RELATIONSHIP BETWEEN INFORMATION COMMUNICATION TECHNOLOGY USAGE AND ADMINISTRATIVE QUALITY OF PRINCIPALS IN PUBLIC SECONDARY SCHOOLS IN HOMABAY COUNTY, KENYA

BY

GILBERT OBUODA MICHAEL OMOLO

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATIONAL ADMINISTRATION

SCHOOL OF EDUCATION

MASENO UNIVERSITY

DECLARATION

DECLARATION BY CANDIDATE

This thesis is my original work and has not been presented for a degree in any other University.

Signature..... Date.....

GILBERT OBUODA MICHAEL OMOLO

PG/PHD/6003/13

SUPERVISORS' DECLARATION

This thesis has been submitted for examination with our approval as university supervisors.

Signature..... Date.....

Dr. Jane Irene Dawo
Department of Educational Management and Foundations
Maseno University

Signature..... Date.....

Dr. James Ochieng' Sika.
Department of Educational Planning and Economics
Maseno University

ACKNOWLEDGEMENT

I hereby acknowledge the following for their immense contribution to my work. My supervisors; Dr. Jane Irene Anyango Dawo and Dr. James O. Sika for mentoring me through this process. Dr. Zachariah Wanzare and Dr. Constantine Wasonga for being the spring board to this PhD study and my fellow student colleagues who encouraged me to soldier on during my low moments. To all lecturers in the department of Educational Administration and Foundations for their direct or indirect input that has shaped this thesis. The library staff for offering necessary assistance whenever I wanted to locate journals and other documents. The entire teaching staff for their support in the process of defending my thesis and their vital input which shaped this research. The County Director of education and sub county education officials for allowing me to conduct research in their secondary schools and Teachers Service Commission for granting me permission to undergo this study process. Maseno University for according me the opportunity to advance academically. I thank my family members Mrs.Teresa Auma Obuoda, Quinter Anyango, Leah Adhiambo, Alfred Omolo, Jenifer Okal, Christine Atieno, the force behind the scenes for their inspiration, continued support and prayers for my success.

To all who contributed to this study I sincerely thank you.

DEDICATION

To my elegant wife Teresa and my children Quinter, Leah, Alfred, Jenifer, Christine, and my grandchildren Shamim, Michael, Gabriel, Eugine and Brightone for their continued support and love.

To my late parents, Alfred and Paulina.

