine the leadership and the organizational structure by encouraging the administrative leadership to assist the employees and students to integrate and implement ICT policies better in addition to financial and material support for additional institutions resources.

Keywords: Policy, ICT, TAM, Public Institutions, Organisation structure

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I. INTRODUCTION

1.1 Background of the Study

Information and Communications Technology (ICT) has become a central part of modern life. [31] notes that the four major technological trends - capacity, digitization, ubiquity, and convergence - are driving the current telecommunications revolution, which parallels the emergence of a global economy. As an economic sector, ICT outperformed all other sectors of the Kenyan economy over the last decade, growing at an average of about 20% per year [64] and Kenya's economy grew at an average rate of 3.7% of GDP [64]. The ICT sector also intersected with various other sectors including agriculture, education and healthcare.

The effort to write an information and communications technology (ICT) policy in Kenya has brought to the fore issues of modernization and distribution in that nation. However, Kenya has a case of slow speed of passage of ICT policies, low scope of implementation, low distribution, but high process and explains why the Kenya, with such capable people and relatively open ICT policymaking, has struggled to keep up with its poorer neighbours [12]. According to [16], policymaking incorporates many actors, influences, and courses of action that include; private sector and civil society organizations that are largely concerned with the capacity of ICTs to enhance civil liberties. Moreover, [16] state that ICT policy impacts three main areas: telecommunications, broadcasting and the internet. This requires the National ICT policy to be at par with the dynamism of the ICT sector. Historically, the formalization and institutionalization process of ICT policies in Kenya has been largely unstable and incomplete [16]. Kenya's policy entrepreneurs working within government made it possible for civil society and the private sector to have open conversations about the direction of Kenya's ICT policy [16]. The second draft of the National ICT Policy compiled by KIF, the civil society organization KICTAnet, the International Development Research Centre (IDRC), and the Ministry of Information & Communication was mainly based on ICT education and training; tax reductions and tax incentives on both computer hardware and software; and impediments that discouraged the growth of e-commerce [12].

1.2 Statement of the Problem

The formalization and institutionalization process of ICT policies in Kenya have historically, been largely unstable and incomplete [16]. According to the [25], the current 2006 National ICT 2006 policy requires reviewing. The review of the policies includes both legal and regulatory aspects aimed at encouraging the local ICT sector by enhancing its competitiveness. The policy incorporates key trends in the ICT sector including mobile money, cyber security and e-government. It also includes issues such as use of services offered via the internet including big data and over-the-top services as well as gaming [25].

Contrary to the fact that Kenya is one of Africa's ICT hub, it lags behind her regional neighbours in terms of developing and implementing the ICT policy 2006 with three years later than Uganda and Tanzania, and six years later than Rwanda [16]. Additionally, Kenya's scope of implementation is extremely narrow. With limited studies that have focused on ICT policy implementation in Kenya, the research will therefore determine the factors that affect the successful implementation of ICT policies in public institutions.

Kenya is currently at a point where ICT policy requires a balance between advancing ICT innovations, maintaining an appropriate level of control over all the ICT areas and encouraging Kenya's economic growth of which should trickle down to agent institutions. This requires the National ICT policy to be at par with the dynamism of the ICT sector. The Government recently launched the National Broadband Strategy for the 2013–2017, whose overall objective was to provide quality services to all citizens. For example, the strategy targets to increase by 2017, the minimum broadband speeds from the current 256 Kbps to 5 Mbps in rural areas and to 40 Mbps in urban areas; broadband diffusion in households from the current 6.3% to 35%; and, broadband subscriptions from the current 2% to 25%. Moreover, it seeks to have reduced broadband cost per Mbps in relation to the average national income from the current 30% to 10% [59].

1.3 Objectives of the Study

1.3.1 General Objective

The main purpose of the research was to analyse the factors influencing technological acceptance model on the successful implementation of ICT policies in public institutions in Kenya specifically Jomo Kenyatta University of Agriculture and Technology.

1.3.2 Specific Objectives

The specific objective of the study was;

- To determine the effect of organisational structure on successful implementation of ICT policies in public institutions in Kenya;

1.4 Research Question

(i) What is the effect of organisational structure on the successful implementation of ICT policies in public institutions in Kenya?

1.5 Research Hypotheses

- H01 The nature of the organisational structure does not have a significant contribution on successful ICT policy implementation in public institutions in Kenya;

1.6 Justification

It is hoped that the study will be able to assist the government and public institution administration in formulating ICT policies that will address effectively ICT policy regulation in public institutions. The study will also be of importance to administrators, as with the use and application of modern ICT trends in managing and delivering of effective and efficient services to the citizens or public at large requires the institutions to have the ability and capability to formulate and implement ICT policies. Moreover, the study will suggest various strategies for ICT policy formulation and implementation in public institutions in which they can use to be at par with the use of ICT and experience the benefits of modern day technology.

1.7 Scope

The study was confined to the Jomo Kenyatta University of Agriculture and Technology campuses in Kenya. The focus was restricted on Senior, middle level management staff and ICT students in the campuses. The study took place in a period of fifteen months within the months of September and November 2017.

II. LITERATURE REVIEW

2.1 Introduction

Research needs to have a theoretical model from where it is based. The technology acceptance model (TAM) proposed by [18] will be suited for this study. The technology acceptance model is selected due to self-efficacy, ICTs integration, adoption and challenges that hinder adoption of policies [49].

