# FACTORS INFLUENCING PRINCIPALS' INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY IN ADMINISTRATION PUBLIC SECONDARY SCHOOLS IN KITUI CENTRAL SUB COUNTY, KENYA

**Kimuyu Dorcus Nthenya**

**A Research Project Submitted in Partial Fulfilment of the Requirement for the Award of the Degree of Master of Education in Educational Administration**

**University of Nairobi**

**2016**

## DECLARATION

This research project is my original work and has not been submitted for award of degree in any other university.

_____

Kimuyu Nthenya Dorcus

E55/67165/2013

This research project has been submitted with our approval as university supervisors

_____

Dr. Jeremiah M. Kalai
Senior Lecturer and Chairman
Department of Educational Administration and Planning
University of Nairobi

_____

Dr. Ursulla Okoth
Senior Lecturer and Doctoral Programmes Coordinator
Department of Educational Administration and Planning

University of Nairobi

## DEDICATION

I dedicate this project to my husband Martin and our son Sidney

## ACKNOWLEDGEMENT

First, I wish to thank the Almighty God for giving me adequate grace to be able to progress this far in my academic pursuit. I am grateful to my supervisors Dr. Jeremiah M. Kalai and Dr. Ursulla Okoth for their scholarly and insightful guidance and accepting to be my supervisors. Their guidance and patience to me from the genesis made my work to be integral and unbiased in every way. Special thanks go to Dr. Jeremiah Kalai, Chairman Department of Educational Administration and Planning, University of Nairobi and the entire faculty members in the Department of Educational Administration and Planning, University of Nairobi fraternity for giving me a conducive environment for learning and achieving my dreams.

I am equally appreciative and grateful to all principals, deputy principals, and the Kitui Central Sub-County Director of Education office who participated as my respondents during my research. I also remember with special thanks my colleagues in the school based M.ed group 37 Department of Education Administration and Planning for their great inspiration during the entire study period. Thanks for the wonderful moments you accorded me during our learning process. I would not have made without your support. Lastly, I must thank my husband Martin Wandie, son Sidney K., parents, Mr. & Mrs. Kimuyu, brothers and sisters who provided an enabling and inspiring environment during my studies. “Thank you so much and may God bless you.”

## TABLE OF CONTENTS

**Content page** **Page**

**CHAPTER TWO**

**REVIEW OF RELATED LITERATURE**



**CHAPTER THREE**

**RESEARCH METHODOLOGY**

**CHAPTER FOUR**

**DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

**CHAPTER FIVE**

**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## LIST OF TABLES

## LIST OF FIGURES

## ABBREVIATIONS AND ACCRONYMS

| | |
|---|---|
| **B. Ed** | Bachelor of Education |
| **CD** | Compact Disc |
| **CDE** | County Director of Education |
| **DVD** | Digital Video Decoder |
| **EMIS** | Educational Management Information Systems |
| **ICT** | Information Communication Technology |
| | Innovation |
| **KEMI** | Kenya Education Management institute |
| **NACOSTI** | National Commission for Science, Technology and |
| **OECD** | Organization for Economic Cooperation and Development |
| **PGDE** | Post Graduate Diploma in Education |

## ABSTRACT

The purpose of this study was to investigate factors influencing school principals' integration of ICT in administration of secondary school Kitui Central Sub-County, Kitui County. Specifically, the study was set to establish the extent to which availability of ICT infrastructure influences ICT integration; extent to which school principals' ICT literacy levels influence integration of ICT; the influence of principals' attitudes towards ICT on its integration as well as finding out the extent to which availability of technical support influence principal's integration of ICT. The study employed a descriptive survey research design. The target population consisted of 35 principals, 35 deputies of the public secondary schools in Kitui Central Sub-County, one sub county education administrator. Sample size comprise of 32 principals, 32 deputies and 1 Sub County Education Administrator who were randomly selected. Questionnaires were administered to the sampled respondents. The study's main findings were that inadequate ICT resources and related infrastructure, inadequate ICT literacy among principals and deputy principals, lack of enthusiasm towards ICT integration among principals; and lack of technical support as well as frequent power outages influenced ICT integration in public secondary schools to a great extent. The main conclusions of the study are that inadequate ICT resources, ICT illiteracy among principals, negative attitude towards ICT integration among principals and lack of technical support were the main hindrances towards ICT integration in school administration in public secondary schools in Kitui Central Sub County, Kitui County, Kenya. The study recommended that principals liaise with school managers to avail ICT tools, Principals to attend workshops and seminars for training to acquire skills and boost the attitude as well. Schools were also recommended employ their own technical experts to avoid time wasting. For further research, this study suggested: a replica of same topic to be studied in other counties for comparison and also the same topic to be done investigating more variables that hinder ICT integration among principals like non-teaching staff ICT competency and availability of reliable power.

# CHAPTER ONE

# INTRODUCTION

## 1.1Background to the study

Information and Communication Technology (ICT) refers to all forms of technologies used to create, store, process and use information in its various forms which enable, facilitate and support communication as described by Lundall (2000). These include communication devices like mobile phones, televisions, radio, computers and network hardware and software. Integrating them in school administration has improved school management support and enhanced best practices in educational administration in institutions (Dawes, 2006).

Maki (2008) noted that administrative subsystems include: personnel administration, resource administration, student administration, financial administration and general school administration. School principals are in charge of both physical and human resource in the school. For the human resource, ICT helps him to keep details of discipline, performance, staff qualification, recruitment and staff turnover rate.

Communication with the staff has been made easy with the integration of ICT whereby sending a short text message has replaced the old method of sending mail which at times never got to the intended recipients. Monitoring of staffs' performance has been made possible through creation of work schedules like time

tables, records of work covered, examination records which keep a track of past performance. This helps to know when targets are being met and when not. For the physical resource, ledger accounts have made it possible to know the remaining stock at a glance. The records help to advice the administration on when to procure items needed on time to avoid shortage. Financial accounts and store ledgers promote accountability as one can be put to task to explain any unclear detail. Communication with school stakeholders has been eased by use of electronic mail (e-mail) that can be copied to many recipients at a click of a button.

Globally, countries like United States of America, Britain, Russia and Germany were among the first to integrate ICT in education sector mostly for administrative purposes as reported Mioduser, Turksapa and Leitner (2000). Such governments have invested heavily in financing schools ICT infrastructure making it easy for administrators to adopt it. The Organization for Economic Cooperation and Development (OECD) found out that Australian Government estimated about Australian Dollar $ 8 Billion allocated in education in 2008, U.S.A spend more than USD$9.5 billion on educational technology in schools. Such budgets boost schools in acquiring ICT infrastructure as schools are not profit making identities and operate with fixed budgets.

Farrell and Isaac (2007), in a study found that South Africa has established a comprehensive range of Educational Management Information Systems (EMIS) platforms that cover the acquisition, processing, dissemination and reporting of educational data at the national level and at different education strata. This strategy eases managerial duties of administrators as the same platforms are also disintegrated for use in the individual schools. In Kenya, the government established Kenya Education Management institute (KEMI) under Legal Notice no.19/2010 to equip school managers with management skills among them ICT awareness and integration. The government also setup ICT centres in some schools as a pilot programme to boost ICT in the secondary schools. Government effort to install electricity in all public schools both primary and secondary also aimed at improving ICT in schools.

Even with these immense efforts from various governments to boost ICT integration in secondary school management, there exist undesirable levels of adoption which is attributed to various factors. In Belgium, Pelgrum (2001) studied top ten factors affecting ICT integration in administration in schools in Belgium and found accessibility, insufficient numbers of computers, insufficient peripherals, insufficient numbers of copies of software, and insufficient simultaneous Internet access were vividly clear factors inhibiting ICT integration in education administration. These same factors are anticipated to be influencing ICT integration in school administration.

Waweru and Kihara (2013), in their study on the factors that challenge the adoption and utilization of ICT in public secondary schools in Molo Sub-County observed that the lack of ICT infrastructure due to the lack of funds emerges as the main setback in the adoption of ICT in schools. Schools are limited by finances because they operate with fixed budgets which are not flexible hence most of school principal continue to view spending on ICT infrastructure as luxury.

Administrators who use ICT diffuse the same to the other administrators within in the institution which eases communication through cell phones, electronic mail (e-mail), common Whatsapp platforms, Facebook and Twitter handle. Interconnected printing system helps the principal to manage printing from one pool to avoid exploitation of the facility. It could be argued, therefore, that once management adopts ICT in its practices, it diffuses and spreads to other institutional members and they become interested in its use.

Pelgrum (2001), on a study on attitude of school principals' and teachers' attitude towards computers notes that the attitude of the school principal will determine if this innovation is going to succeed or fail. Lau and Sim, (2008) and Jimoyiannis and Komis (2007) agreed that a considerable number of teachers hold negative attitude towards implementation of ICT in school, hence reason why some teachers avoid use of ICT totally. Principals with positive attitude towards ICT

will not only wait for the government to avail the infrastructure but goes out of his/her way to source and avail affordable gadgets through fundraisings, writing proposals to donors and corporate bodies to give a hand. Their positive attitude encourages other staff members to embrace the same.

Afshari, Bakar, Luan and Siraj (2012), in Iran principals, portrayed that the ICT literacy level of principals influenced their decision to integrate ICT in their transformational leadership role of administration in the schools. ICT literacy refers to skills and special ability to use ICT gadgets. These skills are acquired through training at different levels. KEMI in Kenya has played an important role in creating ICT awareness among the administrators which has a significant role towards ICT integration in administration. Mwencha (2012), in Isinya Sub County, discovered that regardless of the willingness of teachers to learn about the application of ICT, their ICT literacy level was below par which discourage them from attempting to use most of ICT gadgets. Literacy levels boost administrators' confidence as they are able to use the gadgets effectively. For instance a digitally literate principal will use ICT comfortably to calculate school, class and subject Means therefore is self advised if there is positive or negative skeweness thus take up the right measures.

Technical support is a major factor affecting ICT integration as it increases system reliability which in turn increases ICT integration (Butler & Sellbom,

2002). Technical support assures ICT users that any hiccups can be fixed thus no fears in using new technologies like new soft wares. According to Bingimlas (2009) technical problems act as a major obstacle in the way of ICT integration; if teachers are not confident that whenever they face a hardware, software or infrastructure problem somebody will quickly be available to fix it without wasting the class or teacher time, they will tend to refrain from using the technology in the targeted manner (Buabeng-Andoh, 2012).

Kitui County, just like other counties in Kenya suffers minimum ICT integration in secondary school administration. The situation is more prevalent in Kitui Central sub-county where out of 35 public schools, only six schools have embraced ICT integration as highlighted by the Sub- County Education Officer (2016). This confirms a conclusion made in a study by Richie (2002) that ICT works in some schools and hardly in others. It is in this light that this study aims to examine the extent to which availability of ICT infrastructure, principal's literacy skill levels, principals' attitude and availability of technical support influence principal's ICT integration in school administration in Kitui Central Sub-county.

### 1.2 Statement of the problem

While some countries have reported up to 41% of ICT integration in school management, administration and learning, the proportion remains substantially

low in Kenya despite the huge amounts invested in ICT .According to the Kitui Central Sub County Education Office (2015), of the 35 public secondary schools in Kitui Central Sub-County, only six have integrated ICT in school administration which is a mere 17%.

The role of ICT in secondary schools cannot be overemphasized due to the many advantages associated with it including easy work presentations, easy information access and easy monitoring and evaluation among others. Given that school principals as school administrators are concerned with issues of students registration, student discipline, class attendance, curriculum administration, personnel management, school community relationship, provision and maintenance of physical facilities and financial management, managing such a high number of activities can be quite a challenging task in the absence of ICT resources in schools.