ABSTRACT

In the globalized economies, countries require an ICT literate workforce to enhance participation in the knowledge economy. Education sub-sector in Kenya has embraced information communication technology (ICT) in school management with expectation of value addition, hence optimized organizational outcomes. Studies carried out in various counties in Kenya on effect of ICT entrenchment in individual schools revealed improvement in administration which resulted in good KCSE mean score. In Homabay County, KCSE results dropped by a mean score of -2.4 in the period 2013-2017 for ICT entrenched secondary schools. This drop was more than -1.2, -1.0, and -1.0 realized in neighboring Migori, Kisii, and Kisumu Counties respectively for such schools. Literature revealed need for human relations in ICT work environment and that managers may positively motivate their staff administratively through qualitative interpersonal human relations to improve organizational output. Given that ICT tools do not operate devoid of human environment, this study purposed to establish the relationship between ICT Usage and administrative quality of principals in public secondary schools. Objectives were: determine relationship between ICT-Usage on internal communication, record - keeping, human resource and financial resource management and administrative quality of principals. The study was based on Socio-Technical Systems Theory. The study employed descriptive and correlation research designs. The study population was 102 principals, 102 deputy principals, 102 ICT-Usage teacher-in-charge, 102 school captains, 102 non-teaching staff representatives, 1480 teachers, and 8 SCQASO. Purposive sampling technique was applied in selecting 91 principals, 91 deputy principals, 91 ICT-Usage teacher-in-charge, and 7 SCQASO sampled by saturated method**.** The other 11 principals, 11 deputy principals, and 11 teachers in charge of ICT were involved in pilot studies**.** Simple random sampling technique was used to select 300 other teachers. 30 school captains, 30 non-teaching staff representatives were selected from returned consent forms for interview. 20 principals, 20 deputy principals and 20 ICT teachers in charge were also interviewed. Questionnaire, document analysis, and interview schedule were the instruments applied for data collection. Face and content validity of instruments were ascertained by experts in the department of educational administration. A test-retest method was applied to determine reliability of the instruments. Pearson-r of .72 for questionnaire at a p- value of .05 was considered appropriate. Quantitative data was analyzed through descriptive statistics, ANOVA and regression analysis while null hypotheses were tested by t–test method. Qualitative data were analyzed thematically. The findings were; For ICT usage on communication $X_{1:}$ $Y= 1.1711+0.140X_1E$. Meant that for 1 unit increase of ICT usage, there occurred an improvement in administrative quality of principals by 0.140 units; For ICT usage on record keeping X_2: $Y=1.711+0.092X_2E$. Indicated that 1 unit increase of ICT-usage resulted in an improvement on administrative quality of principals by 0.092 units; For ICT usage on human resource management X_3: $Y=1.711+0.220X_3E$. Meaning that for 1 unit increase of ICT usage an improvement in administrative quality of principals ensued by 0.220 units. Lastly, for ICT-usage on financial resources X_4: $Y=1.711+0.085X_4E$ It meant that an increase of 1 unit of ICT-usage on financial resource management resulted in an improvement in administrative quality of principals by 0.085 units. The study further revealed that use of ICT in human resources management had highest effect in administrative quality of principals. The study findings are useful for generating information about usage of ICT and ways in which it aids administrative quality of principals in secondary schools. It was recommended that there be enhanced use of ICT in internal communication by establishing functional ICT tools, equipment, and infrastructure; that management to entrench staff development orientations and training processes through regular seminars and workshops for principals, deputy principals and the staff who are in managerial positions.

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

AQP:	Administrative Quality of Principals
DPR:	Deputy Principal
EDMS:	Electronic Document Management System
EMIS:	Enrolment Management Information System
ERMS:	Electronic Record Management System
GOI:	Government of India
GOK:	Government of Kenya
HELB:	Higher Education Loans Board
HRM:	Human Resource Management
ICT:	Information Communication Technology
ICT Tcr:	Information Communication Technology Teacher
IT:	Information Technology
KCSE:	Kenya Certificate of Secondary Education
KNEC:	Kenya National Examinations Council
KICD:	Kenya Institute of Curriculum Development
MOEST:	Ministry of Education Science and Technology
MSEs:	Medium Scale Enterprises
NACET:	National Council for Education Technology
QASO:	Quality Assurance and Standards Officer
RTI:	Right to Information
TMIS:	Teacher Management Information System

LIST OF TABLES

LIST OF FIGURES

Figures **Page**

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

In globalized economies, countries require an information communication technology- literate workforce to enhance participation in the knowledge economy. ICT education, is the natural platform for equipping the nations with ICT skills for dynamic and sustainable economic growth. A country that fails to integrate ICT risks serious marginalization on the global scene (MoEST. Strategic Plan, 2006 -2011).

United Nations for Education, Science and Cultural Organizations (UNESCO, 2002) presented Information Communication Technology-ICT as range of technologies that are applied in process of collecting, storing, editing, retrieving, and transferring of information in various forms. ICT therefore, understood as all electronic devices used in broadcasting telecommunication and other electronically mediated information gathering and dissemination processes. Many countries of the world have placed much cognizance on the use of ICT for administration purposes. It brought about organizational change in Italian Manufacturing Firms (Giruri, Torris and Zinovyeva, 2008). In America, National Council for Education Technology (NCET) in 1994 did a survey involving a sample of 371 secondary schools. The findings indicated that 86% of the schools used IT to support a variety of administration, organizational and management tasks. A study by Abdul Razak and Zohora (2012) in secondary schools in Malaysia investigated ICT utilization among teachers and principals of Malaysian schools. It discovered that their expertise and skills were not integrated with educational management or teaching, rather for daily administrative purposes.