2.2 Theoretical Review

2.2.1 Technology Acceptance Model

Technology acceptance is defined by [1] as the user's willingness, acceptance, agreement and the continuous use of any technological system. This can be classified into behaviour and attitude acceptance. In technology

acceptance model, attitude towards using, the intention to start using and the actual adoption or use are indicators that the individual has accepted the technology and sees it as beneficial [39]. The theoretical foundation of TAM is based on the diffusion of innovations in the area of information and technology. This theory expounded an understanding of why users accepted new information and communication technology such as the Internet, E-mail, and Mobile phones. [30] claim that TAM is a measure of beliefs and attitudes which can predict behaviour in the future.

[50] state that TAM explains the process by which technology is adopted by individuals and can also be applied to organizations and institutions like higher education institutions. The model indicates that an individual's actions and behaviour are guided by beliefs and perceptions and assumes that there are some external factors that influence perceived usefulness and perceived ease of use. These factors also affect the external variables on user's attitude towards using a certain technology. The model therefore provides a basis for explaining the adoption process of the technology and the reasons behind or hindering any adoption [50]. In the technology acceptance model, though perceived ease of use and perceived usefulness are the major elements in the determination of an individual or institution's acceptance, adoption and usage on ICTs, there are other factors about the technology that influence the decision [14]. These factors include the environment within which the decision is being made, features of the technology and the characteristics of users who are being targeted.

Figure2. 1 TAM model (1989)

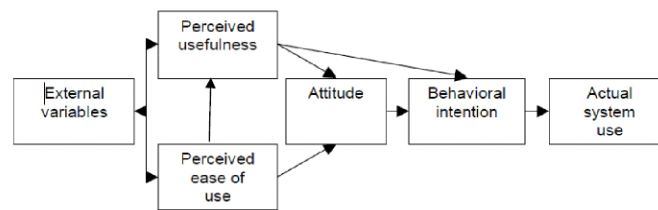


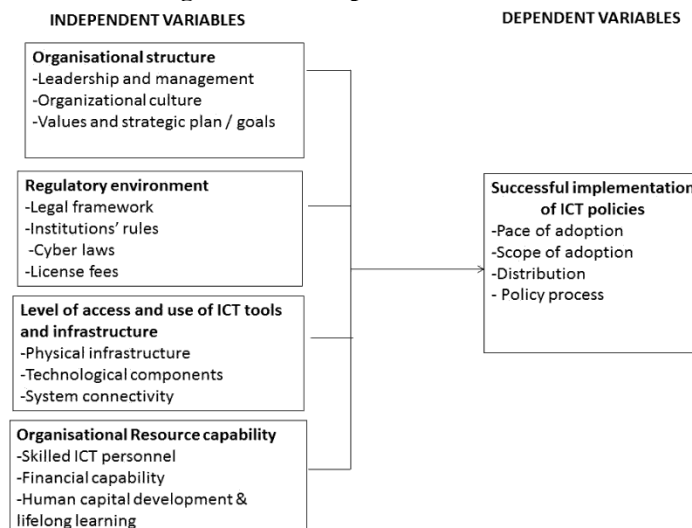
Figure 2-2 The TAM model is proposed by Davis

Some literature also shows that implementation processes, cultural adaptations, user characteristics, compatibility and credibility of systems, and organisational structure, along with political and social influences could exercise possible external impacts on TAM [3].

2.3 Conceptual Framework

A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation [11].The figure 2 shows the conceptual framework which diagrammatically shows the relationship between independent variables (Organizational structure, regulatory environment, level of access and use of ICT tools and infrastructure and organizational resource capability) and the dependent variable (successful implementation of ICT policies).

Figure2. 2 Conceptual Framework



2.4 Review of Variables

2.4.1 ICT Policies

According to [12], Kenya's progress on making ICT policy can be measured through four main indicators. Firstly, speed of passage, which reflects how quickly the ICT policy draft is passed after the proposal phase. Secondly, the scope of implementation reflects the extent to which objectives identified within the policy are implemented. This factor draws attention to how many types of government projects have benefited from active ICT infrastructure. Thirdly, distribution which has two dimensions: first, to what extent rural areas receive access to the new technology ("rural distribution"); Second, to what extent the technology is distributed to all rural areas and to what extent such rural distribution is "fair." The final indicator is the ICT policy process. The policymaking process provides a window into the concentration of power in society and the extent to which society is run by a small group of elites or a larger group of citizens. Process is best explained by the strength of civil society and the private sector, as well as the manner in which those social groups interact with the government to make policy [12].

2.4.2 Organisational Structure

This refers to the framework that managers devise for dividing and coordinating the activities of members of an organization [58]. In studying the challenges facing the implementation of strategies and policies at the Mumias Sugar Company Limited in Kenya, [10], found that the structure of an organization plays an integral part in the implementation of strategy and policies with the inclusion of and the successful acceptance of the strategy by all stakeholders in the organization. The organizational structure, processes, relationships and boundaries present internal sources of challenges. [21] found that the main barriers of policy and strategy implementation were the lack of coordination activities related towards the strategy implementation, differences in the processes of decision making, and the negative effect of the organizational structure on the outcome of the implementation process.