The minimal number of school integrating ICT in administration in Kitui Central Sub-County is worrying compared to 38% of schools that have integrated ICT in Githunguri sub-county . This study therefore aims to understand and establish the factors that influence school principal's integration of ICT in secondary school administration in Kitui Central Sub-County in Kitui County.

### 1.3 Purpose of the study

To investigate factors influencing school principal's integration of ICT in administration of secondary school Kitui Central Sub-County, Kitui County, Kenya

### 1.4 Research Objectives

This study was guided by the following research objectives:

i. To determine the extent to which availability of ICT infrastructure influences ICT integration in administration of secondary schools in Kitui Central Sub-County.

ii. To determine the extent to which school principals' ICT literacy levels influence integration of ICT in administration of secondary schools in Kitui Central Sub-County.

iii. To determine the influence of principals' attitudes towards ICT on its integration in administration of secondary schools Kitui Central Sub-County

iv. To establish the extent to which availability of technical support influence principal's integration of ICT in administration of secondary schools in Kitui Central Sub-County.

### 1.5 Research Hypothesis

The research was guided by the following hypothesis.

i. ICT infrastructure influences principals' ICT integration in secondary school administration

ii. ICT literacy level does not influence principals' ICT integration in secondary school administration

iii. Principals attitude towards ICT principals' ICT integration in secondary school administration

iv. Availability of technical support influences principals' ICT integration in secondary school administration

### 1.6 Research Questions

This study was guided by the following research questions:

i. What impact does the availability of ICT infrastructure have on principal's integration of ICT in administration of secondary schools in Kitui Central Sub-County?

ii. To what extent do principals' ICT literacy levels influence principal's integration of ICT in administration of secondary schools in Kitui Central Sub-County?

iii. To what extent does principals' attitude towards use of ICT influence school principal's integration of ICT in administration of secondary schools in Kitui central Sub-County?

iv. To what extent does availability of technical support influence principals' integration of ICT in school administration in Kitui Central Sub- County?

### 1.7 Significance of the Study

The findings of this study may be used by KEMI to plan and strategize for more ICT training and follow–up programs for secondary school principals and their deputies. The findings may be used by the sub county education administrators to advise the government to consider more investments in ICT in entire education sector. The findings may also be useful to the Board of Management and Parents Teachers' Associations since it can help them allocate more funds to boost ICT infrastructure and source for knowledge. The study may also challenge the school administrators' attitude to embrace ICT integration in administration as it also makes them more knowledgeable on its importance. Future researchers may refer to the findings of this study to enrich their research.

### 1.8 Limitation of the study

Keith (2009) observed that any conditions that may place a restriction on the conclusions of the finding are referred to as limitations. Concealing of important information by the administrators on administrative processes for fear that they could be investigated was a challenge for the study. The researcher assured the administrators that the information was to be used for the purposes of the research

only. Again the researcher was limited by inability to manipulate or control respondents' attitudes as they respond to the questionnaire but requested them to be honest with their responses.

### 1.9 Delimitation of the study

The study confined itself to public secondary schools principals, deputy principals and Heads of Department only. The study excluded the Board of Management (B.O.M) and Parents Teachers' Association (P.T.A) as they are not always within reach thus the findings will not be generalized. It also focused on Kitui Central Sub-County hence the findings will not be assumed to apply in all sub-counties.

### 1.10 Basic Assumptions of the study

The researcher was guided by the following assumptions:

i. That the respondents would provide true, genuine and honest answers to the questionnaire.

ii. Information Communication Technology (ICT) integration in secondary school administration in Kitui Central sub-county is not at the same level.

iii. All the school administrators are aware of ICT importance.

### 1.11 Definition of key terms

**Administration** refers to the formalized system aiming at controlling, supervising, planning and decision making on various activities of an organization like a school.

**Attitudes** refers to a settled way of thinking or feeling about something, such as ICT use, typically one that is reflected in the principal's behaviour and can be either positive or negative.

**E-competence** - refers to digital literacy or ability to use electronic gadgets like computers, laptops, mobile phones and internet.

**Information Communication Technology (ICT)**- refers to any technological devices that allows for the creation, storage, and display of information either in hardcopy or softcopy.

**Influence** – the power to change or affect someone or something to cause change.

**Integration**- refers to the act of combining into integral whole, such as making ICT an integral part of administration.

**ICT integration in educational administration**- refers to the use of information communication technologies to aid school administration in secondary schools in Kitui central sub-county.

**Principal factors –** individual based variables that influence the adoption of ICT in secondary school administration examples are administrators' e-competence, ability to mobilize for ICT infrastructure,

**ICT infrastructure** - Global e-Schools and Communities Initiative Kenya (2009) defines ICT infrastructure as the computers, communication hardware, software, databases, people, structures and policies supporting the integration of ICT, such as electricity and local internet connection.

### 1.12 Organization of the study

The project is organized into exactly five chapters. First chapters encompasses c introduction, under which background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study, definition of significant key terms in the study and organization of the study are discussed**.** The second chapter consists of Literature Review which composts of Introduction, Availability of ICT facilities, Principals' Literacy level, Principals' attitude towards ICT and Availability of Technical Support as factors influencing principals' integration of ICT in secondary school administration. Chapter two also comprised of Theoretical Framework and the Conceptual Framework.

Chapter three contains Research Methodology under; introduction, research design, target population, sample size, and sampling procedure, research instruments validity of instruments, reliability of instruments, data collection procedure, data analysis and ethical considerations. Chapter four presents data

analysis, presentation and discussion. It covers; introduction, questionnaire return rate, demographic information of principals, demographic information of Deputy principals, demographic information of Heads of Department, Availability of ICT infrastructure, Principals' attitude and Availability of Technical Support and their influence on Principals' integration of ICT in secondary school administration in Kitui Central Sub-County. Chapter five presents summary, conclusions, recommendations and suggestions.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.1 Introduction

Review of related literature presents previous studies relevant to this project: factors influencing school principal's integration of ICT in secondary school administration in Kitui Central sub-county. It covers content on influence of availability of ICT infrastructure, impact of principals' ICT literacy levels, Principals' attitude towards ICT and availability of technical support and their influence in ICT integration in secondary school administration. It also covers summary of literature review, theoretical framework and conceptual frame-work.

## 2.2 Availability of ICT infrastructure and its integration in secondary school administration

Information Communication Technology (ICT) components as identified by Ayeni (2004) include; prints media, electronic media, telephone, telex, e-mail, fax and computers. School principals need the aforementioned ICT components to perform their role of student, staff, finance and physical resource management. Despite the fact that the role of the principal is significant in school improvement activities, little information exists which describe the specific role and responsibility of the principal as the technology leader (Davis, 2002:15). Schools operate with fixed budgets which cannot be manipulated at will. This reduces principals' ability to mobilise and avail ICT infrastructure.

Technology is changing at a high speed which renders many acquired technologies obsolete within a short time which makes it costly for schools to keep abreast with the changing technologies. Plomp, Anderson, Law & Quale, (2009) argued that accessibility to ICT infrastructure and resources in secondary schools is a propelling condition to the integration of ICT in school administration For instance availability of stable internet eases communication between principals and other school stakeholders by e-mail. Sufficient and reliable electricity creates assurance that typing exams will not fail at any time.

Pelgrum, (2001) studied the ten essential factors affecting ICT integration in schools in Belgium and found that out that four of them were associated with accessibility, inadequacy of computers, peripherals as well as insufficient internet access. Okwudishu, (2005) in a study done in Nigeria found out that unavailability of ICT infrastructure hinders their use of ICTs forcing administrators to resort to cybercafe's for internets access which is not only costly but also time consuming.

A majority of the schools surveyed nationally in Kenya by Computer for Schools group (2007) revealed that 59% of secondary schools had no internet connectivity. Other than internet services, electricity remains a challenge that limits integration as some schools face main power shortage. Principals are forced to buy and fuel generators which are expensive to sustain fuel every time there's

powers shortage. These logistics attempt to explain the low access to ICT facilities in public secondary schools in Kenya and low ICT integration for school administration purposes.

Computer for Schools, (2007) Kenya observed that only a handful of public secondary schools have enough ICT tools for general school administration. Few schools had computers and were used for teaching not administration. Unreliable internet and power supply demoralises principals' effort to file statistics returns to the employer. A school principal is a secretary to a number of ad-hock committees thus relies on out dated forms of communication to invite members for meetings. Another study exposed that the few schools with computers were most donation while the Parent Teachers' Associations and individual students had contributed only 16% and 7% respectively (Oloo, 2009).

Mwunda, (2014) highlighted some of the reasons explaining low ICT integration as lack or inadequate ICT infrastructure and technical support in Machakos. The findings of studies elsewhere may not be right assumptions for Kitui Central-Sub-County because of environmental diversity considering that Kitui is in a semi – arid zone. Again the other study on similar title was done in Machakos and was aiming at ICT integration in teaching and learning (Mbithe, 2016). This study therefore aimed to examine the actual role played by the same variables but in Kitui Central Sub- County.

## 2.3 Principal's ICT literacy level and its influence on ICT integration in secondary school administration

Hornby (2006) defined skill as special ability to do something well. Regarding ICT skill is used to mean the artfulness to creatively perform an activity by using a technology devices like computers, laptops, overhead projectors, CCTV cameras, cell phones. According to Dalton (1998), training is meant changing people's practical knowhow and interests. This training is done by the Ministry of Education, churches, colleges and other special groups like school sponsors with the aim to improve the pedagogical skills of the school administrators.

Increased demand for accountability by education financiers dictates that school principals adopt ICT to ease their work. For financial management, principals need to know how to use computer packages to draw balance sheets and other accounting documents that ease accountancy of money in and out. School fees payment ledger as well as store electronic ledgers assists monitoring and easy reference. During Annual General Meetings (AGM) principals who are computer literate find it easy to prepare annual report in computer slides and project for all parents to get first hand information. Projection creates room for stakeholders to ask for clarification where deem necessary. Monitoring and instruction as a role of the principal becomes easy when the principal has computer documents like lesson attendance check lists that help him to know missed lessons at a glance thus follow up.

Technology competency allows the administrators to turn into sufficiently efficient individuals in dealing school tasks Pricillar et al, ( 2008).It is therefore very necessary for him/ her to have the e-knowledge for him/her to encourage others to embrace ICT as the principal plays central role.

Schiller (2003) explored the level of the use of computers by principals and their perceived competencies in using various elements in Australia. The study findings showed that a 93.5 percent of the principals used computers in their homes and schools. Their main competence was in the basic packages, such as word processing, databases and sending and receiving emails. The study also revealed that it is from this ICT literacy among the principals that the principals were swayed into using ICT in the administration of secondary schools in Australia. Agba, (2003) in a study done in Tanzania exposed that inadequate skills was one of the challenges limiting integration of ICT resources in Makerere University. Mbatia,(2014) recommended that ICT literacy among principals plays a key role in influencing the utilization of ICT in their tasks. It is in this recommendation that this study is therefore necessary to ascertain the extent to which ICT literacy skills levels influence principals' integration of ICT in administration in Kitui-Central sub- county.

## 2.4 Principals' attitude towards ICT and ICT integration

Van Braak, Tondeur and Valcke (2008), argued that positive computer attitudes by teachers are expected to foster implementation of ICT in schools. Attitude is strong feeling for or against something. A principal's attitude may be linked to age, working experience, gender, level of education, exposure and environment one is working in. For those working in environments where every other sector, office and professions have ICT integrated, such principals through interaction are aware of the value attached to ICT in management and wouldn't wish to be the odd one out. Training offered to administrators during in-service programs, or privately attended gives principals confidence to handle the electronic gadgets.

Attitude doubles the effort to solicit or mobilize for ICT infrastructure. Attitude compels principals to even make decision of acquiring the ICT facilities like the computers, cell phones, overhead projectors, updated softwares and sustainable power supply. Being the central pillar of development in secondary school, the principals' attitude dictates integration or no integration of especially any technology with financial implication.

