AN ASSESSMENT OF THE USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN ADMINISTRATION OF PUBLIC SECONDARY SCHOOLS IN SEME SUB-COUNTY, KISUMU COUNTY, KENYA

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DECLARATION

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

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I dedicate this project work to my loving wife Caroline Vuhya and our children Tom Ochieng and Dalshin Nigel for their endless love, support and encouragement.

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ABBREVIATIONS AND ACRONYMS

ANT	Actor Network Theory
ASWEF	African Summit of the World Economic Forum
BOM	Board of Management
CAPI	Computer Assisted Personal Interviewing
CDE	County Director of Education
DVD	Digital Versatile Disk
ECA	Economic Commission for Africa
GoK	Government of Kenya
HOD	Head of Department
ICT	Information and Communication Technology
KEMI	Kenya Education Management Institute
KESSP	Kenya Education Sector Support Program
KNEC	Kenya National Examinations Council
LCD	Liquid Crystal Display
SDGs	Sustainable Development Goals

MIS	Management Information System
MoE	Ministry of Education
NACOSTI	National Council for Science, Technology and Innovation
NEPAD	New Partnership for African Development
PTA	Parents -Teachers Association
SPSS	Statistical Package for Social Sciences

ABSTRACT

Information and Communication Technology usage in administration of public secondary schools can counteract obsolete management practices and improve the efficiency and effectiveness in various aspects of school management. There is limited research in Africa and specifically in Kenya to identify and address key challenges facing adoption and use of ICT in the administration particularly in the education sector. The purpose of this study was to assess the usage of ICT in the administration of public secondary schools in Seme Sub-County, Kisumu County, Kenya. The study was guided by four objectives namely; to establish how ICT is used in the administration, to establish the level of competence of principals in ICT usage in the administration, to determine barriers to ICT usage in the administration and to establish factors which enhance ICT usage in the administration of public secondary schools. The study employed a descriptive survey design and a target population of 33 principals, 33 bursars and 198 heads of departments. Eleven public secondary schools, 11 Principals, 11 bursars and 59 heads of departments were randomly sampled. A pilot study was conducted in two schools to establish the validity and reliability of the questionnaire used to collect data. The study found that majority (60%) of schools use ICT in their administration for communication, maintenance of records for teachers, students and non teaching staff, preparation of timetables, students' report forms and analyzing students' performance. The key barriers to ICT usage include lack of training in ICT (60%) and lack of technical support from ICT experts (66.7%). Factors that can enhance ICT usage in the administration include training in ICT (90.0%) and technical support from experts (81.8%). The study concluded that majority of public secondary schools use ICT in their administration, principals' competence in ICT usage in administration range from no competence to moderate competence, lack of training in ICT, inadequate ICT facilities hinder ICT usage in the administration and that barriers to ICT usage can be overcome by having a clear policy on ICT usage in secondary school administration. The study recommends that; Ministry of Education in conjunction with the Kenya Institute of Curriculum Development should develop in-service training in ICT for secondary school principals. Public secondary school Principals should identify specific barriers that hinder ICT usage and eliminate them in time. Further research can be done on; determinants of ICT usage in the administration of public secondary, assessment of ICT usage in the administration of public secondary schools in other Counties using a larger sample size and assessment of ICT usage in the administration of public primary schools.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The conceptual and planning work related to the implementation of Information and Communication Technology (ICT) in schools goes back in history to the early 1980s while the increased emphasis on the holistic incorporation of technology into educational systems began during the 1990s (Baruch , Mioduser , Nachmias & Tubin 2005).Tearle (2004) who analyzed ICT integration in three schools in the United Kingdom observed that integration of ICT into schools has been a focus of a plethora of policy initiatives by governments worldwide for over twenty years. New information and communication technologies provide unprecedented opportunities for data collection, analysis and dissemination.

Today, 95 per cent of the global population is covered by a cellular network, while mobile-cellular subscriptions have grown to over 7 billion. Internet penetration has increased to 43 per cent of the world's population, linking 3.2 billion people to a global network of content and applications. New data collection technologies, such as Computer-Assisted Personal Interviewing (CAPI) and mobile text surveys (SMS), and new data sources, such as social media posts, online search records and mobile phone call records, allow faster data collection and provide near real-time information (United Nations, 2015).

In June, 2003, at the African Summit of the World Economic Forum (ASWEF) held in Durban, South Africa, the New Partnership for African Development (NEPAD) launched the E- school initiative, intended to equip all African high schools with ICT equipment including computers, radio, television sets, phones, fax machines, communication equipment, scanners, digital cameras and copiers among other things. The aim of the initiative is to impart ICT skills to young Africans in primary and secondary schools and to harness ICT to improve, enrich and expand education in African countries (Aginam, 2006). The Economic Commission for Africa (ECA) has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing countries, especially in Africa are still low on ICT application and use (Aduwa- Ogiegbean & Iyamu, 2005).

Kenya promulgated a national ICT policy in January, 2006 giving priority to ICT. This provided the basis for the Ministry of Education (MoE) to develop its sector policy on ICT in education and in June, 2006 the Ministry introduced the National ICT Strategy for Education and Training (Ministry of Information and Communication, 2006). According to Ministry of Education, (2007), some of the strategic plan objectives to be achieved are to establish an efficient institutional framework for effective delivery of education services and to integrate ICT in education. Use of Management Information Systems (MIS) which is one of the components of ICT can provide support to school employees in daily activities, and improve their performance, effectiveness and efficiency. For instance, MIS

will ensure usable and accessible school databases on students, teachers, employees, classrooms, students' test scores, discipline cases, finance and teacher allocation to classes (Barta et al., 2000).

The Government of Kenya, in its 8th Millenium Development Goals (MDGs) for Vision 2030 endeavors to avail the benefits of new technologies, especially ICT .Due to the catalytic role of the ICT sector in economic growth, the government of Kenya has initiated several efforts so that citizens can benefit from opportunities in the sector and develop global partnerships . The government in partnership with development partners has equipped a number of schools with Information and Communication Technology (ICT) facilities such as computers, Television (TV) sets, Digital Versatile Disk (DVD) players, Liquid Crystal Display (LCD) projectors, printer and radio among others (Siele, 2006).

The performance of information and communication has drastically improved in terms of access to reliable information and communication services as a result of liberalization of the sector. The licensing of private broadcasters has expanded the democratic space by facilitating the freedom of expression through community radio stations and variety of national private broadcasters. The print media has also grown rapidly. However, the information and communication is still faced with various challenges which include delayed finalization of an ICT policy; high cost of airtime for use of mobile services; use of outdated and dilapidated equipment and facilities under public establishment; ever changing technology; and high

investment technology among others. The ICT industry in particular is hampered by lack of skills, low access to telecommunications and financial services, and inadequate legislative framework (Ministry of State for Planning and National Development, 2008).

A study by Gakuu and Kidombo (2010) on pedagogical integration of ICT in selected Kenyan secondary schools observed that most secondary schools in Africa use computers as an object of study rather than a tool for teaching and learning. The results of the study showed that ICT integration in school administration is influenced by the school's ICT policy and school managers' level of ICT skills.

1.2 Statement of the Problem

The vision for the education sector for 2030 is to have globally competitive quality education, training and research for sustainable development. To achieve this vision, four strategic areas namely, access, quality, equity and science technology and innovation have been identified for support based on their impacts on the economic, social and political pillars. The education and training curricula in the country will be reformed at length to ensure that the creation, adoption, adaptation and usage of ICT become an integral part of the country's education (GoK, 2011).

Kenya National Examinations Council (KNEC) for example introduced an online registration for KCPE and KCSE in 2013 which replaced the offline method. The full online registration was meant to ensure that candidates adhere to the

registration regulation at source to avert challenges such as withholding candidate's results for failure to comply with the regulations. However, KNEC admits that challenges with the online registration such as congestion, service unavailability and last minute rush to beat the registration deadline by schools make the KNEC infrastructure to experience capacity challenges (KNEC, 2014). These challenges are being experienced by school principals despite the fact that Kenya Education Management Institute (KEMI) has introduced ICT courses for school managers. Most studies have primarily focused on the use ICT in teaching and learning, while little attention has been given to their incorporation as a professional tool outside the classroom (Menesses, Fabreques, Rodriques, Gomez & Ion, 2012). Integration of ICT in administration of public secondary schools can counteract obsolete management practices and improve networking with other principals in various aspects of school management (Kenney, 2006)

At the moment, most of the ICT application in Seme Sub-County is only directed to assist the teachers in delivering their instructions, while in supporting administration and management systems, the schools do not still have a clear policy and direction of the ICT employment. Accordingly, most of the administration and management related duties are managed ineffectively and conventionally. This study which attempts to assess the usage of ICT in administration of public secondary schools in Seme Sub County is therefore justified.

1.3 Purpose of the Study

The purpose of this study was to assess the usage of Information and Communication Technology in administration of public secondary schools in Seme Sub-County, Kisumu County.

1.4 Objectives of the Study

The study was guided by the following objectives:

i. To establish how ICT is used in the administration of public secondary schools in Seme Sub- County.

ii. To establish the level of competence of principals in ICT usage in the administration of public secondary schools in Seme Sub-County.

iii. To determine barriers to ICT usage in the administration of public secondary schools in Seme Sub-County.

iv. To establish factors which enhance ICT usage in the administration of public secondary schools in Seme Sub-County

1.5 Research Questions

The study was guided by the following questions:

i. How is ICT used in the administration of public secondary schools in Seme Sub County?

ii. What is the level of principals' competence in ICT usage in the administration of public secondary schools in Seme Sub-County?

iii. What are the barriers to ICT usage in the administration of pubic secondary schools in Seme Sub-County?

iv. What are the factors that enhance ICT usage in the administration of public secondary schools in Seme Sub-County?

1.6 Significance of the Study

This study has contributed valuable knowledge to the field of administration in general. It forms a useful material for reference to the Ministry of Education and public secondary school administrators. The study is also expected to influence important policy statements through its recommendations on ICT and administration of public secondary schools .Such recommendations could inform policy formulation in the administration of public secondary schools and other organizations in general.

1.7 Limitations of the Study

Due to the scope of this research proposal, the researcher was not able to collect data from the entire recommended population sample, so the study was limited by the number of participants namely, principals, bursars and heads of departments. The sample size for this study comprised of a very small proportion of the entire population of secondary school administrators in the country. Therefore, research

studies with larger sample size are required to ensure appropriate generalization of the study findings.

1.8 Delimitation of the Study

The study was delimited to the assessment of ICT integration in administration of public secondary schools. The geographical scope was selected from public secondary schools in Seme Sub-County, Kenya. The study targeted public secondary school principals, deputy principals and heads of departments. Due to the large number of potential participants in the study population, the population involved in this study focused only on members located within Seme Sub County. Teachers who are not involved in the administration of public secondary schools were not included in this study.

1.9 Basic Assumptions

The study was based on the following basic assumptions:

i. Public secondary school administrators are key players in integration of ICT in administration
ii. Public secondary school administrators use ICT in managing finances.
iii. Principals, deputy principals and heads of departments are involved in administration.

1.10 Definition of operational terms

Administration refers to a social process concerned with identifying, maintaining, motivating, controlling and unifying formally and informally organized human and material resources to achieve the goals of a school.

Barrier refers to any hindrance to the success of ICT integration in administration of public secondary schools.

ICT refers to diverse set of technological tools and resources used to communicate and to create, disseminate, store, and manage information."These technologies include computers, the Internet, broad-casting technologies (radio and television), and telephony.

ICT Competence refers to ICT knowledge and skills possessed by secondary school administrators.

Integration refers to incorporation of ICT in administration of public secondary schools.

ICT Skill refers to special ability to use ICT acquired by training

Principal refers to the head of a public secondary school

Public school refers to schools that are formally supported by the government especially in terms of recruitment of teachers and provision of other teaching and learning resources.

Secondary school refers to a high school or a school of corresponding grade, ranking between a primary school and a college or university.

Secondary school administration refers to working with and through teachers, non-teaching staff and students to achieve predetermined objectives in a secondary school set up.

1.11 Organization of the study

The study is organized into five chapters. Chapter One highlights background of 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, basic assumptions of the study, definition of significant terms and organization of the study.

Chapter Two presents review of related literature as per the objectives of the study namely; principals' ICT skills in administration of secondary schools, barriers impeding ICT integration; enhance factors , the role of ICT in administration of public secondary schools, theoretical framework, conceptual framework and summary of reviewed literature.

Chapter Three encompasses research design, target population, sample size and sampling technique, research instruments, instrument validity, instrument reliability, data collection procedure and analysis techniques.

Chapter Four comprises data analysis presentation and interpretation

Chapter Five consists of summary, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the literature related to ICT integration in administration of public secondary schools. It particularly focuses on competence of principals' in ICT integration in administration of secondary schools, barriers impeding ICT integration; enhance factors and the role of ICT in administration of public secondary schools. The review is conceptualized under the objectives in this study.