School leadership plays a major role in implementation of ICT in schools (Makhanu & Kamper, 2012). Laara (2013) showed that successful implementation of ICT in schools depended on how effective a principal manages change. The impact of ICT in Communication is currently strong with changes occurring in the examination bodies in Kenya. Today the Joint Admission Board for Kenya University and Colleges encourages online applications and revision of courses. National Examination Results -KCPE and KCSE accessed online. Filling of post University entrance forms are currently done electronically. Similarly, in Nigeria, ICT offers fresh hope for quick release of results for evaluation of instructional outcome, and supervision. Thus, issue of delayed results is over (Bassey, Okodoko, and Akpanumoh, 2009).

The rule of communication is designed around comprehensive, integrated information networks, which removes constrains in communication. A case Study of Ford Motor Company, where 400,000 employees were given computers to communicate instantly any time and with anyone, allowed Ford Management to keep in touch with its employees. And the employees readily accessed company information and services. The open communication system broke down historical organizational communication patterns flow. The use of computers redefined how activities such as meetings, negotiations, supervision, and water cooler talks were done (Ukandu, et al., 2014).

Management of secondary schools needs participation in formulating quality programs assisted by ICT in order to improve school performance and foster creativity (Menjo & Boit 2012). According to (Makhanu, 2010), secondary school principals ought to lead the way by comprehensive and concerted commitment in dealing with challenges that result from lack of effective usage of technology to ensure policies, goals, quality programs and expectations of

the institutions are effectively and efficiently communicated for an overall performance. This was a gap which this study addressed by establishing the relationship between ICT usage in internal communication and administrative quality of public schools.

In India, Right to Information (RTI) for accessing official information was bestowed on every citizen. The rights gave Indians leeway to demand voluminous information in pretext of RTI Act. Such demands hampered work efficiency in public offices due to few employees. Hence, need to concentrate on official record management using ICT arose. Since ICT usage was capable of availing required information just with a single click of the button (Robert, 2010).

Digitalizing office records and data management require ICT especially computer software. Secondary schools, like any other organization require Electronic Record Management System. Records should be scanned and developed into an Electronic Document Management System. This saves a lot of time spent in searching for records, thus making easy access of record by a click of the button. This study investigated relationship between usage of ICT in record management and principals' administrative quality. A survey of ICT in Kenyan schools (Leonard, 2009) covered 56 schools in 7 former provinces determined the use and attitude towards ICT in schools. It was reported that few schools had purchased school management software especially modules for examination, timetabling, and accounting. According to Wango (2009), use of computers included the internet and entire information system extended in education in the form of Education Management Information System (EMIS). EMIS is an organized way of collecting, processing and distributing education data for decision making. Students' information and staff details, financial records, policies, curricular, visitors and property maintenance were safely kept by EMIS.

Manduku, Kosgey and Sang (2012) investigating the extent of the use of ICT in education management in public secondary schools in Rift Valley province found out that many secondary schools introduced computers in large numbers by early 1990's. However limited information on usage of computers to facilitate administrative quality of principals in secondary schools in terms of school record keeping management was availed. This constituted a knowledge gap on relationship between usage of ICT in record keeping and administrative quality of principals in public secondary schools. This study, therefore, filled up the gap.

World Bank' report (2007) reiterated importance of the teacher in the effective utilization of new global innovations and practices. It stated that it was not the presence of technology itself that stimulates significant changes in schools. However, without the involvement of teachers and staff, students could not take full advantage of their available potentials. In Nigeria new ICT related tools made institutions and workers more productive, enhanced skills and learning, and improved governance at all level (Abid, (2004). This idea aroused a hunch that same experience be applied in Kenyan schools and workers. This study, established relationship between ICT usage on human resources management and administrative quality of principals.

In Ghana e-filing became the best solution in tax administration (Baokye and Banini, 2007). According to Mbangwana (2007) ICT has shaped African schools and classrooms. Raby (2004), conducted a study in Uganda, regarding utilization of ICT in administration of human resource. The findings revealed that in most secondary schools, it was the responsibility of the

principals. To competently run various administrative tasks, the principals need to focus on current challenges, be ready to embrace new technological resources and utilize ICT for school administration.