Literacy levels are interrelated to attitude as one with no skills will fear to try and fail while those with literacy skills have positive attitude as they know the worth of various packages. Exam results analysis and record keeping makes principals work very enjoyable as he doesn't need to go through a bundles of files to get a

certain student's performance but instead click a button and get all intended details. Student registration for national exams no longer gives such principals hard times to register and upload to the Kenya National Examination Council (KNEC) website. Principals who have not embraced ICT spent a lot of time in the Cyber cafes time that can be spent in school productively.

Teo (2012) added that in Singapore, teachers had positive attitude which compelled them to integrate ICT in their work. Van Braak, Tondeur, & Valcke, 2004) adds that the teachers' positive attitude could be due to competence in use of technology devices. Another study by (BECTA, 2004; Rozell & Gardner, 1999; Schoepp, 2005) echoed that e-knowledge influences ICT integration positively due to competence among users.

Several studies revealed that teacher's skills, perceptions, and attitudes influence adoption and use of ICT in schools, thus prompting this study to assess the extent of principal's ICT attitude on its integration in secondary school administration in Kitui Central Sub-County

**2.5 Availability of Technical support and Principals' ICT integration**

Reliable and available technical support is a significant factor influencing ICT integration as it increases system reliability thus enhancing ICT integration (Butler &Sellbom, 2002). Technology devices are prone to errors and can get

technical problems which can only be fixed by people who have trained either in hardware or software maintenance. Bingimlas (2009) observed that ICT problems act as a major barrier in effort to integrate ICT integration in administration. Technology is inventing new software and hardware at a very high rate thus technical advice is necessary on what to purchase that best suits a certain purpose.

If teachers are not assured and convinced that there is someone to come for their rescue when faced by technical or mechanical hiccup, they may avoid using the technologies. (Buabeng-Andoh, 2012). To increase sufficient technical support, there is need to for adequate technical maintenance which in turn ensures system minimal failure and increases reliability. (Becta, 2004). As concluded from many research studies, technical support is as important as technology acquisition; without it teachers will not be willing to integrate ICT in their classes (Tong & Trinidad, 2005; Yilmaz, 2011). Human beings avoid challenging situation and the same applies for ICT.

### 2.6 Summary of literature review

Across the world, globalization has elevated the importance of ICT. Globally, ICT has shown benefits like as portrayed by Maki (2008) in a study in Cyprus secondary schools that ICT Integration is essential for efficient undertaking of administered duties by a school principal.. School principal was the key determinant towards realization of desired outcomes and successes in both private and public schools hence is seen as the most critical by all stakeholders. However

there are multiple factors linked with it. Afshari et al in a study in Iran found out that the main factor that influences the principals' ICT integration in management was availability of ICT infrastructure. Kiptalam and Rodrigues (2010) observed that access to ICT facilities is a major challenge facing most African countries, with a ratio of one computer to 150 students against the ratio of 1:15 students in the developed countries. This clearly shows that the progress of ICT integration in Africa is low compared to other areas in the world. The same disparity is in Kitui necessitating for a study in Kitui Central sub county to affirm if availability of the same influences ICT integration among principals in administration.

ICT competence and skills have been said to play a role in its integration. Some countries in the world like UK, Singapore, China, and Australia have done a lot to improve the teacher e-competence. This has been achieved by designing programs that are geared towards improving the teachers skills in adapting and using ICT in instruction. (Jimmoyiannis & Komis, 2007). The school principal himself is a teacher and plays an oversight role of instructional supervision. ICT helps him to keep track of syllabus coverage and monitor lesson attendance. ICT competence is acquired through undergoing trainings. ICT literacy gives principals' confidence to acquire and use the technologies. Though some institutions like KEMI have trained principals and deputies on how to use ICT for effective management, not all have embraced it thus the need to pursue ICT literacy as a factor.

Pelgrum (1993) on a study on attitude of school principals' and teachers attitude towards computers pointed that the attitude of the school principal will determine if an innovation is going to succeed or fail. (Lau &Sim, 2008; Jimoyiannis & Komis, 2007) in a number of studies have shown that a significant number of teachers have portrayed diverse reaction to computers which include mild anxiety and extreme avoidance. This shows that they have a negative attitude towards implementation of ICT.

School Leaders who have positively embraced ICT often emphasize implementation of ICT in instruction. Such is a role model for his juniors at work place to follow suit. Technical support as well was portrayed as major factor affecting ICT integration. It increases system reliability which in turn enhances ICT integration (Butler &Sellbom, 2002). Bingimlas (2009) asserted that technical problems act as a major obstacle in the way of ICT integration. If teachers were not confident that whenever they face a hardware, software or infrastructure problem somebody will quickly be available to fix it without wasting the class or teacher time, they will tend to refrain from using the technology in the targeted manner (Buabeng-Andoh, 2012). New technologies may be challenging and hence kill the principals morale on their integration in administration duties. Technical support assures principals that whether from within or without, hiccups maybe fixed in time. As indicated by the Kitui Central

Sub- County education administrator (2016) that ICT has not fully been embraced, this study is therefore indispensable to unearth causal factors.

## 2.7 Theoretical framework

This study was guided by Technology Acceptance Theory (TAM) by Fred Davis in 1989. This model was deemed right for this study, because it explicates the manner in which users accepts and embrace new technology. Users of new technology are guided by how useful they find technology to ease their work and how easy it is to use it. This model involves individual characteristics influencing the integration of ICT. The researcher considered the principals as chief determinants towards ICT integration in schools. Principals integrated ICT in administration depending on how they perceived the use of ICT as useful or easy to use in administrative tasks. Principal's attitude, ICT literacy levels were individual factors that influenced ICT integration. However, this theory was limited by external factors like availability of finances, government policy, and availability of network and power supply.

## 2.8 Conceptual framework

Conceptual Framework was described by Young, (2009) as a diagrammatical representation showing the inter-releratedness between dependent and independent variables.

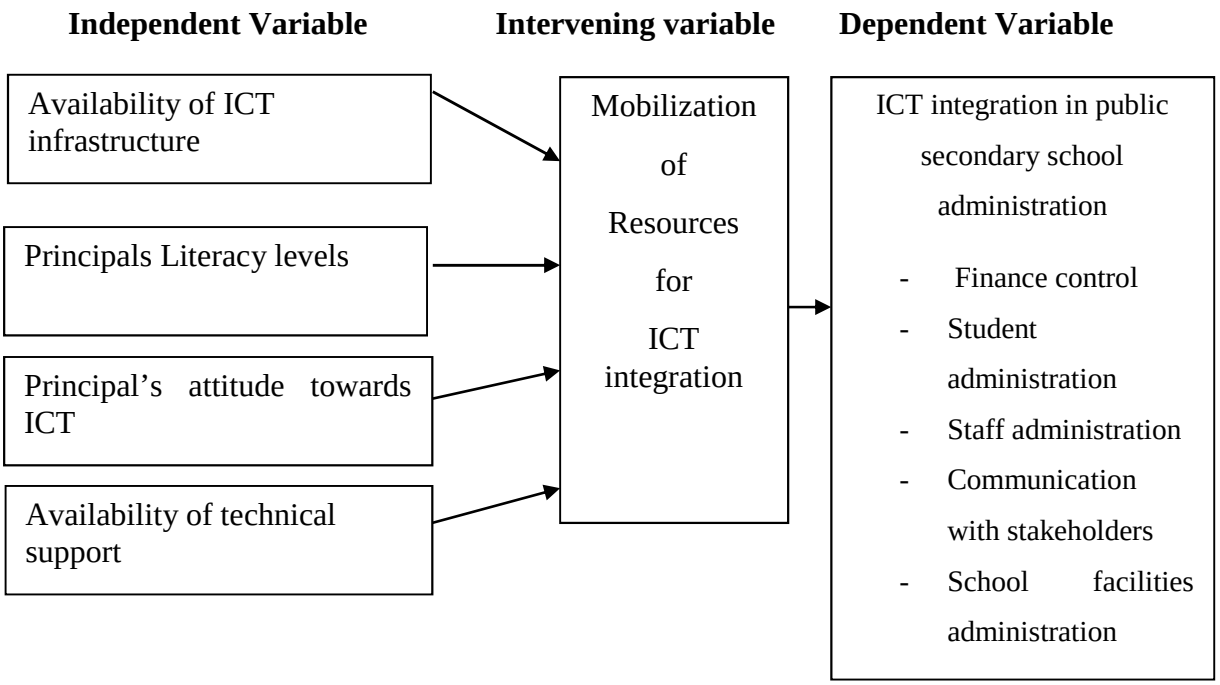


**Figure 2.1 conceptual framework on principals' characteristics influencing integration of ICT into school administration**

Availability of ICT infrastructure like computers, laptops, mobile phones, projectors, photocopiers encourage principals to use them. Related infrastructure like power supply and internet connections are equally important. Without power, all the electronic gadgets lay dormant. Previous studies have exposed Principals' literacy levels has a variable influencing the same. Principals who have been trained on how to use ICT know the value attached to ICT integration and are confident to use the technology devices. Attitude towards ICT propels principals to budget and acquire the intended infrastructure. A principal who likes ICT encourages other members of staff to use it and thus work gets done effectively.

Availability of technical support is another important factor. ICT devices face technical and mechanical breakdown at times and discouraging if no specialist to fix emerging hiccups. Principals may be forced to hire or contract outside experts to handle problems with the computers which at times takes long thus slowing performance. The level of ICT integration in administration is determined by these independent variables among others.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This section presented methodology to be used in the study. It was presented under; research design, target population, sample size and sampling procedure, research instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis techniques and ethical considerations.

## 3.2 Research design

Orodho (2009) defined research design as the scheme, outline or plan that is used to generate answers to research problems. This study used descriptive survey design which was considered appropriate because it facilitates collection of data that describes specific characteristics of phenomena in order to determine population status compared to one or more variable. This design allowed the researcher to gather information and report the way things were without manipulating. Descriptive design was also deemed appropriate for this study as it sought to find answers to the research problem.

## 3.3 Target population

The study's target population was administrators of 35 public secondary schools; namely 35 principals, 35 deputies and the Sub-County Director of Education

Officer in Kitui Central Sub-County. This study only concentrated on public secondary schools in the Sub-County. Total target population is 71 (Sub-County Education Officer 2016).

### 3.4 Sample size and sampling procedure

According to Orodho and Kombo (2002), sampling is the process of identifying a number of individuals or objects from a population with representative of the characteristics found in the larger group. The sample size for this study was determined using the Krejcie and Morgan (1970) because the population was finite.

**Table 3.1 Target population and sample size**

| | **Population** | **Sample size** | **Sample percentage (%)** |
|---|---|---|---|
| Principals | 35 | 32 | 91 |
| Deputies | 35 | 32 | 91 |
| Sub-County Administrator | 1 | 1 | 100 |
| Total respondents | 71 | 65 | 92 |

### 3.5 Research instruments

The main research instrument used for this study were questionnaire. Mugenda and Mugenda (2003) observed that questionnaires allow a researcher to measure for or against a particular view point. The questionnaires for all the respondents

will be divided into 5 parts; Part A comprised the respondents' demographic information. Part B Availability of ICT infrastructure and its influence on principals integration of ICT in administration, Part C principals' ICT literacy skills levels , Part D principal's attitude towards ICT and Part E availability of technical support and their influence on principal's ICT integration in secondary school administration. .

### 3.6 Validity of instruments

According to Best and Khan (2009) an instrument is said to be valid when it measurers what is intended to measure. To achieve content validity of the research instrument the researcher pretested the instrument in two schools which were outside the Sub-County under study. The findings of the pilot were not included in the final study as the study was to test clarity of the items. . After scrutiny, through close consultation and expert judgment of the supervisors the researcher amended the instruments to ensure.