2.2 Use of ICT in administration of public secondary schools

While most studies primarily focus on the use of ICT in teaching and learning, little attention has been given to their incorporation as a professional tool outside classroom (Menesses, Fabregues, Rodriquez, Gomez & Ion, 2012).There have been increasing changes for administrators in the areas of leadership expectation, work demands, schools and personal accountability, human resources management, decision making, communication, power and authority and planning. These changes demand that the school administrator must be computer literature to cope with the demands on him or her (Oboegbuleim and Ogbonnaya, 2008).ICT in education has become one of the most effective factors in school improvement, not only for the purpose of teaching and learning , but also for administrative use (Tosun & Baris, 2011)

The professional use of ICT can be categorized into two types: firstly supportive use including preparation activities for the classroom and secondly, management use refers to teachers' general duties in the functioning of schools as organizations (Menesses et al, 2012).ICT provides several facilities and possibilities for educational administrators to perform their tasks. It supports powerful and efficient management and administration in the education sector (Maki, 2008; Zainally, 2008)

Iwu and Ike (2009) opined that ICT has rendered international boundaries irrelevant since many modern activities cut across international frontiers. Institutional administrators use ICT for improved communication as a process of transforming thoughts, the sharing and imparting of information, sending and receiving and understanding of message within a network of independent relationship. Technology can be used from student administration to various resource administrations in an education institution. Data use in school administration currently ranges over multiple areas , informing administrators about demographics , school processes , student learning as well as perceptions and projections (Bernhardt, 2000).Principals in secondary schools need effective and fast communication and accessibility to information (Wiley, 2003). As a professional educator, you are a professional communicator. Administrators need to correspond through e-mail and the internet, creating websites for school marketing. According to Maki (2008) in her study in Cyprus secondary schools, administrative subsystems include: personnel administration, student

administration, resource administration, financial administration and general administration.

In Kenya for instance, secondary school principals have several leadership functions which according to the Teachers Service Commission (TSC, 2007:9-11) are their responsibilities. These include the organization and management of the approved school curriculum, the management and control of school finances and stores, the management and motivation of human resources in the school, functioning as a secretary to the school Board of Management (B.O.M) and the Parents Association (P.A) and the management and maintenance of the school plant and equipment. Since the workload is enormous, it is important for ICT literacy to be integrated in school leadership in order to improve performance. It is hoped that ICT literacy integration can counteract obsolete management practices and improve networking with other principals in various aspects of school management. In addition, ICT can help improve on the collection, analysis, synthesis, storage, distribution and sharing of information and governance (Kenney, 2006).

2.3 Competence of Principals in ICT usage in Administration of Secondary schools

Pernia (2008) defines ICT as technologies used to communicate in order to create, manage and distribute information. She adds that a broad definition include computers, the internet, telephone, television, radio, and audio-visual equipment.

According to Aboderin (2009) , ICT encompasses the broad fields of information and communication by means of computer and telecommunication; tools that are being increasingly used for organization or personal information processing in all sectors of economy and the society as a whole. Digital technology is included in this definition as services and applications used for communication and information processing functions are associated with these devices (Amara 2006).

According to Afshari, Bakar and Wong (2012), school principals should have basic skills of using ICT in school daily administrative and management job. In the study conducted by Maki (2008) in Cyprus secondary schools, administrative subsystems include: personnel administration, student administration, resource administration, financial administration and general administration. The confidence and competence of principals in the use of ICT are key determinants of the effective use of ICT in administrative duties (Amara, 2006). ICT provides several facilities and possibilities for educational administrators to perform their tasks (Zainally 2008). Afshari et al (2010) assert that principals need to be cognizant of the benefits of the new technologies. If principals understand the value of ICT and its benefits, they are able to implement innovations in schools.

Despite the importance of ICT application use in education studies show that majority of the school administrators have intermediate level of computer literacy (Sipila, 2010; Afzaal, 2012; Mwalongo, 2011; Webb, 2011). Evidence suggests that education sector is investing heavily on ICT projects but the implementation

of these educational projects lags behind than in the business sector (Bingimlas, 2009). Broadley (2012) found that some school leaders were not competent in basic ICT skills though Gurr (2010) insists that present school leaders should demonstrate some basic understanding of ICT in order to perform their duties effectively and inspire the school community to implement it. According to UNESCO (2009) report, there is need to equip school principals , administrative staff, teachers and students with the appropriate ICT skills and advising principals and teachers on pedagogical issues in the use of ICTs . In this technology driven age, everyone requires ICT competence to survive. Organizations are finding it necessary to train and re-train their employees to establish their knowledge of computer and other ICT facilities (Adomie & Anie, 2006; Tlyer 1998). This calls for acquisition of ICT skills by secondary school administrators.

Technical skills are important for full utilization of ICT. Such skills, research indicates that emanate from experience and constant use of ICT (Mwalongo, 2010). Uwadia (2009) emphasized that ICT serves as a tool for increased productivity and effective decision making. For instance, the knowledge of ICT can be explored by the secondary school administrators to ensure teachers effective delivery, effective communication, effective maintenance of sound students record systems and maintaining academic planning record system among others.

A study carried out by Anderson & Dexter (2010) on technology leadership behaviors of school principals established that, apart from ICT infrastructure being important in school, school leadership was the most determining factor in the process of implementing ICT projects in schools. This is supported by Kidombo (2009) who argues that leadership behavior of educational manager has a positive role in determining the process of ICT implementation in education.

2.4 Barriers to ICT usage in administration of public secondary schools

While there is a wide range of innovations in ICT to support effective and quality of delivery of educational services, there is considerable technology lag in the Kenyan educational institutions. Most of the institutions use nearly obsolete systems and consequently are unable to exploit educational potential of the emerging technologies (G.O.K, 2006a). An observation by Empirica (2006) concurred with the findings. He posits that although significant steps had been taken by the Cypriot government regarding ICT in schools, the utilization of ICT in educational management and administration still remained at an early stage. Kenya Educational Sector Support Program (KESSP) in 2009 revealed that projects involving ICT use and integration in the Kenyan secondary schools have both internal and external challenging factors leading to weak implementation of the ICT projects (UNESCO, 2010).

Two types of barriers are described currently hampering the integrated use of ICT by teachers: external (first-order) barriers and internal (second-order) barriers

(Ertmer, 1999).External barriers comprise variables that are perceived as key obstacles for example adequate access to technology, internet access, bandwidth, technology related training (Galanouli, 2004). Markauskaite (2005) reveals that many school principals have low levels of confidence and competence to enable them make effective use of ICT in school leadership. According to an observation made by Gray and Smith (2007), twenty –first century principal administrators face numerous challenges emanating from the technology.

Organizational barriers include issues such as fragmentation and poor relationship between functional departments, non acceptance by the senior management of the strategic benefits of investment in technology and the absence of a clear strategy for implementation (Wright, Fletcher, Donaldson & Lee, 2008). According to a research done in Malaysia by Ranjit, Singh & Muniandi (2012), lack of facilities insufficient time to master and apply knowledge due to heavy teaching hours and attitude of teachers are the barriers to technology adoption in school administration. Lack of adequate training and experience is considered one of the main reasons why teachers have negative attitude towards computers and do not use technology in their teaching (Yildirim, 2007). On the presidential computer project for standard one, the conceptualization of its implementation remains hollow to date. The optimism concerning the potential of ICT to enhance pupil achievement is a given. However, research cautions and shows continuing problems in the adoption of ICT by teachers hence the need to explore alternative modalities for ICT in our schools (Daily Nation, 2015). The Task Force appointed

by Education Minister in January, 2011 to realign the education sector to vision 2030 and the new constitution noted that only about two percent of schools in the country have the necessary ICT infrastructure (GoK, 2011). According to Okwudishu (2005), unavailability of some ICT components in schools hamper teachers' use of ICT in administration.

2.5 Factors enhancing use of ICT in the administration of public secondary schools

The Government of Kenya in its 8th Millennium Development Goals (MDGs) for vision 2030 endeavors to avail the benefits of new technology, especially ICT. Due to the catalytic role of the ICT sector in the economic growth, the Government of Kenya has initiated several efforts so that citizens can benefit from the opportunities and develop global partnerships (Ministry of State for Planning and National Development, 2008). Recent investigations in high –access schools and across districts (Schofield,1995; Becker & Ravitz, 2001; Cuban et al ,2001; Windschitl & Sahl, 2002; Conlon & Simpson, 2003) point to the teacher as the key to implementation of computer technology beyond the organizational and environmental barriers. Teacher's belief, attitudes and emotions also build the meaning they bring to innovations, such as technology integration (Van den Berg, 2002).

The source of motivation for teachers to use technology include gains in learning and using computers for their own development as teachers, wider success among

teachers if ample technology, support and time for teachers to learn (Sheingold & Hadley's, 1990). Teachers' expertise and dedication are necessary for technology integration to occur and students' enthusiasm and talent prompt the process to unfold (Hruskocy et al, 2000). Other studies further revealed positive factors which encourage teachers to use technology: collegiality among teachers at their school, school support for consequential computer activities, resources for staff development and more formal computer training (Becker, 1994).

Olele (2011) summarized several of the components of a school effective integration plan as introduced by researchers (Levine, 1998; T.Newby, Stepich, Lehman& Russel, 2006). They included : establishing a technology integration committee; developing a school vision and articulating a role for technology in that vision; exploring available technology and assessing ongoing technology implementation efforts; determining training and teacher needs; developing specific objectives and formulating a plan to achieve them; implementing the plan and evaluating the plan. Research has shown that technology leadership positively influences the leadership skills of school administrators (Papa, 2011).

2.6 Summary of Reviewed Literature

In this study the researcher has reviewed literature on ICT integration in administration of public secondary schools. This has been done with reference to the objectives of the study namely principals' ICT skills in administration of secondary schools, barriers impeding ICT integration; enhance factors and the role

of ICT in administration of public secondary schools. Research has been done on the influence of ICT in education; however, little attention has been given to its integration in the administration of public secondary schools. In Kenya principals' need relevant ICT skills to enable them integrate ICT in the administration of public secondary schools. There are numerous barriers that are likely to impede the smooth integration of ICT in administration of public secondary schools. However, enhance factors when made available can facilitate the rate of ICT integration in administration of public secondary schools. ICT integration in administration of public secondary schools plays an important role for example, it can be used for teaching and learning, human resource management, decision making, communication, planning, student administration and financial administration.

2.7 Theoretical Framework

The theoretical basis for this study was derived from the Actor Network Theory (ANT). Michael Callon and Bruno Latour, French Sociologists developed ANT in the 1980s (Norbert & Schemer, 2003).The sociologists defined ANT to be a hybrid of modern and post modern constructions in which there is a link between human and non –human entities .As noted in Waryzynski (2006), Law (1990) explains that ANT's rich methodology embraces the interactions and explanations of change to structural, cultural, technical, physical and human variables. A school principal as a focal person in ANT plays a role in the process of systemic change.ANT offers an inclusive description of technological change hence was

used in the study as an approach to managing technological change among school principals to enhance quality in education delivery and influence school performance (Cotton, 2001).

In this study ,ICT usage in administration, principals' ICT competence, barriers to ICT integration and factors that enhance ICT integration in administration of secondary schools are considered leading technological change involving interacting and collaborating with other actors , translating their interests and needs mobilizing and channeling the knowledge , resources and power leading to successful technological change .The use of ANT applies in its effectiveness , efficiency and impact of technology in an organization (Waryzynski, 2006).

2.8 Conceptual Framework

A conceptual framework is a model of representation where a researcher conceptualizes or presents relationships between variables in the study and shows the relationship diagrammatically or graphically (Orodho, 2004). The following is a model identifying the variables under this study and outlining their relationships.

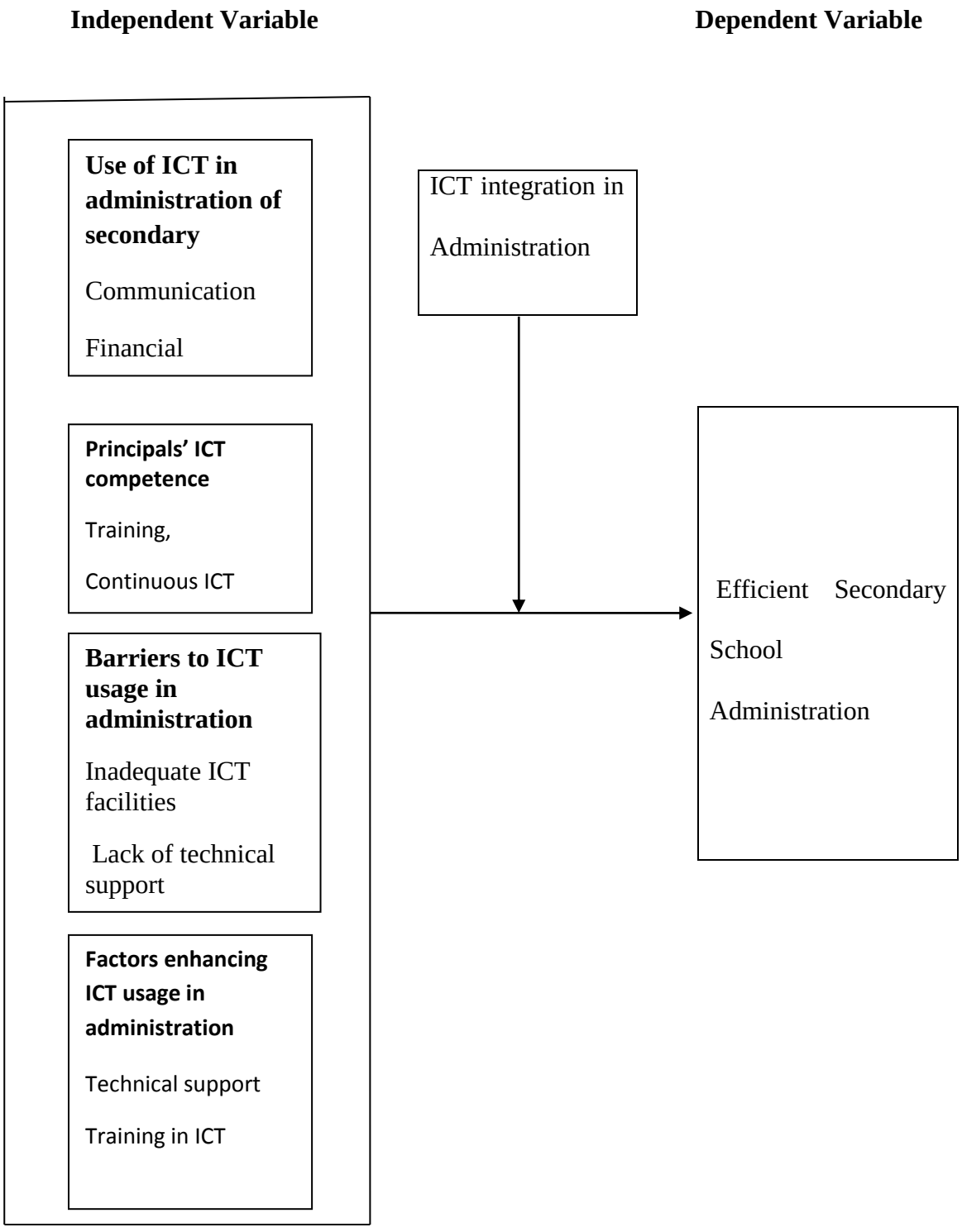


Figure 2.1 Conceptual framework

Figure 2.1 shows the relationship between the independent and dependent variables for the study. In the conceptual framework, the independent variables are use of ICT in administration of secondary schools, Principals' ICT competence, barriers to ICT usage in administration and factors enhancing ICT usage in administration while the dependent variable is efficient secondary school administration.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers research methodology used in this study. It covers research design, target population, sample size, sampling techniques, research instruments, validity and reliability of research instruments, data collection procedure, data analysis techniques and ethical considerations.