2.5 Critique of existing Literature

Several studies [52][24][8] have focused in policy implementation in developing nations have with ICT issues such as lack of appropriate products, cost of ICT devices, education, local language content, human resources and robust regulatory framework for ICT growth and also considered ways in which governments in developing countries are designing and adopting ICT policies and action plans to deal with the challenges. This has led to more studies that have focused on shortfall of a theoretical foundation in making and adopting ICT policies which results from gaps among policy design and actual outcomes and effectiveness of policy implementation. [6] focused on the ways in which developing countries are learning from gaps between policy design objectives and actual outcomes. The research presented an extended design-actuality framework within the context of evaluating government policies for ICT growth in a developing country but just presented the said gaps in a holistic bird's eye view.

A study by [33] regarding ICT infrastructure and policy implementation established that the process involves a complex transition from legacy information systems and business processes to an integrated IT infra-structure and common business process an organization. The study involved developed corporate firms in developed countries. There is need to carry out the same study in smaller, growing firms specifically public sector based to establish how policy implementation is affected by lack of adequate infrastructure. Review of literature has shown that certain legal environment may hinder effective implementation of policies in organizations. Although ICT related regulation are meant to support the functioning of organizations, it may be may pose some challenge to public institutions.

2.6 Research Gap

The literature on policy evaluation prescribes several evaluation methods that describe "best practices" in public sector or governmental policies [43]. The policy evaluation process can be prospective, that is ex ante, monitoring studies and retrospective, i.e., ex post, [7]. Ex ante policy evaluations are carried out in order to estimate and align goals, objectives and action plans associated with the policy. [56] state that monitoring studies that support policy implementation and make changes to the policies if need be as ex post evaluations focus on analyzing actual outcomes of the policy and provide subsequent legitimacy to policies with the purpose to find out "what works and what does not" in the policy design and implementation process. However, the lack of theoretical foundation in policy evaluations, implementation and models developed for the same with the extent of research on ICT policy evaluation being limited to the identification of successes and failures of national ICT policies in several countries [56][23]. Moreover, the categorization of ICT policies into successes and failures allows for subjectivity as a failure for something in an institution could be success for another [28]. There is therefore need to bridge the gap between just the identification of success and failures in regards to certain constructs, but also develop a model that best fits the said institution or company.

2.7 Summary

Organizations have a legal and moral duty to comply with the existing laws and regulations and thus need to understand what laws and regulations actually apply in their area of services, followed by the need to understand how they apply and what needs to be done to comply and ensure compliance on an ongoing basis. This requires time and resources, also with strong management, if it is to be done in an appropriate way [5]. There are various provisions posed by various governments concerning ICT or information system policy implementation. ICT policies should consider the integration of different related factors during the planning of ICT development. These factors include the use of computers and other ICT equipment and technical support in institutions, coupled with suitable leadership having a clear ICT vision, implications of ICT and integration of ICT into the work process.

Therefore ICT policy implementation requires more than understanding the factors that impede its adoption, but there is also need in grasping the environment and also the need of having a mechanism that can be used to ensure that the implementation is done.

III. RESEARCH METHODOLOGY

3.1 Introduction

This chapter is concerned with the various steps that were used to facilitate execution of the study to satisfy the study objectives. These steps include research design, study population, sample and sampling techniques, data collection instruments, validity and reliability of research instruments, data collection procedures, data analysis techniques and ethical considerations.

3.2 Research Design

The research adopted a descriptive design to collect the quantitative and qualitative data that described the technology adoption model in respect with ICT policy implementation in public institutions. This research study considers gathering of consistent and accurate data, as such, the study adopting a descriptive survey design. According to [44] descriptive research is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables.

3.3 Target Population

The target population comprised of all the campuses in Kenya that belong to Jomo Kenyatta University of Agriculture and Technology which totals to 11 campuses (See Appendix 4 with the list of campuses as per the JKUAT listing Year 2016). The study population comprised of staff in Management, ICT department, administration department and fourth year students in JKUAT. The study targeted staff in these departments since they are the ones involved in execution of the ICT practices and thus stand high chances of providing reliable information on determinants of successful implementation of ICT policies, secondly, management level hence they possess requisite qualifications and information provided is reliable. The target population was divided into four categories as shown in Table 3.1.

Table 3. 1 Target Respondents JKUAT (2016)

Category	Target respondents
Management Department	75
ICT Department	75
Administration Department	150
Students	200
Total	500

3.4 Sampling frame

Sampling frame is the source list, it is a group of items or respondents from which sample has to be drawn; it constitutes all the components of the target population [20]. It is the technical name for the list of the elements from which the sample is chosen from [40]. For a descriptive survey design a sampling frame usually consist of a finite population. In this study, the sampling frame was a list of 11 campuses sourced from the JKUAT list of campuses totaling to 500 respondents.

3.5 Sampling Size and Sampling Technique

Sampling is defined as a process of selecting the number of subjects for a given study which represents a larger group from which the subjects were selected while a sample is a smaller number of subjects obtained from accessible and representative population [47]. The study applied a combination of purposive and multi-stage sampling techniques to select the sample size for the study. In multi-stage sampling, samples are selected by using combinations of different sampling methods and it is usually carried out in large and diverse populations where sampling is done in two or more stages. The study considered this sampling technique since the respondents were obtained from different campuses and in different departments.

The study considered a purposive sampling technique since implementation of ICT policies is a technical activity of ICT personnel and top organization management staff and hence non-probability sampling method like purposive sampling helped in selecting respondents with technical knowledge and experience. The study then applied a stratified sampling technique to stratify the respondents into two departments; ICT staff and Administrative staff. According to [40], an optimum sample is the one that fulfils the requirements of efficiency, representativeness, reliability and flexibility. The sample was calculated using Yamane’s Formula [65]. Table 3.1 shows the target population and the distribution of the sample respondents as shown in Table 3.2.