### 3.7 Reliability of instruments

According to Mugenda and Mugenda (2009), reliability is the measure of degree to which research instruments give consistent results after repeated trials. Reliability measures the stability of research instruments across two or more attempts. In this study reliability of the questionnaire were tested using test and re-test method. The researcher piloted the questionnaire by giving some draft

questionnaires to 11 principals and 11 deputy principals answer the questions at an interval of two weeks before the actual data collection exercise. The feedback manually scored from the two testing periods were correlated and analyzed using the Pearsons correlation coefficient to determine reliability of the instrument. The reliability coefficient was found to be 0.87. Gay (1992) affirms that a research instrument with a Correlation Coefficient between 0.7 and 1.0 as reliable enough for data collected. Therefore, the researcher confirmed that the instruments were reliable enough to be used in this study.

$$r = \frac{\sum xy - (\sum x)(\sum y)/N}{\sqrt{[\sum X^2 - (\sum X)^2/N][\sum Y^2 - (Y)^2/N]}}$$

Where: r = Pearson's correlation coefficient

x = values in first set of data, y = values in second set of data, n = total number of values

(Source: Pearson's Correlation Coefficient @ Tutor Vista.com.htm)

### 3.8 Data collection procedures

The researcher secured an introductory letter from University of Nairobi for identity and obtained a research permit from National Commission for Science, Technology and Innovations (NACOSTI) in order to collect data in public secondary schools in Kitui Central Sub-County. The County Director of Education was contacted and informed about the study which was to take place in the region. The researcher contacted the principals of sampled schools and booked

appointments. A copy of the permit was presented to the respondents. The researcher gave the respondents questionnaires to fill and were later collected for analysis.

### 3.9 Data analysis techniques

Collected data was coded and entered in the computer for analysis. After coding, classification and tabulation was done into meaningful categories using descriptive and inferential statistics. Frequency distributions and measures of central tendency i.e. mean and percentages of the analyzed data were computed. Chi-square and T-test was used for hypothesis testing with the help of the Statistical Package of Social Sciences (SPSS). The level of significance was 0.05 and therefore quantify acceptance of the hypothesis (Cohen, Marion &Morrison, 2007). According to Elifson (1990), chi-square ($x2$) test of independence was used to evaluate the relationship between variables. Tables, pie charts and bar graphs were used to present qualitative data. Qualitative data was transcribed then analyzed using content analysis which comprises of categorizing data into common themes then presented as narratives.

### 3.10 Ethical considerations

The researcher obtained a letter of introduction from University of Nairobi, obtained a research permit from National Commission of Science, Technology and Innovation (NACOSTI) and had a courtesy call to the Sub-County Director of

Education of Kitui Central Sub-County. Principals of schools were contacted to give consent for the study to be carried out. Confidentiality, anonymity was maintained and no respondent was exposed to physical or emotional or psychological injury. Respondents were free to participate or to leave at any point of the study.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION

## 4.1 Introduction

This chapter deals with the analysis, presentation and interpretation of the data and discussions based on the objectives. The study sought to investigate factors influencing school principal's integration of ICT in administration of secondary school Kitui Central Sub-County, Kitui County, Kenya. The chapter begins with questionnaire return rate, demographic information of head teachers, teachers and pupils, followed by presentation and discussions of research findings.

## 4.2 Response rate

The respondents involved were the Principals, Deputy Principals and Sub-County Director of Education. They returned the questionnaires as tabulated in Table 4.1.

**Table 4.1: Instrument return rate**

| **Respondents** | **Sampled size** | **No. collected** | **Return rate (%** |
|---|---|---|---|
| Principals and deputy principals | 32 | 28 | 87.5 |
| Sub-County director of education | 1 | 1 | 100.0 |

Table 4.1 showed that the average questionnaire return rate was well above 80% which according to Mugenda and Mugenda (2003) is an acceptable proportion and can be termed adequate for analysis.

### 4.3 Demographic information

This refers to the personal characteristics of the respondents. The principals, deputy principals and the sub-county administrator were required to indicate their gender, age, length of stay and professional qualifications. The purpose of this information was to establish if these respondents were professionally trained and experienced enough to understand and respond to the questionnaire items efficiently.

#### 4.3.1 Demographic data of principals and deputy principals

The demographic data of principals and deputy principals was based on their gender, age, highest academic qualification, designation, professional experience and type of school. Respondents were asked to indicate their gender. Responses are summarized and presented in Figure 4.1.

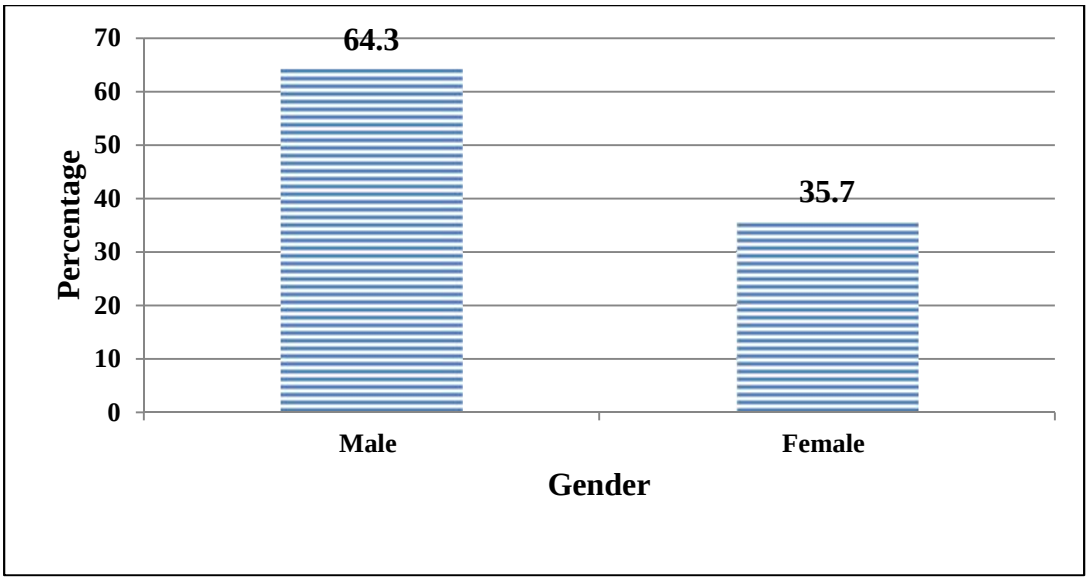


**Figure 4.1: Gender of principals and deputy principals**

Findings in Figure 4.1 show that 64.3% of the principals and deputies were male. The sub-county director of education was also a male. Compared to the number of girls schools, this representation was okay due to gender ratio. The same ratio is presented on the percentage ICT integration in the schools respectively. The study showed that levels of ICT integration were almost equal. The study sought to establish the age principals and deputy principals. Responses are summarized and presented in Figure 4.2.

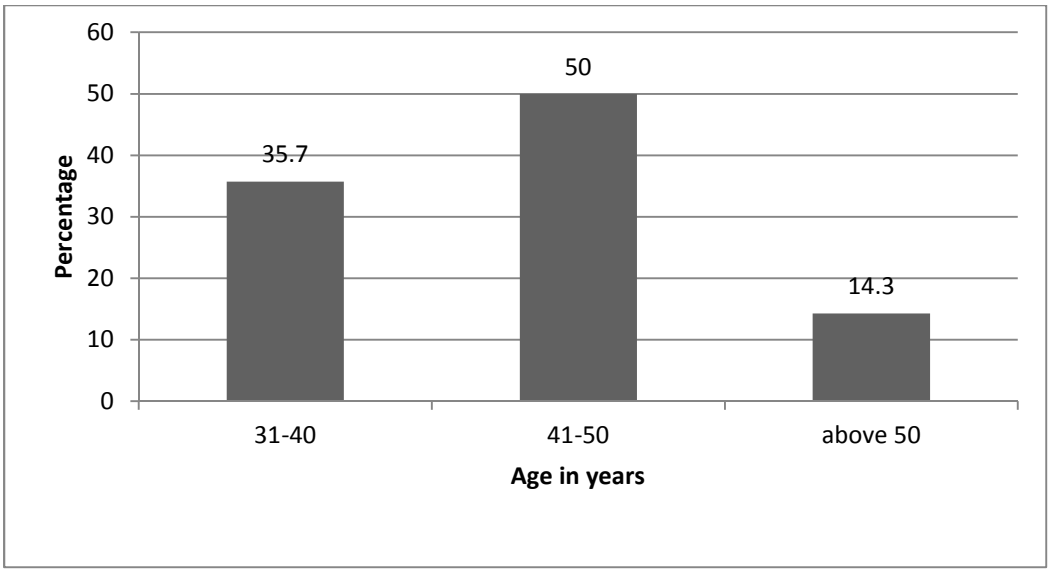


**Figure 4.2: Age of principals and deputy principals**

Findings in Figure 4.2 show that 50% of the principals and deputy principals were aged between 41-50 years and the sub county director of education was aged over 50 years. This shows that the respondents were relatively old to understand the factors influencing school principal's integration of ICT in administration of secondary school. The age brackets presented was positive as opposed to a case where they are old. Old administrators tend to shy away from embracing technology as stated by Mederios (2012). This study established that the school principals involved in the study were at the right age to have the interest and passion in ICT integration in school administration. Such encourage

The principals and deputy principals were asked to indicate their level of education. Responses are summarized and presented in Figure 4.3.

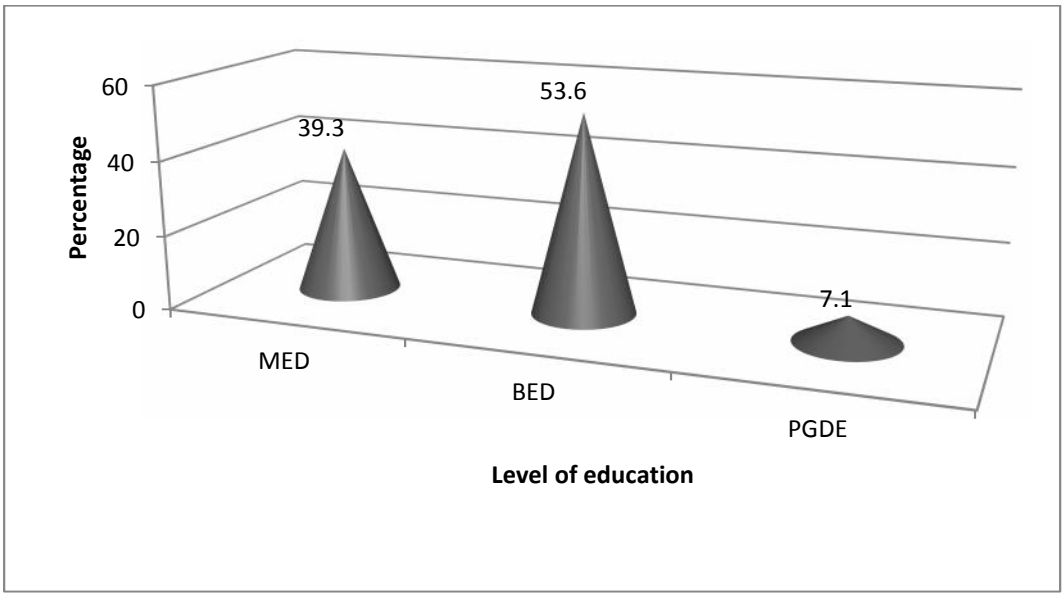


**Figure 4.3: Principals and deputy principals' level of education**

Findings in Figure 4.3 show that 53.6% of the principals and deputy principals had attained bachelors' degree in education and the sub county director of education had also attained a bachelors' degree in education. This implies that they are well informed of administrative expectations on effective performance. all principals had done education course which meant them relevant and aware of what education administration appertains.