3.2 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004).This study adopted descriptive survey design. According to Mugenda and Mugenda (2003), the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. This design enabled the researcher to collect large amount of data from a sizable population and to analyze data quantitatively using descriptive and inferential statistics. The researcher carefully designed a descriptive study to ensure absolute description of the status and eliminate biasness during data collection.

3.3 Target Population

Mugenda and Mugenda (2003) define target population as an entire group of individuals, events or objects with some observable characteristic. There are 33 public secondary schools in Seme Sub-County. The target population consisted of 33 principals, 33 bursars and 198 Heads of Departments (H.O.Ds). This target population performs administrative functions in the school environment and therefore was in a position to provide useful information.

Table 3.1 Category of Public Secondary Schools in Seme Sub County

Category	Number	Principals	Bursars	H.O.Ds	Total
Girls Schools	2	2	2	12	18
Boys Schools	1	1	1	6	9
Day Schools	13	13	13	78	117
Boarding schools	2	2	2	12	18
Mixed Schools	9	9	9	54	81
Day and Boarding	6	6	6	36	54
Total	33	33	33	198	297

Source: Seme Sub County Education Office (2015)

3.4 Sample Size and Sampling Technique

A sample is a small proportion of the target population selected using some systematic procedure for study (Denscombe, 2008). According to Orodho (2004), sampling is the process of selecting a subject of cases in order to draw conclusions about the entire set. Stratified proportionate sampling was used to determine the number of boys' schools, girls' schools, mixed schools, boarding schools and day schools. Simple random sampling was used to select the respondents. Ten to thirty percent of the universe is seen as representative and can be generalized to the population (Mugenda & Mugenda, 2003). The researcher however used the higher limit of thirty percent as shown in the table 3.1 below.

Table 3.2 Sample frame

Group	Population	Sample Size	Sample (%)
Principals	33	11	30
Bursars	33	11	30
H.O.Ds	198	59	30
Total	297	81	30

3.5 Research Instruments

Questionnaires were used as the main tool for collecting data. Questionnaire is a research instrument that gathers data over a large sample (Kombo & Tromp, 2006). Questionnaire is preferred in this study because it is simple to administer, the data obtained is reliable and the coding, analysis and interpretation of data are relatively simple and straight forward. The questionnaires had five sections namely A, B, C D and E. Section A sought to capture demographic information about the respondents while section B,C, D and E had items related to the research questions of the study.

3.6 Instrument Validity

Validity is the degree to which an instrument measures what it is supposed to measure (Kothari, 2004).The research instrument was availed to the expert for moderation after which the researcher conducted a pilot study in two schools in order to establish content validity of the instrument.

3.7 Instrument Reliability

Reliability is the extent to which data can be trusted to represent the phenomena of interest rather than spurious ones (Krippendorff, 2008). The researcher used test – retest method to obtain reliability of the measuring instrument. This involved administering the same instrument in a span of two weeks in two of the schools in

the study samples. Scores from both testing periods were then correlated using Pearson's product moment correlation coefficient formula (r).

$$r = \frac{N\sum XY - (\Sigma x)(\Sigma y)}{\sqrt{n\Sigma x2 - (\Sigma x)\,2]\,[n\Sigma y2 - (\Sigma y)\,2]}}$$

Where x=first set of scores; y=second set of scores; **Σ** x=the sum of the first set of scores; Σy= the sum of second set of scores; **Σx=** the sum square of first set of scores. **Σy =**to the sum square of second set of scores; **Σxy=**the sum of cross product of x and y and n=total number of respondents. According to Mugenda (2003), reliability coefficient above 0.80 is satisfactory. The reliability index of the questionnaire was 0.91

3.8 Data Collection Procedure

The researcher sought a research permit from the National Council for Science, Technology and Innovation (NACOSTI) after defending the project proposal. The researcher then proceeded to the County Director of Education (CDE), Kisumu County to seek permission for collecting data in the county. Letters were written to principals of the sampled schools to allow the researcher to collect data in their respective schools.

The researcher made a courtesy call to the head of schools to make appointments. The researcher explained the purpose of study and assured respondents of

confidentiality of information they will provide and thereafter administered the questionnaires to them.

3.9 Data Analysis Techniques

Data was analyzed using Statistical Package for Social Science (SPSS) Computer software version 20.0. Descriptive statistics, frequencies and percentages were used to analyze quantitative data. Data collected were summarized in tables.

3.10 Ethical Considerations

In order to address ethical issues in this study, the researcher disclosed to the respondents the nature and aim of the study before administering the questionnaires to them. In addition, the respondents were instructed not to write their names or any form of identification in the questionnaires thereby maintaining their privacy and anonymity.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter contains analysis of data and summary of findings on the assessment of the usage of ICT in the administration of public secondary schools in Seme sub county, Kisumu County, Kenya.

4.2 Questionnaire return rate

The researcher sought to establish the questionnaire return rate from the principals, Heads of Departments and bursars. The questionnaire return rate by the respondents is presented in table 4.1

Table 4.1: Questionnaire return rate

Respondents	Sample size	Response	Percentage (%)
Principals	**11**	**11**	**100**
Bursars	**11**	**11**	**100**
H.O.Ds	**59**	**59**	**100**
Total	**81**	**81**	**100**

A total of 81 questionnaires were administered to the respondents. A total of 81 questionnaires were properly filled and returned. This represented an overall

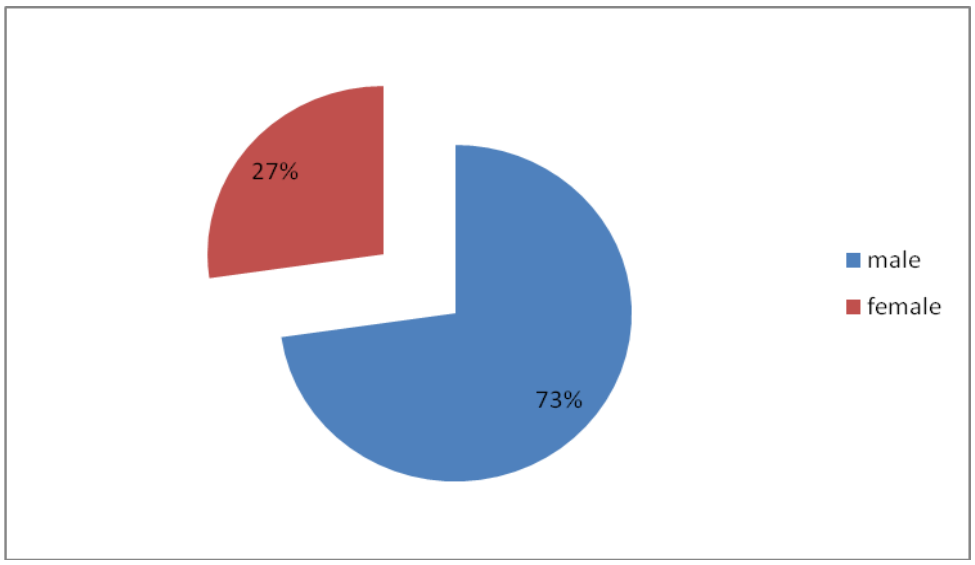
successful response rate of 100% as shown in Table 4.1. The 100% questionnaire return rate can be attributed to the fact that the respondents were quite cooperative during data collection. According to Mugenda and Mugenda (2003) and Kothari (2004) a response rate of 50% is adequate for a descriptive study. Babbie (2004) also asserted that return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good. Based on these assertions from renowned scholars, 100 % response rate is adequate for the study.

4.3 Demographic information of the respondents

This section analyses the demographic characteristics of the respondents. This is aimed at ensuring that there is no biasness in the manner in which the respondents are selected to participate in the study. The section contains results on demographic analysis which include; gender, age, duration of service and level of education of the respondents.

4.3.1 Gender of Principals

The study sought to establish the gender spread of the principals who participated in the study. The results are as shown in Figure 4.1.



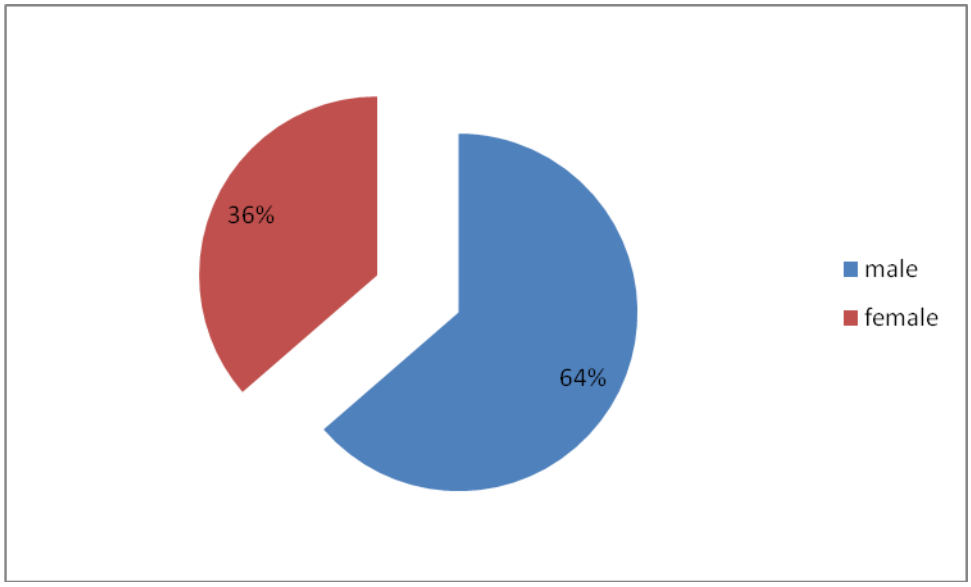
N=11

Figure 4.1: Gender of Principals

The results presented in Figure 4.1 indicate that majority (73%) of the principals who participated in the study were male. This implies that the position of principal in Seme Sub County is male dominated. This is an indication that structures have not been put in place by Teachers Service Commission in Seme Sub County to promote more female teachers to the position of principal.

4.3.2 Gender of Bursars

The study further established the gender composition of the bursars who participated in the Study. The results are as presented in Figure 4.2.



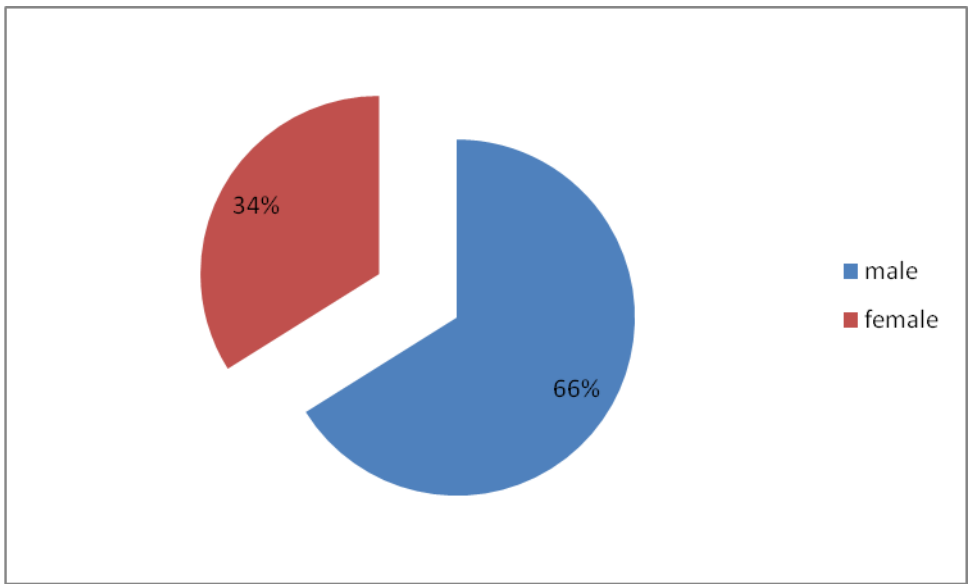
N=11

Figure 4.2: Gender of Bursars

The results presented in Figure 4.2 indicate that majority of the bursars who participated in the study were male with 64% of the respondents. This implies that the position of bursars in Seme Sub County is male dominated.