The sample was calculated using Yamane’s Formula [65]. Where,
 n = the sample size,
 N = the size of the population

e = the error of 3% percentage points

By using Yamane’s formula of sample size with an error 3 % and with a confidence coefficient of 95% [65], the calculation from a population of 500 yielded a sample population of 155 respondents.

Table 3. 2 Sampling Frame

Jkuat Campuses	Management	ICT Dept.	Adm Dept.	Students (4 th year)	Total
Eldoret Campus	2	1	3	8	24
Kakamega Campus	2	1	3	8	14
Nakuru Campus	2	1	3	8	14
Kisii Campus	2	1	3	8	14
Karen Campus	2	1	3	8	14
Westlands Campus	2	1	3	8	14
Main Campus	2	1	3	9	15
Mombasa Campus	2	1	3	8	14
Kitale Campus	2	1	3	8	24
KQ Pride Centre	2	1	3	8	14
Kigali Campus	2	1	3	8	14
TOTAL	22	11	33	89	155

3.6 Data Collection Procedure

The instruments employed in the primary data collection were structured instruments. They were employed as the main instruments for data collection. The study thus used questionnaires as the main data collection instruments to collect primary data from the respondents. Questionnaire is a device used to collect data in an objective and a systematic manner for the purpose of the research [48]. Questionnaires were preferred because according to [20] they are effective data collection instruments that allow respondents to give much of their opinions regarding the researched problem. Most of the items in the questionnaire were closed-ended, with few open-ended items. The open-ended items serve to clarify the responses in the closed-ended items and to capture participants’ views on the impact of technology acceptance model on ICT policy implementation at JKUAT. The questionnaire was advantageous because it saved time on the part of the researcher and heightened the independence and accuracy of responses from the participants.

3.7 Pilot Study

According to [9] pilot testing of questionnaires involves testing the actual instruments on a small sample taken from the population with similar characteristic with the target population. It allows the evaluator/researcher to identify any difficulty with a method or materials to be used and to investigate the accuracy and appropriateness of any instrument that has been developed. [19] urges that it is essential that the newly constructed questionnaires be thoroughly piloted before being utilized in the main investigation. The questionnaire for this study was pretested with randomly selected respondents from a different institution. A total of 6 questionnaires were administered to the management, ICT department, administration and 3 randomly selected ICT students. Those selected for piloting were not included in the actual sample. They were requested to comment on the wording and the formulation of the questions, which improved the final questionnaire to ensure it obtained the richest data possible. The purpose of a pilot study is not so much to test the research hypotheses but rather to test protocols, data collection instruments, sample recruitment strategies and other aspects of the study in preparation for a larger study [51]. The reliability of the questionnaire was tested using Cronbach’s alpha correlation coefficient.

This is provided by the formulae:

$$\alpha = (1 - \dots)$$

Where;

n Number of questions

V^i Variance score of each question

V^{test} Total variance of overall score (not %s) on the entire test

The closer Cronbach's alpha coefficient is to 1, the higher the internal consistency reliability [57]. A coefficient of 0.7 is recommended for a newly developed questionnaire.

3.8 Reliability and Validity of Data Collection Instruments

3.8.1 Reliability

According to [62], (2014), the reliability of an instrument is the measure of the degree to which a research instrument yields consistent results or data after repeated trials. In order to test the reliability of the instrument, the Cronbach alpha test which is a measure of internal consistency was used in which closely relates a set of items are taken as a group. A "high" value of alpha often is used as evidence that the items measure an underlying (or latent) construct, is used. Reliability assessment of internal consistency of the items was determined using Cronbach alpha coefficient. According to [34] the general reliability coefficients around 0.9, are considered excellent, values around 0.8 as very good and values around 0.7 as adequate.

3.8.2 Validity

[8] suggest that the validity of the instrument is asking the right question framed from the least ambiguous way. The research adopted content validity to measure the validity of the instruments to be used. Supervisors and research experts in the Department of ICT were approached to evaluate the applicability and appropriateness of the content, clarity and adequacy of the research instrument from a research perspective.

Validity was also be checked by conducting a pilot study to ensure all the items in the study were functional. The pilot survey formed the basis of modifying the instrument for subsequent full-scale survey. This was done by identifying misunderstanding, ambiguities and inadequate items in the instruments. The desirability of pilot survey also ensured that the research instruments as a whole function well [13]. Preliminary analysis using the pre-test data collected enabled the researcher to amend the questionnaires. The pilot survey was administered to the ICT department in a different institution.

3.9 Data Collection Method

Data collection instrument is a device used to collect data in an objective and a systematic manner. For the purpose of research, data collection instruments can be questionnaires, interviews, schedules and available records [46]. In this study, the main data collection instruments were questionnaires containing both open-ended and closed-ended questions with the quantitative section of the instrument utilizing both a nominal and a Likert-type scale format. The Likert-type format was selected because according to [37], this format yields equal-interval data, a fact that allows for the use of more powerful statistics to test research variables.

Questionnaires were preferred since according to [40], the information obtained from questionnaires is free from bias and researchers' influence and thus accurate and valid data were gathered. The questionnaires were self-administered to a total of 155 respondents and later picked for data analysis.