Respondents were asked to indicate the number of years they have been in the teaching profession. Responses are summarized and presented in Figure 4.4.

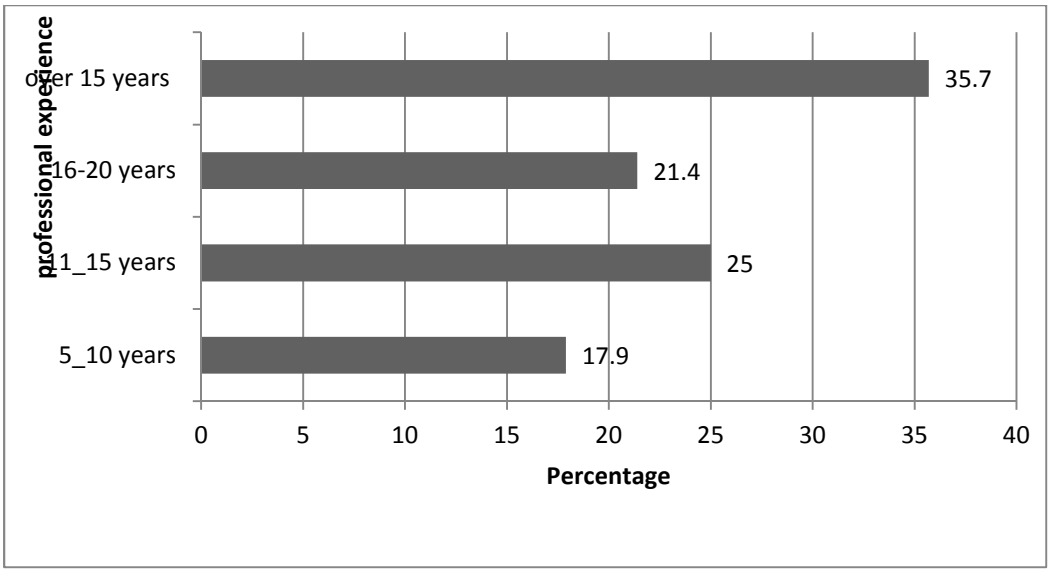


**Figure 4.4: Professional experience**

Findings in Figure 4.4 show that 35.7% of the principals and deputy principals have been in the teaching profession for over 15 years and the sub county director of education indicated that he had served in the county for between 5-10 years. This shows that the principals and deputy principals were in a position to understand the factors influencing school principal's integration of ICT in administration of secondary school.as administrators, the serving experience enabled them to understand well challenges hindering ICT integration.

Respondents were also asked to indicate their designation. Responses are summarized and presented in Figure 4.5.

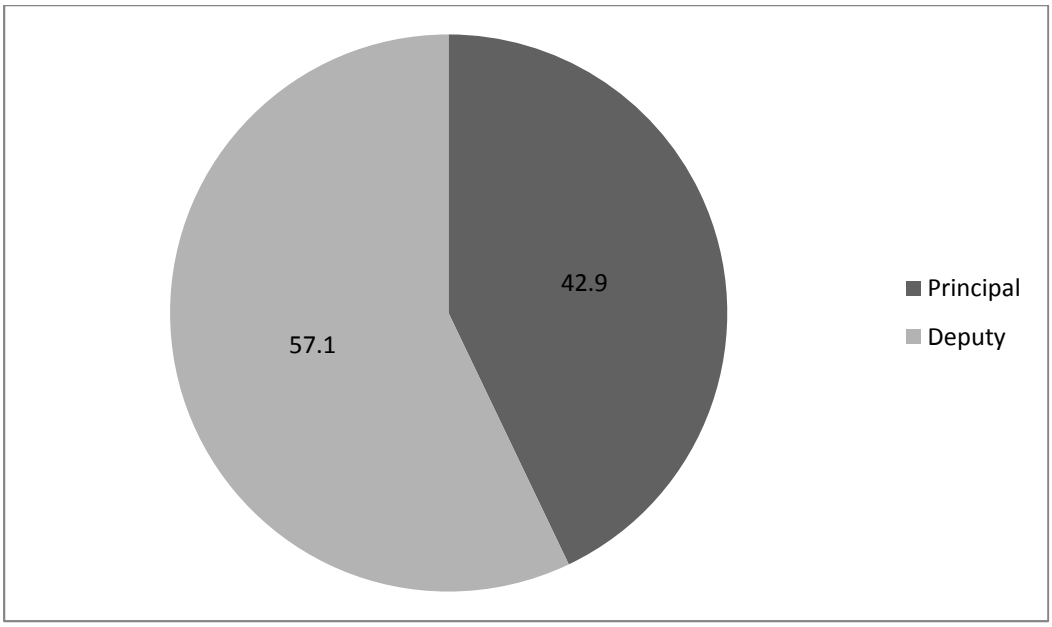


**Figure 4.5: Designation**

Findings in Figure 4.5 show that the majority of the respondents (f) 57.1% were deputy principals. This was due to the time the data was collected when most of the principals were busy preparing for KCSE examinations which were to kick up the following Monday. Again majority of the deputies were relatively young and interested with in ICT matters. This is assumed as why they embraced the questionnaires, filled and returned them. Respondents were also asked to indicate their school type. Responses are summarized and presented in Figure 4.6.

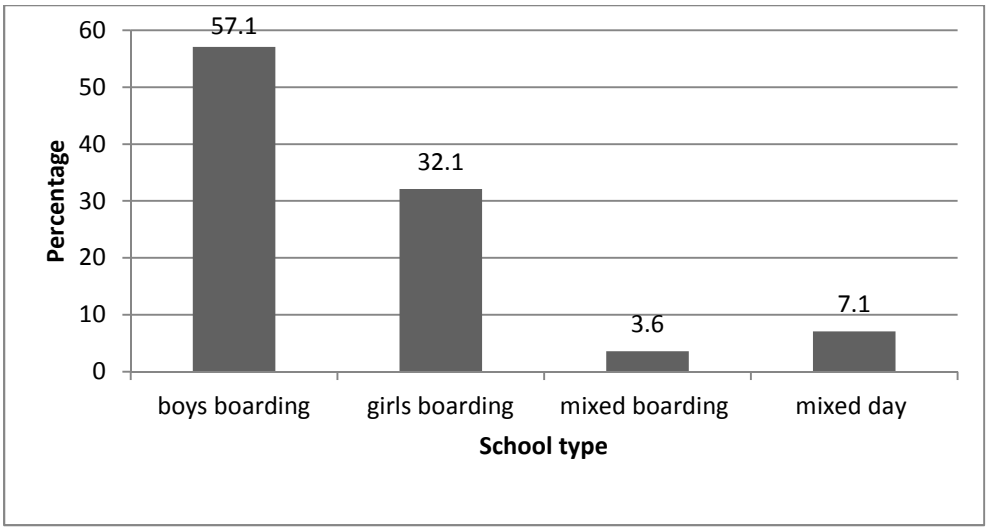


**Figure 4.6: School type**

Findings in Figure 4.6 show that 57.1% of the respondents indicated that their schools were boys boarding. This shows that majority of secondary schools in Kitui Central Sub-County are boys' boarding school.

### 4.4 Availability of ICT infrastructure

The first objective of the study was to establish the extent to which availability of ICT infrastructure influences ICT integration. Respondents were asked to indicate whether the listed facilities were available. Responses are summarized and presented in Table 4.2

**Table 4.2: Availability of ICT infrastructure**

| Technology | Availability | | | | Used in management | | | |
|---|---|---|---|---|---|---|---|---|
| | Yes | | No | | Yes | | No | |
| | F | % | F | % | F | % | F | % |
| Computers | 28 | 100 | | | 23 | 82.1 | 5 | 17.9 |
| Laptops | 20 | 71.4 | 8 | 28.6 | 16 | 57.1 | 12 | 42.9 |
| Mobile phones | 23 | 82.1 | 5 | 17.9 | 18 | 64.3 | 10 | 35.7 |
| CCTV Cameras | | | 28 | 100 | | | 28 | 100 |
| Internet connections | 8 | 28.6 | 20 | 71.4 | 8 | 28.6 | 20 | 71.4 |
| Un interrupted Power Supplies | 10 | 35.7 | 18 | 64.3 | 10 | 35.7 | 18 | 64.3 |
| Overhead projectors | 11 | 39.3 | 17 | 60.7 | 10 | 35.7 | 18 | 64.3 |

Findings in Table 4.2 show that all secondary schools in the study area have computers. Even though most schools had a computer in principals office, not all principals used this computers in person as some preferred delegation of duties like setting of exams, financial entries and audit, students management to various department heads. However, availability of these computers encouraged principals to have administrative work done more effectively even if its through

delegation. While all schools had a computer or computers, only 71.4% had laptops that were used in school management. In some schools, laptops were private but all the same, the few were used for administrative work. Mobile phones were available at 82 percent and more than a half of the administrators used them for administrative duties like communication with stakeholders. Again most of the mobile phone where private property through secretaries though in most of the schools all the secretaries had a school phone. CCTV cameras and overhead projectors were the least amongst all the ICT tools in question. This was associated to the cost of purchase.

However, there was poor internet connection as indicated by 71 percent and 64 percent interrupted power supplies respectively. Internet connection is vital for management tasks like communication. Power shortages on the other hand compelled the principals to spend more of school finances to sustain petrol generators. This discouraged many principals also because it encourages data loses. These two were the main inhibitors of full exploitation and integration of available ICT infrastructures. The finding concurs with Okwudishu, (2005) that unavailability of some ICT components in schools limits use of ICTs forcing administrators to resort to cyber café's for internets access which is not only costly but also time consuming.

The researcher sought to assess how principals use ICT and its integration in school administration. Responses are summarized and presented in Table 4.3.

**Table 4.3: Principals use of ICT**

| Statement | Very large extent % | Large extent % | Fairly large % | Little extent% | Not at all% |
|---|---|---|---|---|---|
| Maintaining students records | 42.9 | 35.7 | 14.3 | 7.1 | |
| Maintenance of staff records | 17.9 | 67.9 | 7.1 | 7.1 | |
| Monitoring of class attendance | 7.1 | 25.0 | 32.1 | 14.3 | 21.4 |
| Maintenance of school resources records | 17.9 | 28.6 | 32.1 | 21.4 | |
| Internal finance audit | 17.9 | 46.4 | 14.3 | 21.4 | |
| Communication with school stakeholders | 42.9 | 28.6 | 7.1 | 21.4 | |

Findings in Table 4.3 show that 67.9% of the respondents said that they use ICT for maintenance of staff records. Staff records include individual details of staff, disciplinary records, promotions among others. This shows that secondary school

Kitui Central Sub-County use ICT in carrying out various tasks in the school administration. This concurs with Maki (2008) that secondary schools ICT Integration is essential for personnel administration, student's administration, resource administration and financial administration.

**Table 4.4: Relationship between availability of ICT facilities and integration of ICT**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.297 | .360 | | -.825 | .418 |
| | Laptops | .419 | .120 | .541 | 3.486 | .002 |
| | mobile phones | .126 | .151 | .138 | .836 | .412 |
| | internet connections | .149 | .170 | .212 | .876 | .390 |
| | Uninterrupted power supplies | .342 | .108 | .489 | 3.179 | .004 |
| | overhead projectors | .014 | .150 | .019 | .090 | .929 |

a. Dependent Variable: Principals literacy level

The results in Table 4.4 indicated that availability of laptops and uninterrupted power supplies were significant at ($p<0.05$) as it effects ICT integration in public secondary schools. Generally availability of computers, laptops, mobile phone

and their usage is dependent on uninterrupted power supplies for integration. Without reliable source of power, many ICT tools were found to lie in the office without being used. Lack of internet deterred use of laptops, computers and mobile phones for communication. Majorly ICT was integrated in maintenance of student records, communication with stakeholders, staff management and finance management. The underlying explanation behind this is desire for efficiency in the four mentioned administrative tasks. ICT eases management hassle therefore availability of all the ICT infrastructure impacts positively on integration. These findings conform to the findings of Afshari Bakar, Samah and Foo (2010) who found that the main factor that influenced the principal's adoption of ICT in the administration of schools was the availability of ICT infrastructure .