4.3.3 Gender of Heads of Departments

The study established the gender composition of the heads of departments who participated in the study. The results are as presented in Figure 4.3.



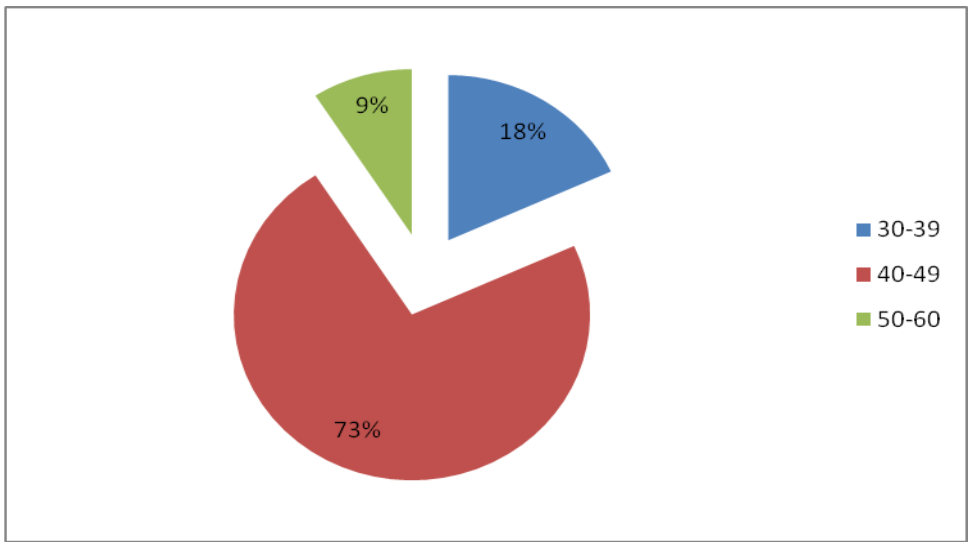
N=11

Figure 4.3: Gender of Heads of departments

The results presented in Figure 4.3 indicate that majority, 66% of the heads of departments who participated in the study were male implying that the position is male dominated.

4.4.1 Age of the Principals

The study sought to establish the age bracket of the principals who participated in the study. The results are as shown in Figure 4.4.



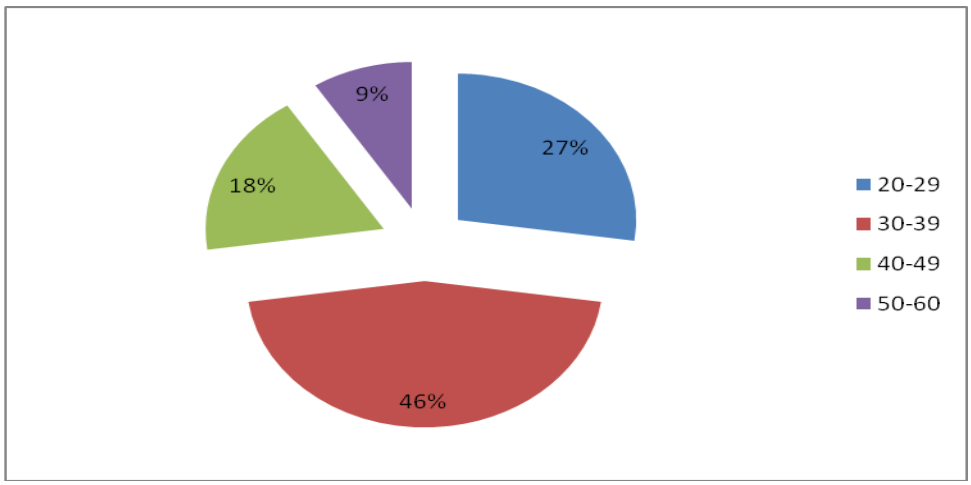
N=11

Figure 4.4: Age bracket of the Principals

The findings indicate that majority, 73%, of the principals who participated in the study are in the age group of 40 to 49 while the least, 9%, are in the age group 50 to 60. This implies that it is not easy for a teacher who is below the age of 40 years to be a principal in Seme Sub County. In addition, structures have not been put in place to promote teachers who are below the age of 40 years to the position of principal.

4.4.2 Age of the Bursars

The study established the age bracket of the bursars who participated in the study. The results are as shown in Figure 4.5.



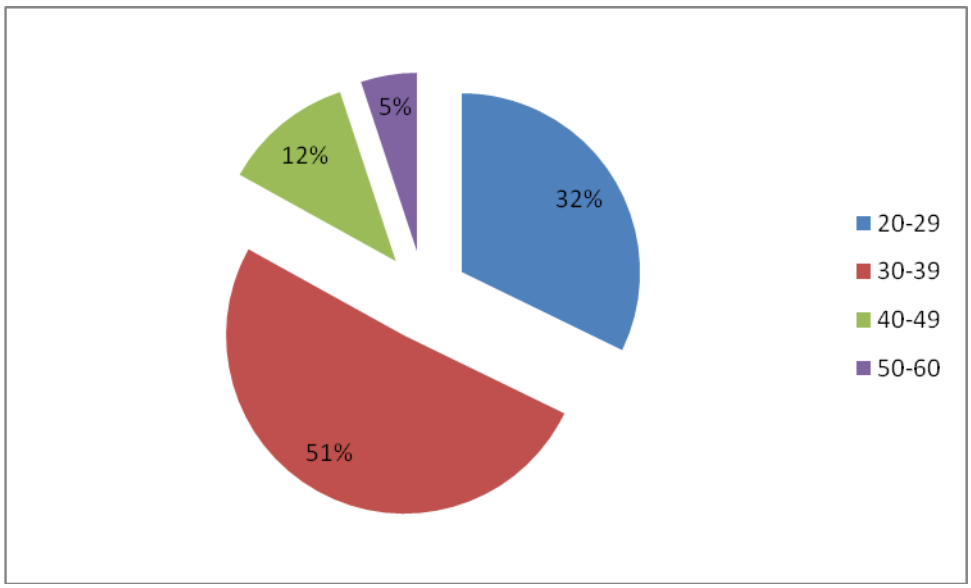
N=11

Figure 4.5: Age bracket of the Bursars

The findings in figure 4.5 indicate that 46% of the bursars who participated in the study are in the age group of 30 to 39 years, 27% are in the age group of 20 to 29 years, 18% are in the age group of 40 to 49 years while the least, 9%, are in the age group 50 to 60.This implies that the position of bursars is dominated the by people aged between 20 to 39 years.

4.4.3 Age of Heads of Departments

The age of the heads of departments was also established and the results are as presented in Figure 4.6.



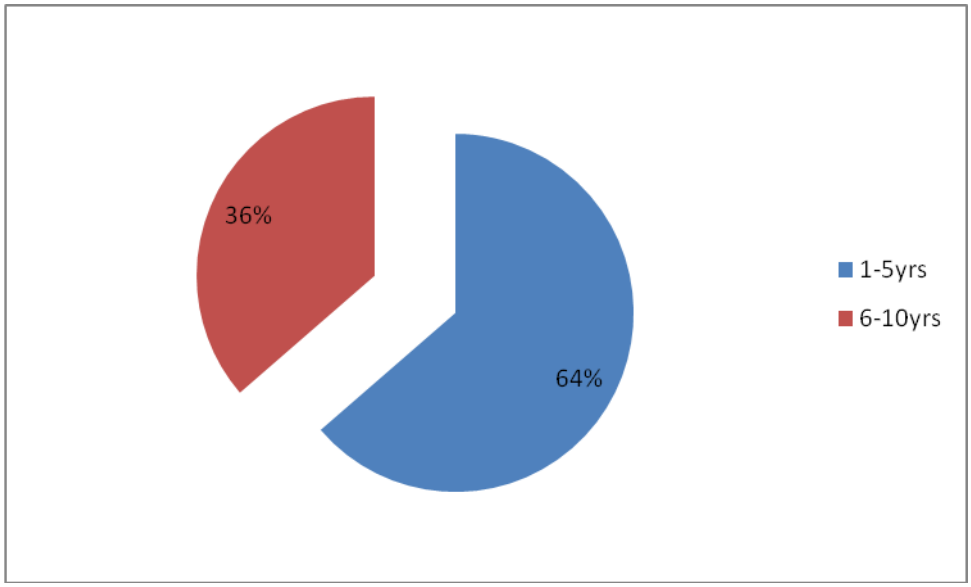
N=59

Figure 4.6: Age bracket of the Heads of departments

The findings in figure 4.6 indicate that majority, 51%, of the heads of departments who participated in the study are in the age group of 30 to 39 years while the least, 5%, are in the age group 50 to 60 years. This implies that the position of heads of departments in Seme Sub County is dominated by teachers aged between 30 to 39 years.

4.5.1 Duration of Service for Principals

The study sought to establish how long the principals had served in their positions. The results are as presented in Figure 4.7.



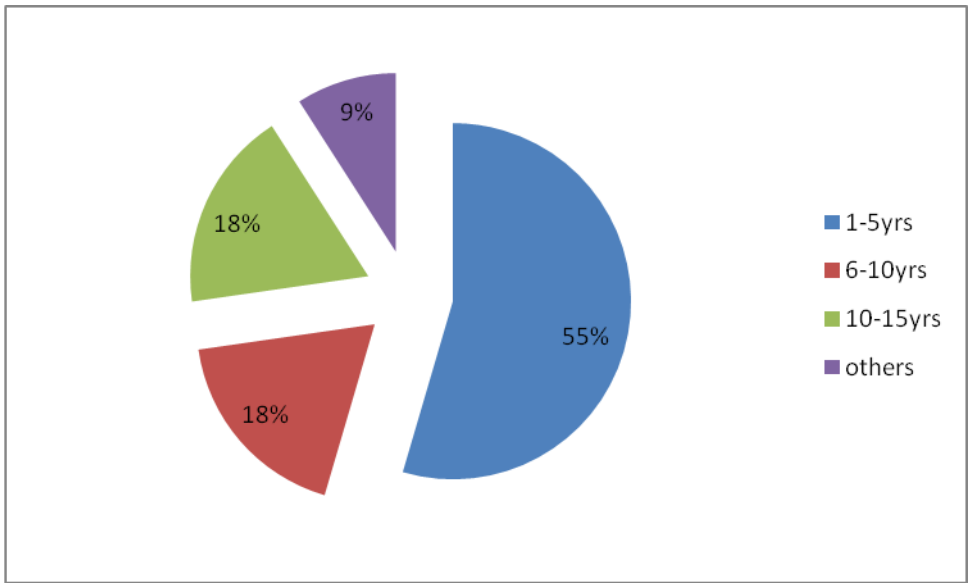
N=11

Figure 4.7: Duration of service as principal

The findings indicated that majority, 64%, of the principals who participated in the study had served in their positions for a period between 1 to 5 years while 36% had served for a period of between 6 to 10 years. These findings imply that the respondents were experienced and suitable to participate in the study.

4.5.2 Duration of Service for Bursars

The study further sought to establish how long the bursars had served in their positions. The results are as presented in Figure 4.8.



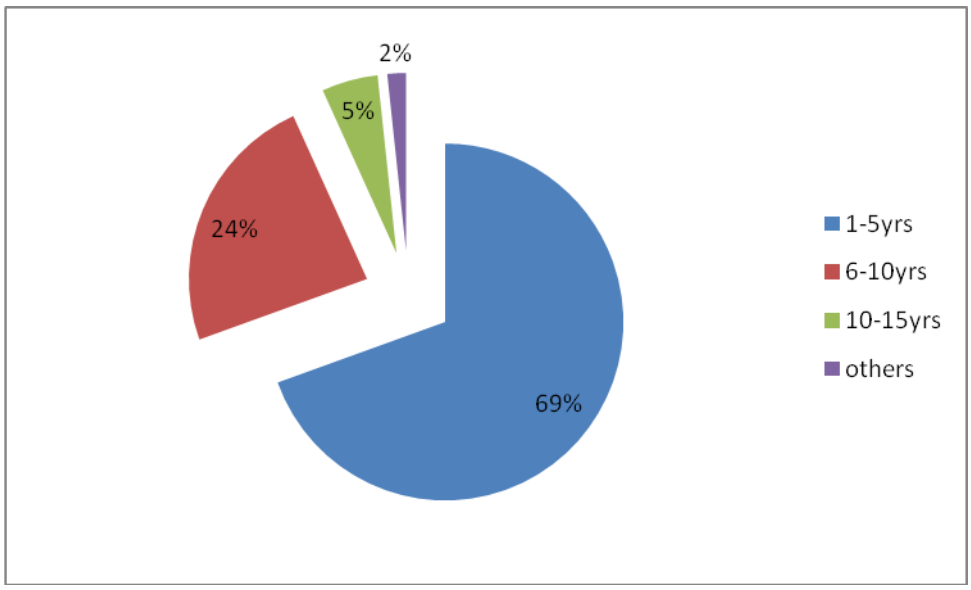
N=11

Figure 4.8: Duration of service as a Bursar

The findings on Figure 4.8 indicate that majority, 55% of the bursar's who participated in the study had served in their positions for over 15 years while 36% had served for a period of between 6 to 15 years. These findings imply that the bursar's who participated in the study are experienced and suitable to participate in the study.

4.5.3 Duration of Service for Heads of Departments

The study lastly established how long the heads of departments had served in their positions. The results are as presented in Figure 4.9.