3.10 Data Analysis and Presentation

Data was coded and entered into a Statistical Package for Social Sciences (SPSS) version 20 for data syntheses and analyses. Both descriptive and inferential statistics was employed in the study. Quantitative data was analyzed using descriptive statistical method; the statistical tools such as mean, mode and standard deviation will be used. Inferential statistic such as Pearson correlation coefficients and multiple regression models was used. The correlation and regression model was employed to compute the relationship between the independent and dependent variables at a confidence level of 95% [26]. Graphs and frequency tables were used to summarize the data and capture descriptive results.

The regression equation employed was as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where α is the intercept; Y = ICT policy Implementation (Dependent Variable); $\beta_1 \dots \beta_4$ = Regression Coefficients;

X_1 = Organizational structure;

X_2 = Regulatory environment;

X_3 = Level of access and use of ICT tools and infrastructure;

X_4 = Organizations' resource capacity

And ε = Error Term.

IV. RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the data collected to assess the factors influencing technological acceptance model on the successful implementation of ICT policies in public institutions in Kenya specifically Jomo Kenyatta University of Agriculture and Technology.

The results of the descriptive statistics address each research question. It should also be noted that while the total number of the useful questionnaire were adequate as observed in the previous chapter, in certain circumstances the reported results are based on fewer cases due to the fact that some respondents did not answer all the questions. In other words, the results indicate the percentage of the actual respondents to a particular question rather than the percentage of the total sample. With respect to the descriptive results, in situations where both or one of the tools were used, the results from the management and administration questionnaire are reported first followed by those from the ICT specialists /student questionnaire. In other cases the results from both questionnaires are combined for convenience of their presentation.

4.2 Response Rate

Out of the 55 questionnaires that were administered to the Management and Administration, 37 questionnaires were returned indicating that they offered a 67% response rate. Out of the 100 questionnaires given to the students and ICT specialists, 62 questionnaires were collected reflecting that they offered 62% response. According to [47] a 50% response rate is adequate, 60% good and above 70% rated very good. This implies that based on this assertion, the response rate in this case a range between 60 - 70% is good. The results are shown in table 4.1 below.

Table 4. 1 Response Rate

TARGET GROUP	Questionnaire s Issued	Questionnaires returned	Response rate
Management and Administration	55	37	67
ICT Specialists and students	100	62	62

Profile of the Respondents

4.2.1 Gender of the Respondents

The study sought to establish the gender of respondents. Respondents were thus asked to indicate their gender. The results are given in Figure 4.1 and Table 4.2.

Figure 4. 1 Gender of Management and Administration Respondents

The results in Figure 4.1 indicate that most of the respondents, 59% (management and administration) were male while 41% were female. This indicates that most of the management and administration were male though the female constituted a significant number of the management and administration employees.

The study further sought to establish the gender of ICT Specialists/Student respondents. Respondents were thus asked to indicate their gender. The results are given in Table 4.3.

Table 4. 2 Gender of ICT Specialists/Student Respondents

	Frequency	Percent
Male	37	59.7
Female	25	40.3
Total	62	100.0

On the gender aspects of the ICT Specialists /Student respondents, 59.7% were male while 40.3% were female. Over all, the distribution of the respondents by gender as observed in figure 4.1 and Table 4.2 is an indication of a balanced study population based on the existing staffing at the respective campuses and the enrolment of university students.

4.2.2 Age of the Respondents

The study sought to find out the respondents' age. Respondents were thus asked to indicate their age brackets. The results are shown in Figure 4.2.

Figure 4. 2 Age of the Management and Administration Respondents

The results in Figure 4.2 indicate that the management and administration respondents in age brackets 30-39 were 32.4%, 18-29 were 21.6%, 40-49 were 21.6%, 50-59 were 21.6% and those above 60 were 2.7%. This indicates that the ages of the management and administration were varied with most of them falling between 30 to 59 years of age.

The study further sought to establish the ages of the ICT Specialists/Student respondents. Respondents were thus asked to indicate their ages. The results are given in Table 4.3.

Table 4. 3 Ages of the ICT Specialists/Student Respondents

	Frequency	Percent
18-29	49	79.0
30-39	11	17.7
40-49	2	3.2
Total	62	100.0

The results in Table 4.2 indicate that most of the respondents (79%) were aged 18-29, 17.7% were aged 30-39 and 3.2% were aged 40-49. This indicates that most of the ICT Specialists/Student respondents were aged between 18-29 years with those above 30 years constituting a minor segment of the population.

4.2.3 Designation of the Respondents

The study sought to find out the respondents designations. Respondents were thus asked to indicate their designation. The results for the management and administration respondents are shown in Table 4.3

Table 4. 4 Management and Administration Designation

	Frequency	Percent
A/Lectur	2	5.4
A/Prof	1	2.7
A/Proff	1	2.7
Admin	5	13.5
Admin As	2	5.4
Ascod	2	5.4
Chieftec	1	2.7
Clerk	2	5.4
Cod	1	2.7
Fo	1	2.7
Lecturer	8	21.6
Proff	1	2.7
S/Lectur	1	2.7
Sec	1	2.7
Ta	6	16.2
Tech	1	2.7
Techn	1	2.7
Total	37	100.0

The results in Table 4.4 indicate that the management and administration respondents had varied designations in the universities. This indicates that the study’s sample size was adequate in sampling all professions in the targeted population.

The study also sought to establish the designation of the ICT Specialists/Student respondents. Respondents were thus asked to indicate their designation. The results are shown in Figure 4.3

Figure 4. 3 ICT Specialists/Student Designation

The results in Figure 4.3 indicate that most of the respondents (77.4%) were students while 22.6% were ICT specialists. This indicates that most of the ICT Specialists/Student respondents were students while a good sample of them were ICT specialists. This can be attributed to the high number of students in the university.