### 4.5 Principals ICT literacy levels

The second objective of the study was to determine the extent to which school principals' ICT literacy levels influenced integration of ICT. Respondents were asked whether principals' ICT literacy level influences ICT integration in secondary school administration. Responses are summarized and presented in Table 4.5 below.

**Table 4.5: Influence of principals' ICT literacy level on ICT integration by secondary school principals administration.**

| ICT literacy influence ICT integration | Frequency | Percentage |
|---|---|---|
| Yes | 24 | 85.7 |
| No | 4 | 14.3 |
| **Total** | **28** | **100** |

Findings in Table 4.5 show that 85.7% of the respondents said that principals' ICT literacy level influences ICT integration in secondary school administration and this concurs with Mbatia, (2014) that ICT literacy among principals plays a key role in influencing the utilization of ICT in their tasks. Respondents were further asked to indicate their proficiency in ICT packages. Responses are summarized and presented in Table 4.5

**Table 4.6: Principals proficiency in ICT packages**

| ICTs | Very little % | Little % | High % | Very high % |
|---|---|---|---|---|
| Microsoft word | 7% | 35% | 57% | |
| Microsoft excel | 28% | 50% | 21% | |
| Microsoft Power Point | 14% | 32% | 46% | 7% |
| Internet and email | 14% | 7% | 32% | 46% |
| Quick books | 60% | 17% | 21% | |
| Teleconferencing | 78% | 14% | 7% | |

Findings in Table 4.6 showed that 57.% of the respondents said that they have high literacy level in Microsoft word. This shows that the principals were well trained in basic computer packages and the finding concurs with Schiller (2003) that the principals' main competence is in the basic packages, such as word processing, databases and sending and receiving emails.

Training is very significant in intensifying the know-how of principals on new phenomenon's. ICT proficiency is assumed to give users confidence to put the tools in to use. Most of the principals had attended workshops and seminars on ICT thus why they were able to integrate it in administration. Over 70 percent of the respondents did not know how to use quick books and teleconferencing thus they avoided using them in their administrative roles. Principals' ability to use the simple computer packages influenced levels of principals' integration of ICT

in administrative task areas. The implication of these findings is that ICT literacy skills and competency among the principals has a profound influence on the principals' integration of ICT in administration tasks in public secondary schools in Kitui Central Sub-County.

**Table 4.7: Relationship between principals' ICT literacy levels and integration of ICT**

| Coefficients | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.222 | .244 | | 9.100 | .000 |
| | Word | -.125 | .109 | -.277 | -1.149 | .264 |
| | Excel | .003 | .105 | .005 | .025 | .980 |
| | power point | -.236 | .077 | -.554 | -3.064 | .006 |
| | internet and email | .001 | .075 | .003 | .016 | .987 |
| | quick books | -.075 | .109 | -.174 | -.684 | .502 |
| | teleconferencing | .011 | .121 | .018 | .087 | .931 |
| a. Dependent Variable: Principals literacy level | | | | | | |

The results in Table 4.7 indicate that principals' ICT literacy level had no significant effect at ($p>0.05$) on ICT integration in public secondary schools. This may be explained by fact that principals may delegate administrative roles like student management to dean of students and only be briefed or given report of progress. The school secretary can also be given duties to communicate to stakeholders using emails so the principal will have work done even when he is not ICT literate.

### 4.6 Influence of principals attitude towards ICT integration

The third objective of the study was to establish the influence of principals' attitudes towards ICT on its integration. Respondents were asked to indicate their level of agreement on the listed statements on of principals' attitudes towards ICT on its integration. Responses are summarized and presented in Table 4.8 below.

Key: Strongly Agree (1), Agree (2), Not Sure (3), Disagree (4), Strongly Disagree (5).

**Table 4.8: Principals' attitude towards ICT integration**

| Statement | SA% | A% | N% | D% | SD% |
|---|---|---|---|---|---|
| ICT has made instructional supervision more effective | 53.6 | 32.1 | 7.1 | 7.1 | |
| Text messaging helps to communicate with school stakeholders effective | 57.1 | 28.6 | 14.3 | | |
| e-mail has eased communication with all stakeholders | 46.4 | 25.0 | 14.3 | 14.3 | |
| ICT has enhanced receipting of school fees which has helps internal audit | 46.4 | 7.1 | 17.9 | 21.4 | 7.1 |
| Preparation of Trial Balance using ICT has become easier | 39.3 | 21.4 | 17.9 | 21.4 | |
| Setting of exams is not a difficult task any more with the use of ICT | 25.0 | 57.1 | 14.3 | 3.6 | |
| Use of ICT in Exam results analysis is time saving and more accurate | 85.7 | 7.1 | 7.1 | | |
| The school sources for technical advice from IT experts in the society | 14.3 | 32.1 | 39.3 | 14.3 | |
| Spreadsheet help to prepare store inventories for easy monitoring | 17.9 | 35.7 | 14.3 | 32.1 | |
| Use of ICT costs the school unnecessary costs | 21.4 | 10.7 | 42.9 | 25.0 | |
| e-mails are a cheaper mode of communication | 32.1 | 28.6 | 10.7 | 28.6 | |
| Text messaging is not official | 14.3 | 17.9 | 42.9 | | 25.0 |
| Use of ICT in setting examination is prone to errors and abuse | 14.3 | 21.4 | | 21.4 | 42.9 |
| My school bursar prefers the traditional means of generating receipts | 7.1 | 42.9 | | 28.6 | 21.4 |
| Database/spread sheets are boring to operate | 7.1 | 25.0 | 3.6 | 25.0 | 39.3 |

Findings in Table 4.8 show that 85.7% of the respondents strongly agreed that use of ICT in exam results analysis is time saving and more accurate. Instructional supervision scored the second as explained by principals that curriculum implementation supervision in class through monitoring of class attendance had been made easy. Communication with stake holders by use of text messaging portrayed positive attitude as it was more preferred than the traditional out-dated methods of communication. 46 percent of the respondents agreed that email eased communication and was more official than text messaging. Preparation of trial balance and setting of exams ranged around same levels of 50 percent.

However, the principals were negative towards database and spread sheet which seemed a challenge to many. Again 32 percent felt that text messaging was not official which indicates that their attitude was negative on the same. 64% expressed that ICT infrastructure was too expensive for schools to acquire which portrays excuse not to acquire them as there are other ways of sourcing for ICT infrastructure through requesting well wishers.

**Table 4.9: Relationship between attitude and integration of ICT**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.082 | .094 | | 11.540 | .000 |
| | communication with stakeholders | .562 | .064 | 1.170 | 8.783 | .000 |
| | enhanced receipting | -.122 | .028 | -.494 | -4.387 | .000 |
| | exam results analysis | -.440 | .075 | -.702 | -5.843 | .000 |

**a. Dependent Variable: Principals literacy level**

The results in Table 4.9 indicate that principals' attitudes towards ICT on its integration had significant at ($p<0.05$) effect on ICT integration in public secondary schools. In other words, principals with positive attitudes towards the use of ICT were motivated to utilize ICT in their administrative task areas like instructional supervision, communication, finance management and exam analysis. . On the other hand, principals with negative attitudes seemed to agree that ICT text messaging is not official, its prone to errors and its expensive for schools to install and sustain. With such notion, some principals will while others will not integrated ICT in administration. This concurs with Van Braak, Tondeur and Valcke (2008) that positive computer attitudes by teachers are expected to foster implementation of ICT in schools.

### 4.7 Availability of technical support and ICT integration

The fourth objective of the study was to establish the extent to which availability of technical support influence principal's integration of ICT in administration. Technical support provides solution to computers and other ICT tools when they fail thus ensure continuous usage of the same. Respondents were asked whether the schools have trained ICT experts who fix ICT gadgets. Responses are summarized and presented in Table 4.10 below.

**Table 4.10: Availability of trained ICT expert**

| Responses | Frequency | Percentage |
|---|---|---|
| Yes | 12 | 42.9 |
| No | 16 | 57.1 |
| **Total** | **28** | **100** |

Findings in Table 4.10 show that 57.1% of the respondents indicated that their school do not have trained ICT experts who fixes ICT gadgets. This shows that secondary school in Kitui Central Sub-County have not employed a permanent ICT technician to fix ICT gadgets. Respondents indicated that they hire technical experts from outside when need arises. However, a fair number of the schools had employed technicians.

The implication of these findings is that principals assumed that the computer teachers I the school could act in the capacity of technicians. Another reason was that it was expensive and unnecessary to engage a technician on permanent terms for few or no breakdowns throughout the month. However those that had the technicians expressed the roles of a technician as immeasurable starting with repair and maintenance, training of staff, advising administration during purchase of ICT gadgets among others. The finding is in agreement with (Butler and Sellbom, (2002) that reliable and available technical support is a major factor affecting ICT integration as it increases system reliability which in turn increases ICT integration. Respondents were further asked to indicate the role of school ICT expert. Responses are summarized and presented in Table 4.11 below.

**Table 4.11: Role of school ICT expert**

| Role of school ICT expert | Yes | | No | |
|---|---|---|---|---|
| | **F** | **%** | **F** | **%** |
| Repair and Maintenance of ICT equipment in school | 15 | 53.6 | 13 | 46.4 |
| Assisting the user | 5 | 17.9 | 23 | 82.1 |
| Training other members of staff | 8 | 28.6 | 20 | 71.4 |
| Help in formulation of school ICT policy | 3 | 10.7 | 25 | 89.3 |
| Advises the principal during purchase of ICT equipment | 12 | 42.9 | 16 | 57.1 |

Findings in Table 4.11 show that 53.6% of the respondents indicated that the major role of an ICT expert is to repair and maintain ICT equipment in school. This shows that school ICT expert is very important as he helps to save teaching/working time in case of break-down of any ICT equipment. This finding is in agreement with Buabeng- Andoh, (2012) that if teachers are not confident that whenever they face a hardware, software or infrastructure problem somebody will quickly be available to fix it without wasting the class or teacher time, they will tend to refrain from using the technology in the targeted manner. The researchers also sought to establish the challenges facing ICT integration. Responses are summarized and presented in Table 4.12 below.

**Table 4.12: Challenges facing ICT integration**

| Challenges | Frequency | Percentage |
|---|---|---|
| Inadequate finances to buy ICT equipment | 28 | 100 |
| Lack of ICT skills | 25 | 89.3 |
| Negative staff attitude on use of ICT | 15 | 53.6 |
| High cost of repair | 10 | 35.7 |
| Lack of technical experts | 7 | 25.0 |
| Poor internet connectivity | 11 | 39.3 |
| Unreliable power supply | 16 | 57.1 |

Findings in Table 4.12 show that inadequate finances to buy ICT equipment is a great challenge facing ICT integration as well as lack of ICT skills as indicated by 89.3% of the respondents. Most of the ICT tools are expensive to acquire and sustain and this was portrayed as the main reason why most of the principals avoid acquisition. Internet facilities as well are costly together with power charges. Inability to acquire the ICT tools means unavailability of the same and thus no integration in administration. Lack ICT literacy skills among principals deprives the confidence which in turn influences attitude towards ICT integration. Even though Principals have been trained by KEMI and other non-governmental bodies but there is lack of follow up programmes to keep them on toes to use what they were taught. Lack of technical experts in schools may affect integration to a minimal extent because the principals have the mandate to hire services from outside.