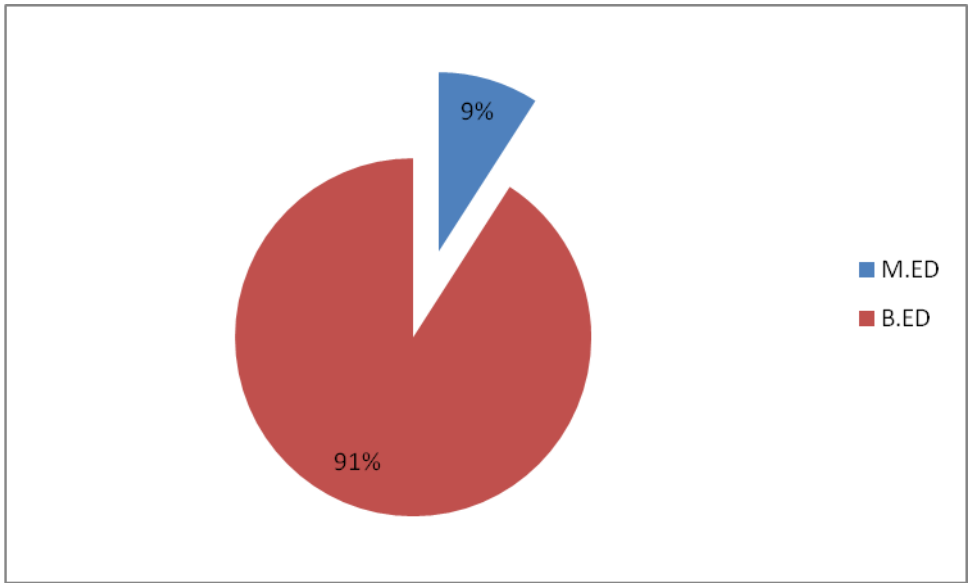
N=59

Figure 4.9: Duration of service as a Head of department

The results indicate that majority, 69% of the head of departments who participated in the study, had served in the positions for a period between 1 and 5 years. The least, 2%, had served for over 15 years. The implication is that the head of departments who participated in the study were experienced and suitable for the study.

4.6 Education level of the principals

The study sought to establish the education level of the principals who participated in the study. The results are as presented in Figure 4.10.



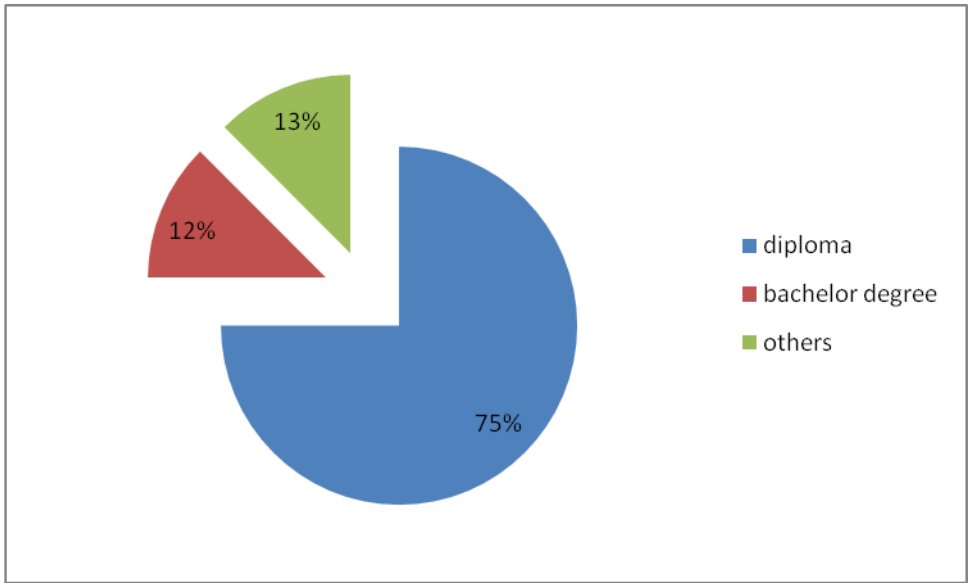
N=11

Figure 4.10: Education level of the Principals

The findings in Figure 4.10 indicate that majority of the principals, 91%, who participated in the study had a Bachelor of Education level of education while a few (9%) had a masters degree in education. The above findings are positive in that a majority of the principals (91%) are degree holders. This implies that they are well informed on academic and school administration matters as well as being qualified to head their respective schools.

4.6.1 Education level of the Bursars

The education level of the bursars was established and the results are presented in Figure 4.11.



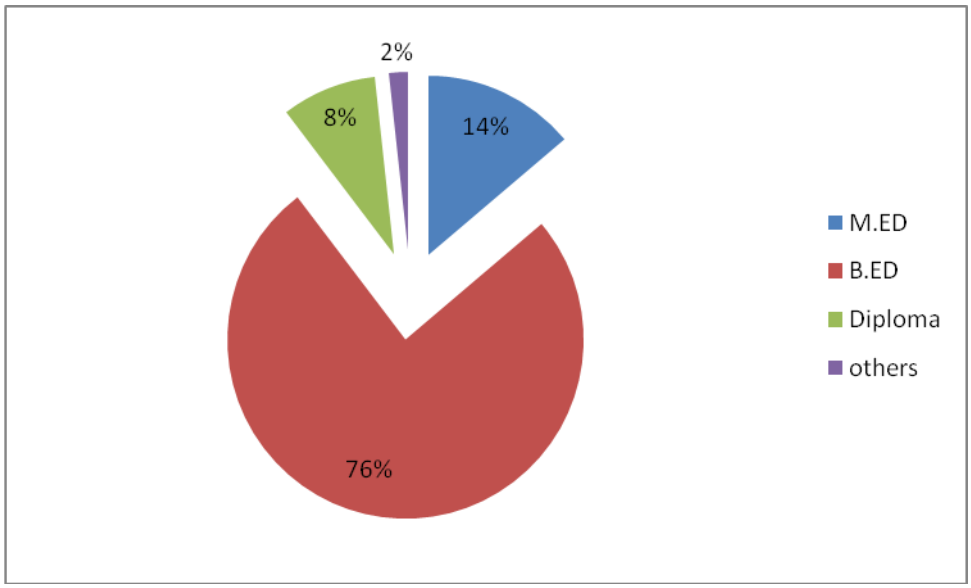
N=11

Figure 4.11: Education level of the Bursars

The findings in Figure 4.11 indicate that majority, 75%, of the bursars who participated in the study had a diploma level of education while only 12% had a bachelor's degree. This implies that the bursars in Seme Sub County have the relevant skills and knowledge of managing finances in the schools.

4.6.2 Education level of Heads of Departments

The study established the education level of the heads of departments who participated in the study and the results are as presented in Figure 4.12.



N=59

Figure 4.12: Education level of the heads of departments

The findings in Figure 4.12 indicate that majority, 76%, of the heads of departments who participated in the study had a bachelor of education degree while only 2% had a master's degree. This implies that the heads of departments have skills and knowledge required to head the departments.

4.7 Use of ICT in the administration of public secondary schools

The first objective of the study was to establish how ICT is used in the administration of public secondary schools in Seme Sub- County. The summary of principal's responses is as shown in Table 4.2.

Table 4.2: Principals' Responses on how ICT is used in administration

Use of ICT	Strongly Agree (%)	Agree (%)	Not Sure (%)	Disagree (%)	Strongly Disagree (%)
Communication to parents and teachers	54.5	36.4	0.0	9.1	0.0
Maintenance of teachers' records	36.4	36.4	0.0	18.2	9.1
Maintenance of school supplies records	27.3	36.4	0.0	27.3	9.1
Maintenance of students' records	54.5	27.3	0.0	18.2	0.0
Maintenance of non-teaching staff records	27.3	36.4	0.0	27.3	9.1
Maintenance of B.O.M records	45.5	27.3	0.0	18.2	9.1

N=11

The findings in Table 4.2 indicate that majority of the principals, over 50%, agreed that ICT is used for communication to parents and teachers (54.4%), maintenance of teachers' record (36.40%)s, maintenance of school supplies records (27.30%), maintenance of students' records(54.50%) , maintenance of non-teaching staff records (27.30%) and maintenance of B.O.M records(45.50%).

The study further presented the Bursars' view on how ICT is used in the administration of public secondary schools in Seme Sub- County. The summary of bursar's responses is as presented in Table 4.3.

Table 4.3: Bursars' Responses on how ICT is used in administration

Use of ICT	Strongly Agree (%)	Agree (%)	Not Sure (%)	Disagree (%)	Strongly Disagree (%)
Stock taking in the stores	0.0	50.0	0.0	33.3	16.7
Maintenance of fee payment records	16.7	66.7	0.0	16.7	0.0
Preparation of workers' payroll	50.0	50.0	0.0	0.0	0.0
Maintenance of teachers' imprest payment records	0.0	66.7	0.0	16.7	16.7
Communication to parents and teachers	20.0	40.0	0.0	20.0	20.0
Preparing the school budget	50.0	50.0	0.0	0.0	0.0

N=11

The findings indicated that majority of the bursars, over 50% of the participants agreed that ICT is used for maintenance of fee payment records, preparation of workers' payroll, maintenance of teachers' imprest payment records, communication to parents and teachers and preparing the school budget while only 50% agreed that ICT is used for stock taking in the stores.

The study also established the H.O.D's view on how ICT is used in the administration of public secondary schools in Seme Sub- County. The summary of bursars' responses is as presented in Table 4.4.

Table 4.4: H.O.Ds Responses on how ICT is used in administration

Use of ICT	Strongly Agree (%)	Agree (%)	Not Sure (%)	Disagree (%)	Strongly Disagree (%)
Preparation of departmental timetable	57.4	29.8	0.0	10.6	2.1
Preparation of students report forms	76.1	13.0	2.2	8.7	0.0
Maintenance of students performance records	63.8	29.8	2.1	2.1	2.1
Preparation of lesson notes	15.2	52.2	8.7	19.6	4.3
Preparation of examination timetables	71.7	21.7	2.2	4.3	0.0
Communicating to members of department	36.2	48.9	6.4	8.5	0.0
Analyzing students' performance	73.9	21.7	2.2	2.2	0.0

N=59

The findings indicated that, majority of the heads of departments, over 50% of the H.O.Ds, agreed that ICT is used for preparation of departmental timetable, preparation of students report forms, maintenance of students' performance records, preparation of lesson notes, preparation of examination timetables, communicating to members of department and analyzing students' performance. The findings imply that ICT is used actively in the administration of public secondary schools in Seme Sub County.

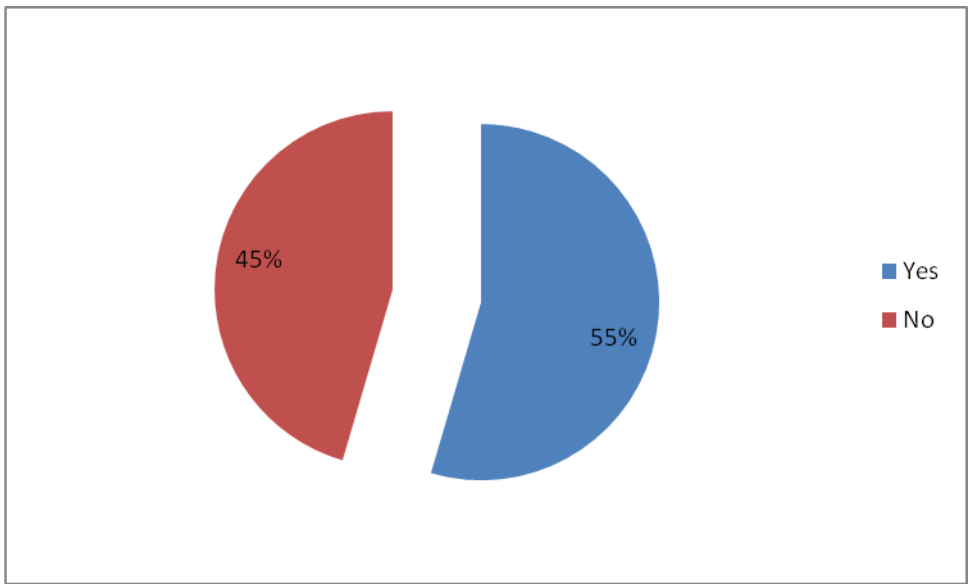
The findings of this study on ICT usage in the administration of public secondary schools are in agreement with the findings of Bernhardt (2000) who found out that

technology can be used from student administration to various resource administrations in an education institution. It is also in agreement with Maki (2008) whose findings revealed that ICT is used in personnel administration, student administration, resource administration, financial administration and general administration of the school.

4.8 Principals' ICT competence and administration of secondary schools

The second objective of the study was to establish the level of competence of principals in ICT usage in the administration of public secondary schools in Seme Sub-County.

The principals were requested to indicate whether they had taken any form of ICT training. The results are as presented in Figure 4.13.