4.2.4 Academics Qualification of the Respondents

The study sought to find out the respondents highest academic qualifications. Respondents were thus asked to indicate their highest academic qualifications. The results for the management and administration respondents are shown in Table 4.5

Table 4. 5 Management and Administration Academics Qualification

	Frequency	Percent
Phd	10	27.0
Masters	13	35.1
Degree	12	32.4
Diploma	2	5.4
Total	37	100.0

The findings in Table 4.5 indicate that 35.1% of the management and administration respondents had Master's degree, 32.4% had a degree, 27% had a PhD while 5.4% had a diploma as their highest as their highest qualification. This indicates that most of the management and administration respondents had a minimum of a degree qualification and were thus qualified to answer the questions in the questionnaires.

The study also sought to establish the academic qualifications of the ICT Specialists/Student respondents. Respondents were thus asked to indicate their academic qualifications. The results are shown in Table 4.6

Table 4. 6 Academic Qualifications of the ICT Specialists/Students

	Frequency	Percent
Ph.D.	5	8.1
Masters	2	3.2
Degree	48	77.4
Diploma	6	9.7
Certificate	1	1.6
Total	62	100.0

The results in Table 4.5 indicate that most of the respondents (77.4%) had a degree, 8.1% had a Ph.D., 9.7% had a diploma, 3.2% had a Masters and 1.6% had a certificate. This indicates that most of the ICT Specialists/Student respondents had a degree and were thus qualified to answer the study's questions.

4.2.5 Numbers of years worked in JKUAT

The study sought to find out the number of years the respondents had worked at JKUAT. Respondents were thus asked to indicate the years they had worked at JKUAT. The results for the management and administration respondents are shown in Table 4.7

Table 4. 7 Management and Administration Worked in JKUAT

	Frequency	Percent
1-2 Years	8	21.6
3-4 Years	12	32.4
5-6 Years	4	10.8
Above 7 Years	13	35.1
Total	37	100.0

The findings in Table 4.7 indicate that 35.1% of the respondents had worked for more than 7 years, 32.4% had worked for 3-4 years, 21.6% had worked for 1-2 years and 10.8% had worked for 5-6 years. The findings indicate that most of the management and administration respondents had worked at JKUAT for more than 3 years and therefore had a working knowledge of the factors influencing technological acceptance model on the successful implementation of ICT policies at JKUAT.

The study also sought to establish how long the ICT Specialists/Student respondents had worked at JKUAT. Respondents were thus asked to indicate the years they had worked at JKUAT. The results are shown in Table 4.8

Table 4. 8 ICT Specialists/Student Worked in JKUAT

	Frequency	Percent
1-2 Years	4	6.5
3-4 Years	4	6.5
5-6 Years	4	6.5
Above 7 Years	2	3.2
Less than a Year	48	77.4
Total	62	100.0

The findings in Table 4.8 indicate that 77.4% of the respondents were not applicable to have worked at JKUAT, 6.5% had worked at JKUAT for 1-2 years, 6.5% had also worked there for 3-4 years as had those who had worked for 5-6 years. In addition 3.2% of the ICT Specialists/Student respondents had worked at JKUAT for over 7 years. This indicates that most of the respondents falling under the ICT Specialists/Student were students (77.4%) while the most of the ICT Specialists had worked at JKUAT for more than 3 years and were thus knowledge of the factors influencing technological acceptance model on the successful implementation of ICT policies at JKUAT.

4.2.6 Specialization in ICT

The study sought to establish if the management and administration respondents had specialized in their previous education. Respondents were thus asked to indicate their specialization in their previous education. The results are shown in Table 4.9

Table 4. 9 Management and Administration Specialization

	Frequency	Percent
Yes	17	45.9
No	20	54.1
Total	37	100.0

The findings in Table 4.9 indicate that 54.1% of the management and administration respondents had not specialized in their previous education while 45.9% indicated they had specialized. This indicates that most of the management and administration respondents had not specialized in their previous education though a significant number of them had specialized.

The study also sought to establish if the ICT Specialists/Student respondents had specialized in their previous education. Respondents were thus asked to indicate their specialization in their previous education. The results are shown in Table 4.10

Table 4. 10 ICT Specialists/Student Specialization

	Frequency	Percent
Yes	22	35.5
No	40	64.5
Total	62	100.0

The results in Table 4.10 indicate that most of the ICT Specialists/Student (64.5%) had not specialized in their previous education while 35.5% had specialized. This indicates that most of the ICT Specialists/Student respondents had not specialized in their previous education though a significant number of them had specialized.

4.3 Effect of Organisational Structure on the Successful Implementation of ICT Policies in Public Institutions

The study sought to determine the effect of organisational structure on the successful implementation of ICT policies in public institutions in Kenya. The results for the management and administration respondents explained in this section.

The study sought to determine extent to which organisational structure factors influences ICT policy. The respondent’s management and administration respondents were thus asked to indicate their extent of agreement or disagreement with various organisational structure factors. The results are shown in Table 4.11

Table 4. 11 Organisational Structure as a Factors Influences ICT Policy

Statement	Mean	Standard deviation
The structure of an organization can have a major influence ICT policy implementation	1.7568	.72286
Proper leadership at the top of the organizational level can influence the implementation of ICT policies in public institutions	2.0270	.79884

The results in Table 4.11 indicate that the management and administration respondents agree that the structure of an organization can have a major influence ICT policy implementation and proper leadership at the top of the organizational level can influence the implementation of ICT policies in public institutions as shown by means of 1.7568 and 2.0270 respectively. This indicates that the structure of JKUAT has a major influence ICT policy implementation and proper leadership at the top of JKUAT influences the implementation of ICT policies at the public institution.