**Table 4.13: Relationship between availability of trained ICT expert and integration of ICT.**

The results in Table 4.13 indicate that availability of technical support had no significant effect at ($p>0.05$) on ICT integration in public secondary schools. This is explained by the fact that many principals will contract technicians from outside to fix their problems. This was seen as cheaper and affordable because it is once in a while that the tools require fixing and servicing. Other principals expected computer teachers to play the role of technicians to save the school extra expenditure.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter presents a summary of the major findings of the study and giving conclusions which attempt to give answers to specific questions that were investigated. It also presents recommendations for possible actions and suggestions for future research.

## 5.2 Summary of the study

The purpose of the study was to investigate the factors influencing principals' integration of information communication technology in public secondary schools in Kitui Central sub County, Kenya. It was guided by the following objectives;

i. To determine the extent to which availability of ICT infrastructure influences ICT integration in administration of secondary schools in Kitui Central Sub-County.

ii. To determine the extent to which school principals' ICT literacy levels influence integration of ICT in administration of secondary schools in Kitui Central Sub-County.

iii. To determine the influence of principals' attitudes towards ICT on its integration in administration of secondary schools Kitui Central Sub-County.

iv. To establish the extent to which availability of technical support influence principal's integration of ICT in administration of secondary schools in Kitui Central Sub-County.

The review of the literature related to the study was conducted from global, regional and local perspectives. The literature review indicated that the ICT literacy of principals, the principals' attitude towards the use of ICT, the availability of ICT infrastructure and technical support had a significant influence on the principals' integration of ICT in administrative endeavors. The study was guided by the Technology Acceptance Model (TAM), which centers on the manner in which new technology, such as ICT, is adopted by users through the perceived usefulness and the perceived ease of use elements.

The study employed the descriptive research design which was deemed appropriate for the study because the researcher needed to explore the data collected without any alterations. The target population of the study comprised of 32 principals and 32 deputy principals randomly selected within the Sub-County. the Sub- County education administrator was the other respondent for the study.
The study utilized questionnaires as the sole data collection instruments. The items on the questionnaires were examined by supervisors, for content validity.
A pilot study to pretest instruments reliability of the questionnaires was done and r = 0.7. Response rate was 87% . Data analysis was done through the usage if both

qualitative and quantitative techniques. Frequencies and percentages of the data analysis were done through the SPSS. Data was presented using tables, bar and pie graphs.

### 5.3 Conclusions

Availability of ICT infrastructure influences ICT integration in secondary schools. Although the schools were well equipped with computers, laptops and mobile phones, they faced a challenge of power supplies and poor internet connectivity which makes the teachers and school head to waste quality time in cyber café. Power blackout also leads to loss of data especially when using desktop computers. Such challenges kills morale of principals to use ICT in management. Principals' ICT literacy level influences ICT integration in secondary school administration .Computer literate principal are aware of how much it eases their work in administration. With the increased demand for transparency and accountability, ICT has made it possible for principals to manage finances prudently. Communication with stakeholders has been made easy by use of internet. Setting, marking and analysis of exams have been made a lighter job.

The attitudes of the principals towards the use of ICT have a significant impact on the principals' integration of ICT in administrative undertakings. Attitude is the desire to use or not to use something. Principals with a positive attitude towards the use of ICT endeavor to integrate it in administrative roles. Attitude may be

boosted by competence to use the ICT tools which lack of experts support may affect the interest in fear that breakdowns may challenge the user.

Technical support is crucial in ensuring ICT is integrated. These are trained experts to handle mechanical and technical hitches that may arise. Most of the schools lack their ICT trained expert. They rely on hired one services from outside once there is break-down which lead to slowing down administration work. This discourages principals to use ICT and especially with new technologies that they may need retraining on.

### 5.5 Recommendations

Based on the findings of this study, the researcher makes the following recommendations aimed at improving integration of ICT in administration of secondary school Kitui Central Sub-County as well as countrywide at large:

i. School principal to work with school management bodies to acquire and install ICT and related infrastructure like internet and power supply.
ii. KEMI to organise ICT training courses for principals to acquire skills relevant in administration work. Colleges and universities training teachers to train teachers on ICT usage.
iii. School principal to organize seminars to train non-teaching staff on benefits of ICT so that they have a positive attitude towards ICT integration.

iv. The school administration to set aside funds to employ ICT trained experts to ensure that all ICT equipment work effective to save teaching time.

### 5.6. Suggestions for further study

Given the scope and limitations of this study, the researcher recommends the following as areas for further studies:

i) A study on factors influencing school principal's integration of ICT in administration of secondary school should be carried out in other counties for comparison purpose.

ii) A replica of the study should be carried out incorporating more variables that hinder integration of ICT in public secondary schools. These variables also include non-teaching staff competency in ICT factors as well as availability of reliable power factors.

## REFERENCES


Afshari, M., Bakar, K., Luan, W, Siraj, S. (2012). Factors affecting the transformational leadership role of principals in implementing ICT in schools.*The Turkish Online Journal of educational Technology*, vol. 11(4), pp. 164-176.

Afshari, M., Bakar, K., Luan, W., Samah, B., Foo, F. (2010).Computer use by secondary school principals. *The Turkish Online Journal of Educational Technology*9(3): 8-25.

Agaba, D. (2003). *Utilization of Makerere University library information resources by academic staff: Challenges and the way forward.* Unpublished Masters Dissertation, Makerere University, Kampala, Uganda.

Albirini, A. (2006). Teachers' attitudes toward information and communication technologies. *Journal of Computer& Education*, 47, 373-398.

Ayeni, A.A. (2004). Relevance of ICT to the Construction of Sports Courts and Pitches,.West *African Journal of Physical and Health Education*. 8, July.

Baker, C. (1992). *Attitudes and language.*Clevedon: Multilingual Matters.

BECTA (2004).*A review of the research literature on barriers to the uptake of ICTbyteacher*s.Becta.www.Becta.org.uk/pagedocuments/research/barrierpdf

Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science & Technology Education*, *5*(3), 235-245.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education and Development using ICT*, *8*(1), 136-155.

Butler, D. L.,& Sellbom, M. (2002). Barriers to adopting technology. *Educause Quarterly*, *2*, 22-28.

Cohen, L., Manion, L.,& Morrison, K. (2000). *Research methods in education*. New York: Routledge.

Dalton, D. W. (1989). Computers in the schools: *A diffusion/adoption perspective. Educational Technology, 29 (11), 20-27.*

Davis J., Foxall G. & Pallister J. (2002). Beyond the intention-behaviour 72.

Davis, F. D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly* 13(3): 319–340

Farrel, C. (2007). *Survey of ICT and Education in Africa*. A Summary Report Based on 53 Countries. Washington DC: info/world bank.

Fishbein M. and Ajzen I. (2010) Predicting and Changing Behaviour: The Reasoned Action Approach, Taylor and Francis, New York.

Gay, L. R. (1992). *Educational research competence for analysis and application*. New York: Macmillan Publishers Company.

Government of Kenya (2006). *National information and communication technology (ICT) strategy for education and training*. Nairobi, Kenya: Government Printer.

Hennessey, S. (2010). Teacher factors influencing classroom use of ICT in sub-Saharan Africa. *Itupale Online Journal of African Studies,* Vol. 2 (1), pp. 39- 54

Hornby, A. S. (2006). Oxford Advanced Learner'sDictionary. (7th Ed). India, Oxford Univ. press

Jimoyiannis, A.&Komis, V. (2007). Examining teachers' beliefs about ICT in education: Implications of a teacher preparation programme. *Teacher Development*.

Jones, C.A. (2001) *Teach Support: Preparing teachers to use technology*. *Principal Leadership*.

Kelles, V. A. (2005). The Role of ICT in Governing Rural Development. Paper presented at the *International Fund for Agricultural Development* (IFAD) *workshop* on Innovation Challenges for Rural Development held in Rome, on November 17. Retrieved April 2015, from (http://www.ifad.org/innovation/presentations/ict.pdf)

Kiptalam, G. K., & Rodrigues, A. J. (2010). Internet utilization: A case of Connected rural and urban secondary schools in Kenya. *International journal of computing and ICT research*.

Kombo, D. K. & Tromp. (2006). *Proposal and thesis writing.* Nairobi: Pauline Publications Africa.

Kozma, R. (2005). National policies that connect ICT-based education reform to economic and social development. *An Interdisciplinary on Humans in ICT Environments*, *Vol. 1(2):* 117-156.

Laaria, M., (2013). Leadership challenges in the implementation of ICT in public secondary schools Kenya, *Journal of Education and Learning 2 (1) 32-43http://dx.doi.org/10.5539/jel.v2n1p32*

Lau, C. T. & Sim, C. H. (2008). Exploring the extent of ICT adoption among secondary teachers in Malaysia. *International Journal of Computing and IT research*.

Makhanu, E. (2010). *Principals' literacy in ICT: towards improving secondary school performance in Kenya*. Pretoria: Unpublished PhD thesis, University of South Africa.

Maki, C. (2008)."Information and communication technology for Administration and Management for secondary schools in Cyprus" *Journal of Online Learning and* Teaching.

Mbatia, M. (2014). *Factors influencing school principals' integration of ICT in administration of public secondary schools in Githunguri sub county, Kiambu county, Kenya*. Nairobi, Unpublished Masters project, University of Nairobi.

Ministry of Information and Communications, (2006). "National ICT Policy. "Nairobi, Government

Mioduser,D. Tur-kaspa, H. &Leitner (2000). The learning value of computer based instructions of early reading skills, *journal of computer assistant international accessed June, 2008.*

Mugenda, O. M. &Mugenda, A. G. (1999). *Research Methods; quantities and qualitative approaches.* Nairobi:

Mugenda, O. M. &Mugenda, A. G. (2003). *Research Methods; quantities and qualitative approaches.* Nairobi: ACTS.

Mugenda, O. M., & Mugenda, A.G. (2009). *Research methods & quantitative* 75 *and qualitative approaches.* Nairobi: Acts Press.

MugendaO. M (2000), *Research Methods; quantities and qualitative approaches.* Nairobi: ACTS

Mwencha, B.K. (2012). *Use of information and communication technology in secondary schools in Kenya: a case of Isinya district, Kajiado county, Kenya.* Nairobi: Unpublished Masters project, University of Nairobi.

Mwunda, N., M., (2014). *A Framework for Integration of ICT in Teaching and Learning Process in Machakos Sub County. Unpublished* Masters project.Moi University.

Olayemi, a & Omotayo, k. (2012). ICT adoption and effective secondary school administration in Ekiti-state, Nigeria. *European Journal of Educational Studies Vol. 4(1),* pp. 60-64.

Oloo,L (2009).Baseline Survey Report for ICT in Secondary Schools in Selected parts-draft Report retrieved from http://www.gg.rhu/.ac.uk/ict4d/kenyanschools.pdf

Orodho.J.A. (2009). *Techniques of Writing Research. Proposal and Reports in Education and Social Sciences. Kanezja* ,Maseno, Kenya. 71

Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: results from a worldwide educational assessment. *Computers & Education*, *37*(2), 163-178.

Peralta, H., Costa, F.A. (2007). Teachers' competence and confidence regarding the use of ICT. *Educational Sciences Journal*.

Plomp, T. &Reinen, I.J. (2000). Some gender issues in educational computing use: Results of an international comparative survey. Computer and education, 20(4). Accessed April 2007.

Priscilla, M., Nida, M., Khambari, M. and Wong S. L. (2008). Factors that could possibly influence the use of laptops among educators. European Journal of Social Sciences, 7 (1), 114

Republic of Kenya (2006*). The national information and communication technology policy.* Nairobi, Government printers.

Rozell, E.J., & Gardner, W.L. (1999). Computer-related success and failure: a longitudinal field study of the factors influencing computer-related performance. *Computers in Human Behavior*.