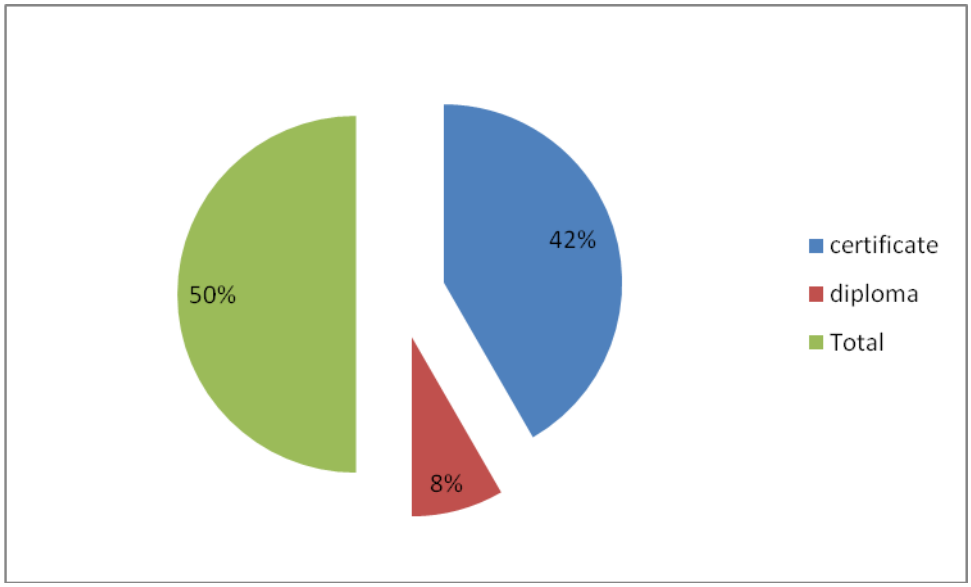


N=11

Figure 4.13: Principals' responses on training in ICT

The findings in Figure 4.13 indicate that majority of the principals, 55%, had taken ICT training while 45% indicated that they had not. This implies that majority of the principals were ICT literate.

Further, the study sought to establish the principals' qualifications in ICT and the results are as presented in Figure 4.14.



N=11

Figure 4.14: Principals qualification in ICT

The results in Figure 4.14 show that half of the principals who agreed that they had undertaken training in ICT indicated that they had a diploma in ICT while 42% indicated that they had a certificate.

A computer competence scale for testing competency in computer knowledge and skills was used to establish the competence of the principals in ICT usage. The rating was on a five point scale where 1 is no competence, 2 is little competence , 3 is not sure , 4 is moderate competence and 5 is much competence. The principals' responses are as presented in Table 4.5.

Table 4.5: Principals' Responses on their level of ICT competence

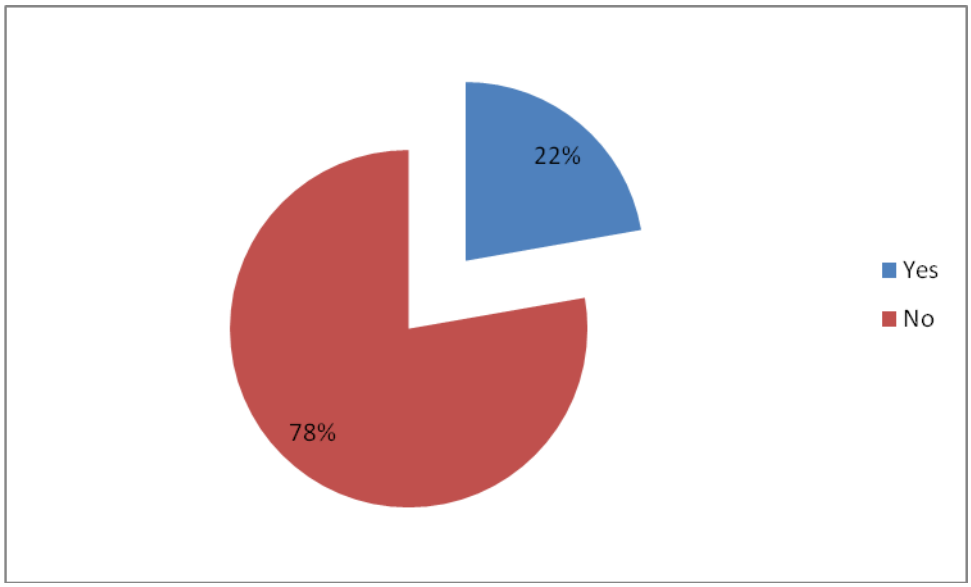
Computer Packages	No competence (%)	Little competence (%)	Not sure (%)	Moderate competence (%)	Much competence (%)
Basic computer operation skills	0.0	45.5	0.0	18.2	36.4
Maintenance and Trouble shooting of computer	36.4	9.1	18.2	27.3	9.1
word processing	9.1	36.4	0.0	45.5	9.1
Spreadsheets	9.1	36.4	9.1	36.4	9.1
Internet and email	0.0	27.3	0.0	36.4	36.4
Database	27.3	18.2	9.1	27.3	18.2
Power point	9.1	45.5	0.0	27.3	18.2

N=11

The findings in Table 4.5 indicate that a few, 36.4% of the principals indicated that they have moderate competence in using internet and email while 27.3% had little competence. 9.1% of the principals have no competence in word processing, spreadsheets and PowerPoint operation skills. Furthermore, 36.4% of the principals indicated that they have no competence in maintenance and trouble shooting of computer while 27.3% have no competence in using database. This

implies that the principals do not have much competence in using ICT in the administration of their schools.

The bursar's were requested to indicate whether the principals used ICT in the administration of the school. The results are as presented in Figure 4.15.



N=11

Figure 4.15: Bursars' Responses on Principals' use of ICT in administration

The findings in Figure 4.15 show that majority, 78%, of the bursars indicated that the principals do not use ICT in the administration of the school. These findings imply that despite the fact that majority of principals had trained in ICT; they do not use the skills to run the school.

The bursars were also requested to rate the competence of the principals on a competence scale for testing beliefs about competency in computer knowledge and

skills. The rating was on a five point scale where 1 is no competence, 2 is little competence , 3 is not sure , 4 is moderate competence and 5 is much competence. The bursars' responses are as presented in Table 4.6.

Table 4.6: Bursars' Responses on Principals' ICT competence

	No competence (%)	Little Competence (%)	Not sure (%)	Moderate competence (%)	Much competence (%)
Basic computer operation skills	0.0	0.0	50.0	50.0	0.0
Word processing	0.0	0.0	50.0	50.0	0.0
Spreadsheets	0.0	0.0	50.0	50.0	0.0
Internet and email	0.0	0.0	0.0	50.0	50.0
Database	0.0	0.0	50.0	50.0	0.0
Power point	0.0	0.0	50.0	50.0	0.0
Maintenance and trouble shooting of computer	0.0	50.0	50.0	0.0	0.0

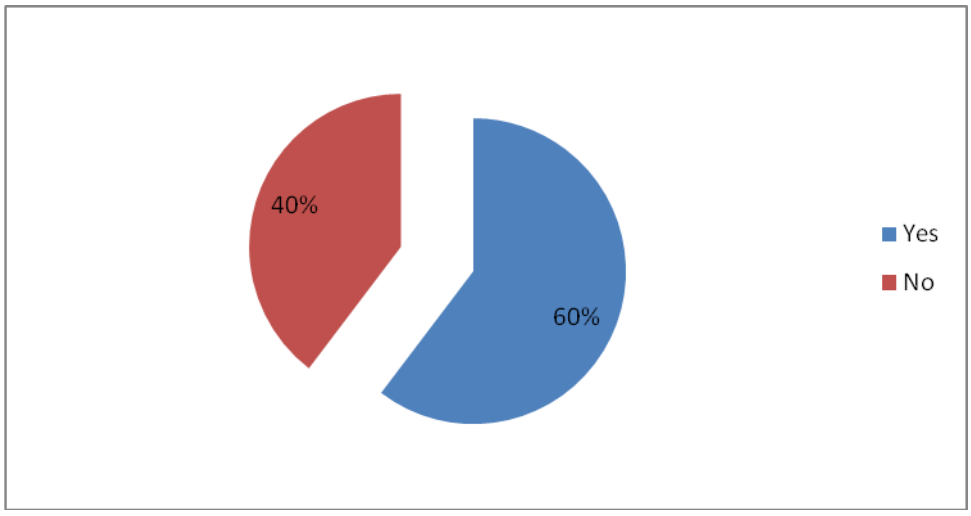
N=11

The results in Table 4.6 indicate that 50% of the bursars indicated that principals are competent in basic computer operation skills, word processing, spreadsheets, database and power point. Further, majority of the bursars indicated that principals are not competent in maintenance and trouble shooting of computers. These

findings confirmed the indication by the principals themselves that they are not competent in maintenance and trouble shooting of computers.

The H.O.Ds were also requested to indicate whether the principals used ICT in the administration of the school. The results are as presented in Figure 4.16

Figure 4.16: H.O.Ds' Responses on Principals' use of ICT in administration



N=59

Figure 4.16: H.O.Ds' Responses on Principals' use of ICT in administration

The findings in Figure 4.16 indicate that majority, 60%, of the HODs indicated that the principals use ICT in the administration of the school while a few, 40% indicated do not use ICT.

Furthermore, the HOD were also requested to rate the competence of the principals on a competence scale for testing beliefs about competency in computer knowledge and skills. The rating was on a five point scale where 1 is no competence, 2 is little

competence , 3 is not sure , 4 is moderate competence and 5 is much competence. The HOD's response is as presented in Table 4.7.

Table 4.7: H.O.Ds' Responses on Principals' ICT competence

Computer Packages	No competence (%)	Little competence (%)	Not sure (%)	Moderate competence (%)	Much competence (%)
Basic computer operation skills	2.9	2.9	8.6	34.3	51.4
Word processing	2.9	8.8	8.8	44.1	35.3
Spreadsheets	2.9	2.9	26.5	29.4	38.2
Internet and email	2.9	8.6	5.7	34.3	48.6
Database	2.9	8.6	31.4	28.6	28.6
Power point	2.9	5.7	25.7	37.1	28.6

N=59

The findings in Table 4.7 indicate that majority, over half, of the heads of departments who participated in the study rated principals as competent in basic computer operation skills, word processing, spreadsheets, internet and email, database and power point. These findings contradicted the findings by the principals regarding competence in database and PowerPoint.

The findings of the study on principals' competence in ICT agree with findings of the study conducted by (Sipila, 2010; Afzaal, 2012; Mwalongo, 2011; Webb, 2011) who found out that majority of the school administrators have intermediate level of computer literacy.

4.9 Barriers to ICT usage in administration of secondary schools

The third objective of the study was to determine barriers to ICT usage in the administration of public secondary schools in Seme Sub-County. The principals were requested to indicate whether there were any barriers to ICT usage in the administration of the school. The results are as presented in Figure 4.17.

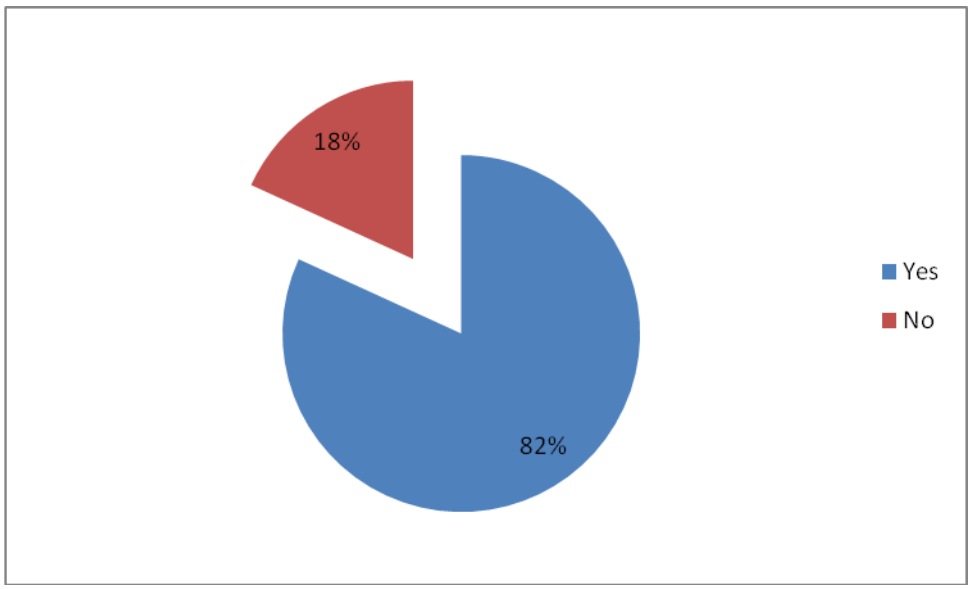


Figure 4.17: Principals' Responses on Presence of barriers to ICT usage

The findings indicated in Figure 4.17 reveal that majority, 82%, of the principals indicated that there were barriers to ICT usage in the administration of the school.

Furthermore, the principals were requested to rate the barriers to ICT usage in administration of the school on a five point scale of strongly disagree to strongly agree. The findings are presented in Table 4.8

Table 4.8: Principals' Responses on Barriers to ICT usage in administration

Barrier	Strongly Agree (%)	Agree (%)	Not Sure (%)	Disagree (%)	Strongly disagree (%)
Lack of training in ICT	60.0	30.0	0.0	10.0	0.0
Unclear ICT strategy	40.0	30.0	10.0	20.0	0.0
Lack of technical support	66.7	11.1	0.0	22.2	0.0
Lack of software	40.0	30.0	10.0	10.0	10.0
Limited knowledge on how to make full use of ICT	40.0	30.0	0.0	20.0	10.0
Lack of time to use ICT	10.0	20.0	0.0	50.0	20.0
Inadequate ICT facilities	60.0	30.0	0.0	10.0	0.0

The results in Table 4.8 indicate that majority of the principals, over half, of the principals who participated in the study revealed that some of the barriers to ICT usage in the administration of the school was lack of training in ICT, unclear ICT strategy, lack of technical support, lack of software, limited knowledge on how to make full use of ICT, lack of time to use ICT and inadequate ICT facilities. This was after majority of the principals admitted the presence of barriers to ICT usage in administration.

The bursar's were also requested to indicate whether there were any barriers to ICT usage in the administration of public secondary schools. The results are as presented in Figure 4.18.