The study also sought to determine the level of commitment and support from the top management. Respondents were thus asked to indicate level of commitment and support from the top management. The results are shown in Table 4.12

Table 4. 12 Level of Commitment and Support from the Top Management

	Frequency	Percent
Very High	1	2.7
High	21	56.8
Low	14	37.8
Not Able To Rate	1	2.7
Total	37	100.0

The results in Table 4.12 indicate that most of the management and administration respondents (56.8%) rated the level of commitment and support from the top management as high, 37.8% rated it as low, 2.7% rated it as very high while a further 2.7% indicated that it was not applicable. This indicates that level of commitment and support from the top management at JKUAT towards the implementation of ICT Policies is high. The small number who indicated that it is low can be attributed to the number of people who come into contact with the top management at JKUAT.

The study sought to determine the management decision making structure prior to ICT policy implementation. Respondents were thus asked to describe the management decision making structure prior to ICT policy implementation. The results are shown in Table 4.13

Table 4. 13 management decision making structure prior to ICT policy implementation

	Frequency	Percent
Role Model	3	8.1
Need Improvement	30	81.1
Not Sure	4	10.8
Total	37	100.0

The results in Table 4.13 indicate that most of the management and administration respondents (81.1%) indicated that the management decision making structure prior to ICT policy implementation needed improvement, 10.8% indicated they were not sure while 8.1% indicated it needed a role model. This indicates that the management decision making structure at JKUAT prior to ICT policy implementation needed improvement. The study also sought to explain the ICT policy implementation strategy within the organisations. Respondents were thus asked to explain the ICT policy implementation strategy within JKUAT. The results are shown in Table 4.14

Table 4. 14 ICT Policy Implementation Strategy within the Organisations

	Frequency	Percent
Very Capable	6	16.2
Unsure	17	45.9
Needs Development	14	37.8
Total	37	100.0

The results in Table 4.14 indicate that 45.9% of the management and administration respondents were unsure of the ICT policy implementation strategy within the organisation, 37.8% indicated that the ICT policy implementation strategy within the organisation needed development while 16.2% indicated that it was very capable. This indicates that the ICT policy implementation strategy within JKUAT is still in development and that there needs to be a communication strategy within the ICT implementation policy so that all the participants understand its progress.

The study also sought to determine the effect of organisational structure on the successful implementation of ICT policies in public institutions in Kenya. The results from ICT specialists and students are explained in this section. The study sought to determine how supportive the institutions management and other stake holders as regards to the adoption and implementation ICT policies. Respondents were thus asked to indicate how supportive the institutions management and other stake holders as regards to the adoption and implementation ICT policies at JKUAT. The results are shown in Table 4.15

Table 4. 15 Supportiveness of the Management and Other Stake Holders to the Adoption and Implementation ICT policies

	Frequency	Percent
Very Supportive	11	17.7
Supportive	35	56.5
Not Supportive	10	16.1
Not Able To Rate	6	9.7
Total	62	100.0

The results in Table 4.15 indicate that most of the ICT specialists and student respondents (56.5%) indicated that the management and other stake holders were supportive of the adoption and implementation ICT policies, 17.7% indicated that the management and other stake holders were very supportive, 16.1% indicated they were not supportive while 9.7% indicate that they were not able to rate the supportiveness of the management and other stake holders. This indicates that the management and other stake holders were supportive of the adoption and implementation ICT policies at JKUAT.

The study also sought to determine the extent to which some organizational structure factors/elements influence ICT policy at the institution. Respondents were thus asked to indicate to which extent those factors influence the ICT policy at JKUAT. The results are shown in Table 4.16

Table 4. 16 Influence of Organizational structure factors/elements on ICT policy implementation

Statement	Mean	Standard deviation
Organizational Culture & Organizational leadership	2.1613	1.01131
Synergy between strategy and organizational culture	2.3065	.78068
Organizational leadership rivalry among the top management	2.5323	.97034
Stable Cultural beliefs and Shared Values	2.5000	.93651
Organizational leaders have clarified the strategic plan intentions	2.4516	1.18290

The results in Table 4.16 indicate that of the ICT specialists and student respondents agreed that organizational culture and organizational leadership, synergy between strategy and organizational culture, organizational leadership rivalry among the top management, stable cultural beliefs and shared values and organizational leaders have clarified the strategic plan intentions as shown by means of 2.1613, 2.3065, 2.5323, 2.5000 and 2.4516 respectively. This indicates that the following factors and elements at JKUAT influence the ICT policy at JKUAT: organizational culture and organizational leadership, synergy between strategy and organizational culture, organizational leadership rivalry among the top management, stable cultural beliefs and shared values and a clarified the strategic plan intentions from the organizational leaders. This correlates with Kashorda and Waema (2014) who asserted that the university leadership to a level determines the institution’s ICT environment. Out of the four universities in the study, only two owned an ICT policy document at the time of data collection to guide implementation and use of ICT facilities and services.