Schiler, J. (2003). Working with ICT: Perceptions of Australian principals. *Journal of Educational Administration*, vol. 41 (3), pp. 171-185.

Singh, T & Muniandi, K. (2012). Factors affecting school administrators' choices in adopting ICT tools in schools – The case of Malaysian schools. *International Education Studies*, Vol. 5 (4), pp. 21-30.

Teo, T. (2008). Pre-service teachers' attitudes towards computer use: A Singapore survey. *Australasian Journal of Educational Technology*, vol. 24.

Tondeur, J., Van Keer, H., Van Braak, J., &Valcke, M. (2008). ICT integration in the classroom: Challenging the potential of a school policy. *Computers & Education, 51*(1), 212-223.

Tong, K. P., & Trinidad, S. G. (2005). Conditions and constraints of sustainable innovative pedagogical practices using technology, *International Journal for Leadership in Learning*, *9* (3), 1-27.

Van Braak, J., Tondeur, J., &Valcke, M. (2004). Explaining different types of computer use among primary school teachers. *European Journal of Psychology of Education*, *19*(4), 407-422.

Waweru, B. K&Kihara, C. M. (2013). Challenges in the adoption and utilization of ICT in public secondary schools in Molo sub-county, Kenya.*Journal of Network & Communication Technologies (JNCT)*, vol. 1(7), pp. 234-239.

Woodrow, J. E. (1992). The influence of programming training on the computer literacy and attitudes of preservice teachers. *Journal of Research on Computing in Education*, *25*(2), 200-219.

Young, J. (2002). The 24-hour professor. The Chronicle of Higher Education, Vol. 48, No. (38)31-33.

## APPENDICES

### APPENDIX 1: LETTER OF INTRODUCTION

University of Nairobi,

Department of Education Administration and Planning,

P.O.BOX 92 0902 - KIKUYU.

Date……

The Principal……

Secondary School

Dear sir/Madam,

**RE: PERMISSION TO CONDUCT A RESEARCH IN YOUR SCHOOL.**

I am a student pursuing a Masters degree in Educational Administration at University of Nairobi. I am carrying out a research on the **"Factors influencing Principals' integration of Information Communication Technology in administration of public secondary schools in Kitui Central Sub-county , Kenya."** I will be grateful if you allow me to involve you, your Deputy and Heads of Department in this study. The information obtained will be used for the purposes of Research and the identities of the respondents will be kept confidential. Your cooperation will be highly appreciated.

Thank You.

Yours faithfully,

Dorcus Kimuyu

## APPENDIX II

## QUESTIONNAIRE FOR PRINCIPALS/DEPUTY PRINCIPALS

**Instructions**:

This questionnaire is designed to gather information on Factors influencing principals' integration of ICT in administration of public secondary schools in Kitui Central Sub County. Kindly, do not indicate your name or the name of the school on the questionnaire. Respond to the questions by either using a tick (√) as appropriate or by filling in the blank spaces.

**SECTION A: Personal Details**

1. What is your gender? Male ( ) Female ( )

2. What is your age range? 31-40 yrs( ) 41-50 yrs( ) Over 50 yrs ( )

3. What is your highest academic qualification? M.Ed ( ) B.Ed ( ) PGDE ( )
   Any other (please specify) _____

4. What is your designation [Principal] [Deputy Principal]

5. How long have you been in the teaching profession? 5-10 years ( )
   11-15 years ( ) 16-20 years ( ) Over 21 years ( )

6. What is the school type? Boys Boarding ( ) Girls Boarding ( ) Mixed Boarding ( ) Mixed day ( )

7. How long have you served in the current station?1-5years ( ) 6-10years ( ) Over 11years ( )

**SECTION B: Availability of ICT Infrastructure and its influence on principal's ICT integration in administration.**

8. By use of a tick (√), indicate whether the following ICT are available in your school and whether they are used in school management.

| **Technology** | **Availability** | | **Used in management** | |
|---|---|---|---|---|
| | **Yes** | **No** | **Yes** | **No** |
| Computers | | | | |
| Laptops | | | | |
| Mobile phones | | | | |
| CCTV Cameras | | | | |
| Internet connections | | | | |
| Un interrupted Power Supplies | | | | |
| Overhead projectors | | | | |

**How Principals use ICT and its integration in school administration**

9. The following are some of the administrative tasks of a secondary school principal. Using a tick (√), rate yourself on a five point scale on the extent to which you have integrated ICT in the following tasks. 1. Strongly agree 2.Disagree 3.Not sure 4.Agree 5.Strongly disagree

| **Administrative tasks** | **Very Large Extent** | **Large Extent** | **Fairly Large** | **Little Extent** | **Not at all** |
|---|---|---|---|---|---|
| Maintaining students records | | | | | |
| Maintenance of staff records | | | | | |
| Monitoring of class attendance | | | | | |
| Maintenance of school resources records | | | | | |
| Internal finance audit | | | | | |
| Communication with school stakeholders | | | | | |

**SECTION C: Principals' ICT literacy levels and integration of ICT in administration**

10. The following is a list of useful ICT packages in school administration. Kindly Tick (√) your level of proficiency in the following.

| **ICTs** | **Very Little** | **Little** | **High** | **Very High** |
|---|---|---|---|---|
| Microsoft word | | | | |
| Microsoft excel | | | | |
| Microsoft Power Point | | | | |
| Internet and email | | | | |
| Quick books | | | | |
| Teleconferencing | | | | |

11. Principals' ICT literacy level influences ICT integration in secondary school administration? Yes [ ] No [ ] Not Sure [ ].

**SECTION D: Influence of principal's attitude towards ICT integration in secondary school administration.**

12. Using the scale of 1 to 5 given below, please fill in empty cells at the right end of the table. Key: Strongly Agree (1), Agree (2), Not Sure (3), Disagree (4), Strongly Disagree (5).

| **STATEMENT** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| ICT has made instructional supervision more effective | | | | | |
| Text messaging helps to communicate with school stakeholders effective | | | | | |
| e-mail has eased communication with all stakeholders | | | | | |
| ICT has enhanced receipting of school fees which has helps internal audit | | | | | |
| Preparation of Trial Balance using ICT has become easier | | | | | |
| Setting of exams is not a difficult task any more with the use of ICT | | | | | |
| Use of ICT in Exam results analysis is time saving and more accurate | | | | | |
| The school sources for technical advice from IT experts in the society | | | | | |
| Spread sheet help to prepare store inventories for easy monitoring | | | | | |
| Use of ICT costs the school unnecessary costs | | | | | |
| e-mails are a cheaper mode of communication | | | | | |
| Text messaging is not official | | | | | |
| Use of ICT in setting examination is prone to errors and abuse | | | | | |
| My school bursar prefers the traditional means of generating receipts | | | | | |
| Database/spread sheets are boring to operate | | | | | |

**SECTION E: Availability of technical Support and ICT integration**

13. Does your school have ICT trained expert who fixes our ICT gadgets. Yes( )
    No ( )

***14. Below is a list of roles of school ICT expert, tick (√)those that he/she does in your school***

| **Role of school ICT expert** | **(√)** |
|---|---|
| Repair and Maintenance of ICT equipment in school | |
| Assisting the user | |
| Training other members of staff | |
| Help in formulation of school ICT policy | |
| Advises the principal during purchase of ICT equipment | |

Any other? State _____

_____

15. If No, who repairs your ICT tools in the school?
    .....
    .....

16. What are some of the challenges facing ICT integration from an experts point of view ?.....

.....

**Thank you for your cooperation.**

## APPENDIX III

## QUESTIONNAIRE FOR SUB-COUNTY EDUCATION OFFICER

**Instructions**: This questionnaire is designed to gather information on Factors influencing principals' integration of ICT in administration of public secondary schools in Kitui Central Sub County. Kindly, do not indicate your name. Respond to the questions by either using a tick (√) as appropriate or by filling in the blank spaces. Any information given will be used for the purpose of this study and your identity will not be disclosed.

**SECTION A: Personal Details**

1. What is your gender? Male ( ) Female ( )

2. What is your age range? 31-40 yrs ( ) 41-50 yrs( ) Over 50 yrs ( )

3. What is your highest academic qualification? Masters [ ] degree [ ] diploma [ ]

4. How long have you served in this sub-county under the same capacity? 5-10 years ( ) 11-15 years ( ) 16-20 years ( ) Over 21 years ( )

5. Approximately, what percentage of principals in public schools in this sub-county has integrated ICT in their administration?

   [0 -20] [30 – 50] [60 – 80] [90 – 100]

6. Does the Sub-County Education Office have existing ICT policy for secondary schools administrators? [Yes ] [ No ]

7. What support does the Sub-County Education Office offer to promote ICT integration among secondary school principals within the area?

   ……

   ……

   ……

   ……

8. What challenges does your office face in effort to support ICT integration among secondary schools administration?

9. Which areas should the principals be assisted to enhance ICT integration in administration? ……..

   ……

   ……

   ……

   ……

10. Suggest other ways that can be use to improve the ICT integration in management of schools? …….

……

……

……

……

**Thanks for your cooperation**.

## APPENDIX IV: UNIVERSITY PERMIT

UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF EDUCATION
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING

Telegram: "CEES"
Telephone: 020-2701902
dept-edadmin@uonbi.ac.ke

P.O. BOX 30197 NAIROBI
OR P.O. BOX 92 - 00902
KIKUYU

17/10/2016

Our Ref: UON/CEES/SOE/A&P/1/4

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

SUBJECT: KIMUYU NTHENYA DORCUS - REG NO. E55/67165/2013

This is to certify that **Kimuyu Nthenya Dorcus** is a Master of Education student in the Department of Educational Administration and Planning at the University of Nairobi. She has completed her course work and is summarizing her research proposal on "***Factors Influencing Principals' Integration of Information Communication Technology in Administration of Public Secondary Schools in Kitui Central Sub County, Kenya***". She is specializing in Educational Administration.

Any assistance accorded to her will be highly appreciated.

Yours faithfully,

Chairman
17 OCT 2016

DR. JEREMIAH M. KALAI
CHAIRMAN
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING

*JMK/nd*

## APPENDIX V: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
*MS. DORCUS NTHENYA KIMUYU*
of UNIVERSITY OF NAIROBI, 7-90200
kitui,has been permitted to conduct
research in *Kitui County*

on the topic: *FACTORS INFLUENCING PRINCIPALS` INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY IN ADMINISTRATION OF PUBLIC SECONDARY SCHOOLS IN KITUI CENTRAL SUB COUNTY, KENYA*

for the period ending:
*31st October,2017*

Permit No : NACOSTI/P/16/69774/14330
Date Of Issue : 2nd November,2016
Fee Recieved :Ksh 1000

.....
Applicant's
Signature

.....
*Director General*
*National Commission for Science, Technology & Innovation*

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 11595

CONDITIONS: see back page

## APPENDIX VI: RESEARCH AUTHORIZATION FROM THE CDE

THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

E-mail; *cckitui@gmail.com*
When calling or telephoning

.....
When replying please quote

OFFICE OF THE
COUNTY COMMISSIONER
KITUI COUNTY
P.O. BOX 1 - 90200
**KITUI**

Ref. K.C.603/1/147

14th November 2016

**TO WHOM IT MAY CONCERN**

**RE: RESEARCH AUTHORIZATION: DORCUS NTHENYA KIMUYU**

The above named is a student of University of Nairobi, she is authorized to carry out research on ***"Factors influencing principal' integration of Information Communication Technology in administration of public secondary schools in Kitui Central Sub County, Kenya,"*** for a period ending 31st August, 2017.

Kindly accord her the necessary assistance she may require.

**M.G. MAUKI**
FOR: COUNTY COMMISSIONER
**KITUI COUNTY**