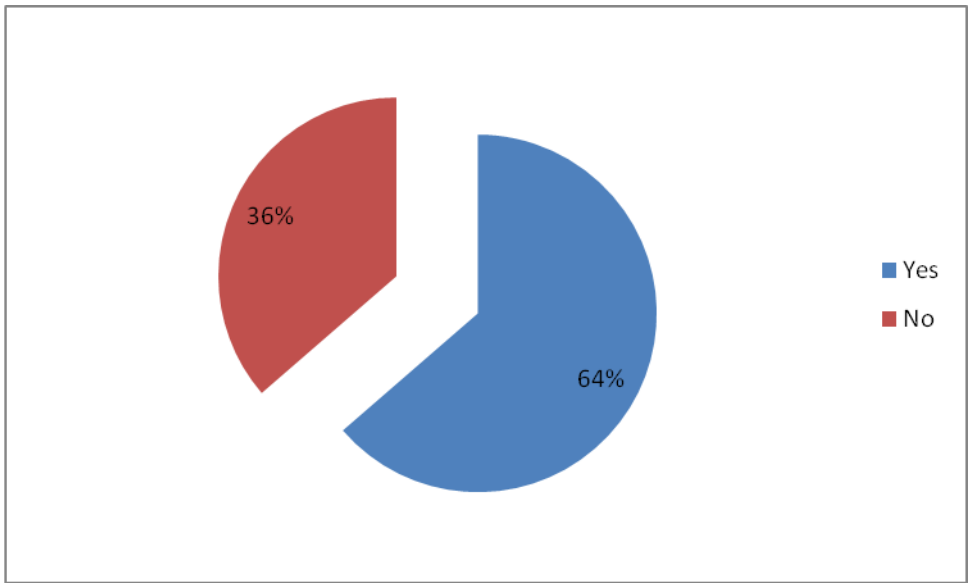


Figure 4.18: Bursars' Responses on Presence of barriers to ICT usage

Majority of the bursars, 64%, also confirmed the findings by the principals that there were barriers to ICT usage in the administration of public secondary schools in Seme Sub County.

The bursars were also requested to rate the barriers to ICT usage in the administration of secondary schools on a five point scale of strongly disagree to strongly agree and the findings are presented in Table 4.9.

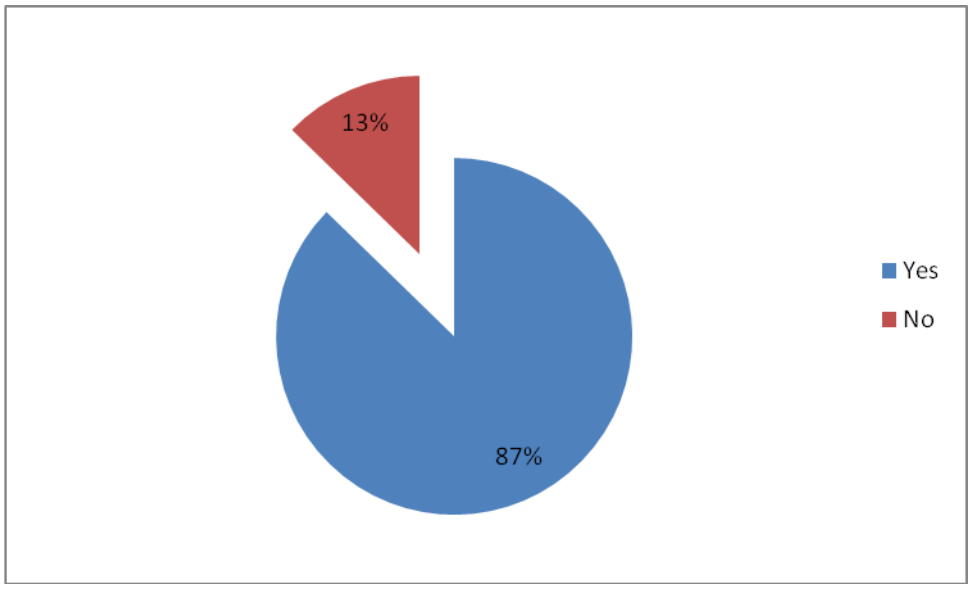
Table 4.9: Bursars' Responses on Barriers to ICT usage in administration

Barrier	Strongly Agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Lack of training in ICT	33.3	50.0	0.0	0.0	16.7
Unclear ICT strategy	33.3	33.3	0.0	0.0	33.3
Lack of technical support	66.7	33.3	0.0	0.0	0.0
Lack of software	16.7	66.7	0.0	16.7	0.0
Limited knowledge on how to make full use of ICT	16.7	50.0	0.0	16.7	16.7
Lack of time to use ICT	16.7	16.7	16.7	50.0	0.0
Inadequate ICT facilities	33.3	50.0	0.0	0.0	16.7

N=11

Majority of the bursars also indicated that some of the barriers which affect the usage of ICT in school administration were lack of training in ICT, unclear ICT strategy, lack of technical support, lack of software, limited knowledge on how to make full use of ICT, lack of time to use ICT and inadequate ICT facilities. These findings confirmed the observation by the principals implying that the barriers are easily identifiable.

Furthermore, the H.O.D's also indicated that there were barriers to ICT usage in the administration of secondary schools in Seme Sub County. The results are as presented in Figure 4.19.



N=59

Figure 4.19: H.O.Ds' Responses on the Presence of barriers to ICT usage

Like the principals and bursars, majority, 87%, of the HOD's indicated that there were barriers to ICT usage in the administration of public secondary schools in Seme Sub County while only 13% indicated that there was none.

Lastly, the HOD were also requested to rate the barriers to ICT usage in the administration of the school on a five point scale of strongly disagree to strongly agree and the findings are presented in Table 4.10.

Table 4.10: H.O.Ds' Responses on Barriers to ICT usage in administration

Barrier	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Lack of training in ICT	37.0	32.6	6.5	21.7	2.2
Inadequate ICT facilities	56.2	39.6	2.1	2.1	0.0
Lack of software	34.0	44.7	12.8	6.4	2.1
Lack of technical support	39.6	35.4	12.5	12.5	0.0
Negative attitude towards ICT	4.2	16.7	22.9	35.4	20.8

N=59

Majority of the HODs, over half, like the principals and bursars, indicated that some of the barriers to ICT usage in school administration are lack of training in ICT, inadequate ICT facilities, lack of software, lack of technical support and negative attitude towards ICT. The findings imply that the usage of ICT in schools is affected by barriers established above.

From the above findings, the principals, heads of departments and bursars agree the lack of training in ICT, inadequate ICT facilities, unclear ICT strategy, lack of technical support and lack of software hinder usage of ICT in the administration of public secondary schools in Seme Sub County. The findings are in agreement with the ones of UNESCO (2010) which indicated that projects involving ICT use and integration in the Kenyan secondary schools have both internal and external challenging factors leading to weak implementation of the ICT projects. These challenges include lack of training in ICT, inadequate ICT facilities, lack of software, lack of technical support and negative attitude towards ICT.

4.10 Factors which enhance ICT usage in administration of secondary schools

The fourth objective of the study was to establish the factors which enhance ICT usage in the administration of public secondary schools in Seme Sub-County. The principals were requested to rate some of the ways in which the use of ICT in the administration of secondary schools can be enhanced using a five point scale. The findings are presented in Table 4.11

Table 4.11: Principals' Responses on Factors which can enhance ICT usage

Factor	Strongly Agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Training in ICT	90.9	9.1	0.0	0.0	0.0
Availing ICT facilities	81.8	18.2	0.0	0.0	0.0
Technical support from the experts	81.8	18.2	0.0	0.0	0.0
Drawing a clear ICT strategy	72.7	27.3	0.0	0.0	0.0
Positive attitude towards ICT use in administration	72.7	27.3	0.0	0.0	0.0
Clear policy on ICT use in administration	81.8	18.2	0.0	0.0	0.0

N=11

The findings in Table 4.11 indicate that over half of the principals who participated in the study strongly agreed that some of the factors which can enhance ICT usage in the administration of public secondary schools in Seme Sub-County are training in ICT, availing ICT facilities, technical support from the experts, drawing a clear ICT strategy, positive attitude towards ICT use in

administration and establishing a clear policy on ICT use in administration. These can help solve some of the challenges facing usage of ICT in administration.

The bursar's were also requested to rate some of the ways in which the use of ICT in the administration of secondary schools can be enhanced using a five point scale. The findings are presented in Table 4.12

Table 4.12: Bursars' Responses on Factors which can enhance ICT usage

Factor	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Training in ICT	50.0	50.0	0.0	0.0	0.0
Availing ICT facilities	62.5	37.5	0.0	0.0	0.0
Technical support from the experts	62.5	37.5	0.0	0.0	0.0
Drawing a clear ICT strategy	50.0	50.0	0.0	0.0	0.0
Positive attitude towards ICT use in administration	50.0	50.0	0.0	0.0	0.0
Clear policy on ICT use in administration	62.5	37.5	0.0	0.0	0.0

N=11

Majority of the bursars, as indicated in Table 4.12, confirmed the results by the principals that some of the ways in which the use of ICT in the administration of secondary schools can be enhanced is through training in ICT, availing ICT facilities, technical support from the experts, drawing a clear ICT strategy, positive

attitude towards ICT use in administration and a clear policy on ICT use in administration.

The study also established the HODs' responses on the ways in which the use of ICT in the administration of secondary schools can be enhanced. The findings are presented in Table 4.13.

Table 4.13:H.O.Ds' Responses on Factors which can enhance ICT usage

Factor	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Training in ICT	71.2	27.1	0.0	0.0	1.7
Availing ICT facilities	76.3	18.6	0.0	5.1	0.0
Technical support from the experts	66.1	27.1	3.4	3.4	0.0
Drawing a clear ICT strategy	55.9	32.2	6.8	1.7	3.4
Positive attitude towards ICT use in administration	66.1	25.4	6.8	0.0	1.7
Clear policy on ICT use in administrations	67.8	25.4	5.1	1.7	0.0

N=59

The findings presented in Table 4.13 indicate that majority of the head of departments who participated in the study strongly agreed with the results by the

principal and bursars that some of the ways of enhancing ICT usage in school administration was training in ICT (71.2%), availing ICT facilities(76.3%), technical support from the experts (66.1%), drawing a clear ICT Strategy(55.9%), positive attitude towards ICT use in administration(66.1%)and clear policy on ICT use in administration (67.8%).

The findings of the study are in line with that of Olele (2011) who summarized several components of a school effective ICT usage in the administration as introduced by researchers (Levine, 1998; T.Newby, Stepich, Lehman& Russel, 2006). They included : establishing a technology integration committee; developing a school vision and articulating a role for technology in that vision; exploring available technology and assessing ongoing technology implementation efforts; determining training and teacher needs; developing specific objectives and formulating a plan to achieve them; implementing the plan and evaluating the plan.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains summary of the study, summary of findings of the study and conclusions drawn from the findings of the study. Recommendations made from the study findings and suggestions for further research are also presented in this chapter.

5.2 Summary of the study

Information and Communication Technology (ICT) integration in the administration improves the performance, effectiveness and efficiency of management in secondary schools. There is limited research in Africa and specifically in Kenya to identify and address key challenges that stand in the way of adoption and use of ICT in the administration particularly in education sector. The purpose of this study was to conduct an assessment of the usage of Information and Communication Technology in the administration of public secondary schools in Seme Sub-County, Kisumu County, Kenya. Four research objectives were formulated to guide the study. These objectives were; to establish how ICT is used in the administration of public secondary schools, to establish the level of competence of principals in ICT usage in the administration of public secondary schools, to determine barriers to ICT usage in the administration of

public secondary schools and lastly, to establish factors which enhance ICT usage in the administration of public secondary schools.

The study adopted a descriptive survey design to gather data. The sample size for this study was 11 public secondary schools, 11 principals, 11 bursars and 59 heads of departments. Questionnaires for the principals, bursars and heads of departments were used to collect data.

5.3 Summary of findings

The first objective of the study sought to establish how ICT is used in the administration of public secondary schools. The findings revealed that 60% of the principals use ICT to perform some administrative duties .The areas where ICT is used in the administration include; communication to parents and teachers (54.4%), maintenance of records for teachers (36.4%), suppliers, students and non teaching staff, preparation of timetables, students' report forms(27.3%), lesson notes and analyzing students' performance.

The second objective of the study sought to establish the level of competence of principals in ICT usage in the administration of public secondary schools in Seme Sub-County. The findings of the study revealed that majority (55%) of the principals had taken training in ICT while 45% had not taken any form of ICT training. The majority, over 50% of the principals are competent in internet and e-mail, word processing and basic computer operation skills. However, 45.5% have less competence in maintenance, trouble shooting, database and PowerPoint.

The third objective of the study sought to determine barriers to ICT usage in the administration of public secondary schools in Seme Sub-County. Majority (82%) of the respondents agreed that there are various barriers to ICT usage in the administration of secondary schools in Seme Sub County. The barriers reported by the principals, bursars and heads of departments include; lack of training in ICT (90%), unclear ICT strategy(70%), lack of technical support (77.8%), lack of software (70%) ,limited knowledge on how to make full use of ICT (70%)and inadequate ICT facilities (90%).

The fourth objective of the study sought to establish factors which can enhance ICT usage in the administration of public secondary schools in Seme Sub County. The findings revealed that there are various factors that can enhance ICT usage in the administration of public secondary schools. These factors as reported by the principals, bursars and heads of departments include; training in ICT (71.2%), availing ICT facilities (76.3%), technical support from experts (66.1%), drawing a clear ICT strategy (55.9%), inculcating positive attitude towards ICT use in administration (66.1%) and having a clear policy on ICT use in administration 67.8%).