4.7 Regression Analysis

Table 4. 17 Model Summary^b

Model Summary ^b					
Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.723 ^a	.522	.478		.38493

- Predictors: (Constant), Organizational structure, Regulatory environment, Level of access and use of ICT tools and infrastructure, Organizations resource capacity
- Dependent Variable: ICT policy Implementation

The *R* value represents the simple correlation and is 0.723 which indicates a high degree of correlation. The *R*² value indicates how much of the total variation in the dependent variable, ICT policy Implementation, can be explained by the independent variables, Organizational structure, Regulatory environment, Level of access and use of ICT tools and infrastructure, and organizations resource capacity. In this case, 52.2% can be explained, which is very large. The model summary shows that on the overall Organizational structure, Regulatory environment, Level of access and use of ICT tools and infrastructure and Organizations resource capacity have a significant influence on the ICT policy Implementation in public institutions in Kenya.

Table 4. 18 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.301	7	1.757	11.860	.000 ^b
	Residual	11.261	76	.148		
	Total	23.562	83			

The R-square of financial performance

a. Dependent Variable: ICT policy Implementation

b. Predictors: (Constant), Organizational structure, Regulatory environment, Level of access and use of ICT tools and infrastructure, Organizations resource capacity

This table indicates that the regression model predicts the dependent variable significantly well. $p < 0.0005$, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data).

Table 4. 19 Regression table for ICT policy Implementation factors Coefficients³

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.194	.870		1.373	.174
	Organizational structure	-.316	.192	-.188	-1.649	.103
	Regulatory environment	-.532	.528	-.461	-1.009	.316
	Level of access and use of ICT tools and infrastructure	.977	.350	.858	2.793	.007
	Organizations resource capacity	.189	.175	.616	6.803	.000

- Dependent Variable: ICT policy Implementation ANOVA^a

The Coefficients table changes the equations to

$$\text{ICT policy Implementation} = 1.194 - .316 (\text{Organizational structure}) - .532 (\text{Regulatory environment}) + .977 (\text{Level of access and use of ICT tools and infrastructure}) + 1.189 (\text{Organizations resource capacity})$$

The independent variable with the highest coefficient (β_3) = 0.977 was Level of access and use of ICT tools and infrastructure. This meant that a unit change in Level of access and use of ICT tools and infrastructure would positively influence ICT policy Implementation by 97.7% of the times. The coefficient of Regulatory environment was (β_2) = -0.532. This meant that a unit increase in Regulatory environment had the potential of negatively influencing ICT policy Implementation by 53.2%.

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following discussions, conclusion and recommendations were made. The responses were based on the objective of the study which sought to analyse the factors influencing technological acceptance model on the successful implementation of ICT policies in public institutions in Kenya specifically Jomo Kenyatta University of Agriculture and Technology.

5.2 Conclusions

The general objective of this study was to analyse the factors influencing technological acceptance model on the successful implementation of ICT policies in public institutions in Kenya specifically Jomo Kenyatta University of Agriculture and Technology. The specific objectives were as follows:

- To determine the effect of organisational structure on successful implementation of ICT policies in public institutions in Kenya;

The study established the following:

The management and administration together with the ICT specialists and students were predominantly male though females constituted a significant number of the management and administration employees an indication of a balanced study population based on the existing staffing at the respective campuses and the enrolment of university students.

The ages of the management and administration were varied with most of them falling between 30 to 59 years of age while those of the of the ICT Specialists/Student respondents were between 18-29 years with those above 30 years constituting a minor segment of the population. Therefore the study's sample size was adequate in sampling all professions and ages in the targeted population. Most of the ICT specialists/student respondents were students while a good sample of them were ICT specialists. This can be attributed to the high number of students in the university. Most of the management and administration respondents had a minimum of a degree qualification and were thus qualified to answer the questions in the questionnaires while ICT specialists/student respondents had a degree and were also thus qualified to answer the study's questions. In addition most of the management and administration respondents had worked at JKUAT for more than 3 years and therefore had a working knowledge of the factors influencing technological acceptance model on the successful implementation of ICT policies at JKUAT. As for those falling under the ICT specialists/student category, the majority were students (77.4%) while the most of the ICT Specialists had worked at JKUAT for more than 3 years and were thus knowledge of the factors influencing technological acceptance model on the successful implementation of ICT policies at JKUAT.

5.2.1 Effect of Organisational Structure on the Successful Implementation of ICT Policies in Public Institutions

The structure of JKUAT has a major influence ICT policy implementation and proper leadership at the top of JKUAT influences the implementation of ICT policies. Organizational culture and organizational leadership, synergy between strategy and organizational culture, organizational leadership rivalry among the top management, stable cultural beliefs and shared values and a clarified the strategic plan intentions from the organizational leaders influences the implementation of ICT policies at JKUAT.

The management and other stake holders were supportive of the adoption and implementation ICT policies at JKUAT. The level of commitment and support from the top management at JKUAT towards the implementation of ICT Policies is high. In addition, the management decision making structure at JKUAT prior to ICT policy implementation needed improvement.

Additionally the ICT policy implementation strategy within JKUAT is still in development and that there needs to be a communication strategy within the ICT implementation policy so that all the participants understand its progress.

5.3 Recommendations

Recommendations made in this section were derived from the conclusions about the study findings as presented in the previous section and focus on the direct interventions. The following recommendations were therefore made based on the findings and the conclusions of the study:

There is need to redefine the leadership and the organizational structure. JKUAT should redefine the organizational structure of the university by encouraging the administrative leadership to assist the employees and students to integrate and implement ICT policies better in addition to financial and material support for additional institutions resources.

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