5.4 Conclusions of the study

The study has established that majority of public secondary schools in Seme Sub County use ICT in carrying out some administrative duties. However, a few schools do not use ICT in their administration. ICT is used in communication to

parents and teachers, communication to parents and teachers, maintenance of records for teachers, students and non teaching staff, preparation of timetables, students' report forms and analyzing students' performance. Competence of principals in ICT usage in administration of secondary schools in Seme Sub County ranges from no competence at all to moderate competence. Some of the barriers to ICT usage in the administration of public secondary schools in Seme Sub County include lack of training in ICT, unclear ICT strategy, limited knowledge on how to make full use of ICT and inadequate ICT facilities. In order to overcome the above barriers to ICT usage in administration, ICT usage enhancing factors such as training in ICT, availing ICT facilities, technical support from experts, drawing a clear ICT strategy, inculcating positive attitude towards ICT use in administration and having a clear policy on ICT use in administration can be introduced by the secondary school administration.

5.5 Recommendations of the study

From the foregoing, it is evident that ICT usage in the administration has not been embraced by all public secondary schools in Seme Sub County. In order to improve ICT usage in the administration of secondary schools, the researcher makes the following recommendations:

i. The Ministry of Education should put in place both material and human resources to enhance ICT usage in the administrative process in secondary schools. This could probably be done by tabling a bill in parliament to cater for the facilitation of school administration using ICT at all levels of

education in the country and by asking the Teachers Service Commission to employ computer technicians and experts to provide technical support in schools.

ii. In order to improve the competency of secondary school principals in ICT usage in the administration, The Ministry of Education in conjunction with the Kenya Institute of Curriculum Development should develop an in-service training in ICT for secondary school principals, heads of departments and bursars during school holidays.

iii. Public secondary school administrators should identify specific barriers that are likely to hinder ICT usage in the administration and eliminate them in time.

iv. Public secondary school principals should provide ICT usage enhancing factors such as training in ICT, availing ICT facilities, technical support from experts, drawing a clear ICT strategy, inculcating positive attitude towards ICT use in administration and having a clear policy on ICT use in the administration.

5.6 Suggestions for further research

This study sought to conduct an assessment on the usage of ICT in the administration of public secondary schools in Seme Sub County, Kisumu County, Kenya. Following the findings of the study, the researcher makes the following suggestions for further research:

i. A study on the determinants of ICT usage in the administration of public secondary schools.

ii. A study on the assessment of ICT usage in the administration of public secondary schools in other Counties using a larger sample size.

iii. A study on the assessment of ICT usage in the administration of public primary schools.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

University of Nairobi,

P.O BOX 30197,

NAIROBI.

Dear Sir/Madam,

RE: DATA COLLECTION

I am a postgraduate student at the University of Nairobi pursuing a master's degree in Educational Administration. I am currently carrying out a field research in partial fulfillment of the course. The research is aimed at assessing the usage of Information and Communication Technology in the administration of public secondary schools in Seme Sub- County, Kisumu County, Kenya.

You have been selected as one of the respondents involved in school administration in Seme Sub County. Your responses will be held in strict confidence and used for this research only. None of the information will be published in a manner that would enable any person to be identified. Your cooperation and sincerity in completing the attached questionnaire will be highly appreciated. Thank you.

Yours faithfully,

Edwin Otieno Obungu

APPENDIX II

PRINCIPALS' QUESTIONNAIRE

This questionnaire is designed to gather information about usage of information and communication technology in administration of public secondary schools in Seme Sub County, Kenya. You are kindly asked to respond to the items given as honestly and as accurately as possible. Do not write your name or any form of identification .The information you give will be confidential and will only be used for the purpose of this study. Kindly respond to all items.

Section A: Demographic information

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

2. What is your age bracket? 20-29 years ( ) 30-39 years ( ) 40-49years ( ) 50-60 years ( )

3. How many years have served as a Principal?1-5yrs ( ) 6-10yrs ( ) 10-15 yrs ( ) Others (Specify)……..

4. What is your highest level of education? M.Ed ( ) B.Ed ( ) Diploma ( ) Others

(Specify) ……..

SECTION B: How ICT is used in the administration of secondary schools

5. The following are some of the administrative tasks involving students and teachers in your school using ICT. Using a tick, rate the following on a five point scale. 1. Strongly agree 2.Disagree 3.Not sure 4.Agree 5.Strongly disagree

Administrative task	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Communication to teachers and parents					
Maintenance of teachers' records					
Maintenance of school supplies records					
Maintenance of students' records					
Maintenance of non- teaching staff records					
Maintenance of B.O.M records					

SECTION C: Principals' ICT competence and administration of secondary schools

6. Have you taken any form of ICT training? Yes ( ) No ( )

(b) If yes, what is your academic qualification in ICT? Certificate ( ) Diploma ( )

Others ( )

(Specify)……..

7. The following is a Computer Competence Scale for testing beliefs about competency in computer knowledge and skills. Using a tick, rate yourself on a five point scale. 1. No competence 2.Little competence 3.Not sure 4.Moderate competence 5.Much competence

Computer Programs	**No competence**	**Little competence**	**Not sure**	**Moderate competence**	**Much competence**
Basic computer operation skills					
Maintenance and troubleshooting of computer					
Word processing					
Spreadsheets					
Internet and E-mail					
Database					
PowerPoint					

SECTION D: Barriers to ICT usage in the administration of secondary schools

8. (a) Are there any barriers to ICT usage in the administration of your school?

Yes ( ) No ( )

(b). If the answer to question number 8 is yes, using a tick, rate the following barriers on a five point scale. 1. Strongly agree 2.agree 3.Not sure 4.Disgree 5.Strongly disagree

Barriers to ICT usage in administration	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Lack of training in ICT					
Unclear ICT strategy					
Lack of technical support					
Lack of software					
Limited knowledge on how to make full use of ICT					
Lack of time to use ICT					
Inadequate ICT facilities					

SECTION E: Ways of enhancing ICT use in the administration of secondary schools.

10. The following are some of the ways in which the use of ICT in the administration of secondary schools can be enhanced. Using a tick, rate the factors on a five point scale. 1. Strongly agree 2.Agree 3.Not sure 4.Disgree 5.Strongly disagree

ICT usage enhancing factors	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Training in ICT					
Availing ICT facilities					
Technical support from experts					
Drawing a clear ICT strategy					
Positive attitude towards ICT use in administration					
Clear policy on ICT use in administration					

APPENDIX III

QUESTIONNAIRE FOR BURSARS

This questionnaire is designed to gather information about integration of information and communication technology in administration of public secondary schools in Seme Sub County, Kenya. You are kindly asked to respond to the items given as honestly and as accurately as possible. Do not write your name or any form of identification .The information you give will be confidential and will only be used for the purpose of this study. Kindly respond to all items.

SECTION A: Demographic information

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

2. What is your age bracket? 20-29 ( ) 30-39 ( ) 40-49 ( ) 50-60 ( )

3. How many years have served as a bursar? 1-5yrs ( ) 6-10yrs ( ) 10-15 yrs ( ) Others

(Specify)……..

4. What is your highest level of education? Diploma ( ) Bachelors degree ( ) Master ( )

Others (Specify) …….

5(a) Have you taken any form of ICT training? Yes ( ) No ( )

(b) If yes, what is your academic qualification in ICT? Certificate ( ) Diploma ( ) Others

(Specify)……..

SECTION B: Use of ICT in the administration of secondary schools

6(a). Do you use ICT in carrying out your duties in the school? Yes ( ) No ( )

(b). If yes, the following are some of the administrative tasks involving students and teachers in your school using ICT. Using a tick, rate yourself on a five point scale. 1. Strongly agree 2Agree 3.Not sure 4.Disgree 5.Strongly disagree

Administrative tasks	**Strongly agree**	**Agree**	**Not sure**	**Disa gree**	**Strongly disagree**
Stock taking in the stores					
Maintenance of fee payment records					
Preparation of workers' payroll					
Maintenance of teachers' imprest payment records					
Communication to parents and teachers					
Preparing the school budget					

SECTION C: Principals' ICT competence and administration of secondary schools

7(a). Does your principal use ICT in his/her daily running of the school? Yes ( ) No ( )

(b). If the answer to question 8 is "yes", the following is a Computer Competence Scale for testing beliefs about competency in computer knowledge and skills. Using a tick, rate the principal on a five point scale. 1. No competence 2.Little competence 3.Not sure 4.Moderate competence 5.Much competence

Computer Programs	**No Competence**	**Little Competence**	**Not sure**	**Moderate competence**	**Much Competence**
Basic computer operation skills					
Word processing					
Spreadsheets					
Internet and e-mail					
Database					
PowerPoint					
Maintenance and trouble shooting of computer					

SECTION D: Barriers to ICT usage in the administration of secondary schools

8(a). Are there any barriers to ICT usage in the administration of your school?

Yes ( ) No ( )

(b). If yes, using a tick, indicate the following barriers on a five point scale. 1. Strongly agree 2.agree 3.Not sure 4.Disgree 5.Strongly disagree

Barriers to ICT usage in administration	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Lack of training in ICT					
Unclear ICT strategy					
Lack of technical support					
Lack of software					
Limited knowledge on how to make full use of ICT					
Lack of time to use ICT					
Inadequate ICT facilities					

SECTION E: Ways of enhancing ICT use in the administration of secondary schools.

9. The following are some of the ways in which the use of ICT in the administration of secondary schools can be enhanced. Using a tick, rate the factors on a five point scale. 1. Strongly agree 2.Agree 3.Not sure 4.Disgree 5.Strongly disagree

ICT usage enhancing factors	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Training in ICT					
Availing ICT facilities					
Technical support from experts					
Drawing a clear ICT strategy					
Positive attitude towards ICT use in administration					
Clear policy on ICT use in administration					

APPENDIX IV

QUESTIONNAIRE FOR HEADS OF DEPARTMENTS

This questionnaire is designed to gather information about integration of information and communication technology in administration of public secondary schools in Seme Sub County, Kenya. You are kindly asked to respond to the items given as honestly and as accurately as possible. Do not write your name or any form of identification .The information you give will be confidential and will only be used for the purpose of this study. Kindly respond to all items.

SECTION A: Demographic information

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

2. What is your age bracket? 20-29 years ( ) 30-39 years ( ) 40-49 years ( ) 50-60 years ( )

3. How many years have you served as a Head of Department? 1-5yrs ( ) 6-10yrs ( ) 10-15

years ( )

Others (Specify)……..

4. What is your highest level of education? M.ED ( ) B.Ed ( ) Diploma ( ) Others

(Specify) ……

SECTION B: How ICT is used in the administration of secondary schools

5(a) Do you use ICT in carrying out your duties in the school? Yes ( ) No ( )

(b). If yes, the following are some of the administrative tasks involving students and teachers in your school using ICT. Using a tick, rate the following on a five point scale. 1. Strongly agree 2Agree 3.Not sure 4.Disgree 5.Strongly disagree

Administrative Tasks	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Preparation of departmental timetable					
Preparation of students report forms					
Maintenance of students performance records					
Preparation of lesson notes					
Preparation of examination timetables					
Communicating to members of department					
Analyzing students' performance					

SECTION C: Principals' ICT competence and administration of secondary schools

6(a). Does your principal use ICT in his/her administration of the school? Yes ( ) No ( )

(b). If yes, the following is a Computer Competence Scale for testing beliefs about competency in computer knowledge and skills. Using a tick, rate the principal on a five point scale. 1. No competence 2.Little competence 3.Not sure 4.Moderate competence 5.Much competence

Computer programs	No competence	Little competence	Not sure	Moderate competence	Much competence
Basic computer skills					
Word processing					
Spreadsheets					
Internet and e-mail					
Database					
Powerpoint					

SECTION D: Barriers to ICT usage in the administration of secondary schools

7(a). Are there any barriers to ICT usage in the administration of your school?

Yes ( ) No ( )

(b). If yes, using a tick, rate the following barriers on a five point scale. 1. Strongly agree 2.agree 3.Not sure 4.Disgree 5.Strongly disagree

Barriers to ICT usage	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Lack of ICT training					
Inadequate ICT facilities					
Lack of software					
Lack of technical support					
Negative attitude towards ICT					

SECTION E: Ways of enhancing ICT use in the administration of secondary schools.

11. The following are some of the ways in which the use of ICT in the administration of secondary schools can be enhanced. Using a tick, rate the factors on a five point scale. 1. Strongly agree 2.Agree 3.Not sure 4.Disgree 5.Strongly disagree

ICT usage enhancing factors	**Strongly agree**	**Agree**	**Not sure**	**Disagree**	**Strongly disagree**
Training in ICT					
Availing adequate ICT facilities					
Technical support					
Positive Attitude towards ICT					
Clear ICT policy					
Support from administration					

APPENDIX V: RESEARCH AUTHORIZATION

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email:dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/16/68679/10862**

Date: **10th May, 2016**

Edwin Otieno Obungu
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"An assessment of the usage of Information and Communication Technology in the administration of public secondary schools in Seme Sub-County, Kisumu County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for the period ending **10th May, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kisumu County.

The County Director of Education
Kisumu County.

THIS IS TO CERTIFY THAT:
MR. EDWIN OTIENO OBUNGU
of UNIVERSITY OF NAIROBI, 0-40100 KISUMU,has been permitted to conduct research in *Kisumu County*

on the topic: *AN ASSESSMENT OF THE USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE ADMINISTRATION OF PUBLIC SECONDARY SCHOOLS IN SEME SUB-COUNTY, KISUMU COUNTY, KENYA*

for the period ending:
10th May,2017

Permit No : NACOSTI/P/16/68679/10862
Date Of Issue : 10th May,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 Officers 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

RESEARCH CLEARANCE PERMIT

Serial No. A 9086

CONDITIONS: see back page