In the 21st century, Kenyan educational institutions like in other parts of the world, have become complex organizations thus require tremendous input in terms of resources. As secondary school's educational system is expanding rapidly so are problems of planning, organizing, coordinating, controlling and directing administrative tasks pose huge demand on principal to administer effectively and efficiently. These demands require that educational institutions modernize their tools of trade in order to improve effectiveness in administration.

The government of Kenya has worked towards the realization of transforming all education institutions in the country to be ICT entrenched. The move is shown by the interest on ICT as stipulated in several government policy documents. The policy documents include Kenya vision 2030 (2008), Economic recovery Strategy of Wealth and Employment Creation (2003), National ICT policy (2006), Ministry of Education, Science and Technology (MoEST) strategic plan (2006-2011), MoEST ICT policy (2006), and E- Government strategy (2004).

During principals' meeting in Nairobi, education minister, late Prof. George Saitoti challenged principals to embrace information technology as it was increasingly being introduced globally in schools and aimed at bringing new changes to the education system. Principals as policy implementers and decisions makers, must be ready for the ICT of the 21st century. Use of computer technology in Kenya schools has remarkable support from various fronts in the country. In Development Plan (GOK, 2002 - 2008), it was stated that Kenya planned to make 2500 primary and secondary schools ICT compliant every year. The government intended to initiate an in-service program to train 43,000 teachers by the end of

the programmed period. Since principals are implementers of government decisions, it was evident they were to be equipped with necessary principles in the use of computer technology and reported that educational and training institutions were to respond to the needs of the education sectors by involving user driven courses and curriculum in ICT.

Technology has improved the administration of business and organizations world over. In this information age, businesses and organizations cannot function without computer. ICT has impact in all areas of business especially in several aspects of Human Resource Management practices. Its use impacts significantly in recruitment, training, data storage, data retrieval, and performance management among other aspects. Human resource department is the most functional department in organizations because it deals with production.

The application of ICT on human resource management is known as e-HRM. It refers to a web-based technique in human resource management aspects and functions. Such functions were; e-recruitment, e-selection, e-performance appraisal, e-communication, and e-compensation among other functions (Khashman, *et al.,* 2015). However, human managerial characteristics still drive employees into quality performance. The common trends of human centric systems are reducing in establishments. The versatile, popular, advent, and efficient technique is computer centric module operations. This module improves efficiency, reliability, effectiveness, performance and other characteristics of modern-day commercial operations. It increased and renovated financial structures both in quality and quantity (Ashrafi and Murtaza, (2008).

Kisirikoi (2015) undertook a case study that reported an improvement from 6.2 to 8.4 for schools using ICT- in instructions during the period 2007 - 2013. According to (Kombo, 2013), ICT is expected like in other countries to enhance learning hence better school results.

Many studies have linked use of ICT to positive outcomes like improved teaching and learning, increased productivity, improved record keeping, and prompt communication with stakeholders (Mutuma, 2005). Therefore, the big question: Was there a relationship between ICT usage in human resources management and administrative quality of principals in public secondary schools in Homabay County?

ICT allows finance to function on global level. Financial markets are thought of as the first organized, global information markets operating through network of computers. In the absence of ICT, markets could not react to global developments and finance companies could not consistently require inflow at the same time as their competitors. Through internet continuous access to credit scores and ratings to all tenders, insurance companies, and businesses which need financially responsible customers became possible. Application of ICT on accounting practices in India became fundamentally important and a concern to all business enterprises and a prerequisite for local and international competitiveness. Usage of ICT changed ways in which accounting practices and corporate relationships were organized worldwide. (Gadamsetty, 2013). Web services and e-services enabled the revenue department to provide successful e-services to public in England (Kennewell, Parkinson and Tanner, 2007).

Many studies revealed that ICT enhanced quality in management due to expected efficiency on the other hand some studies concentrated on the machine automation aspect of the work in institutions that was done by staff who were IT experts; secretaries, accountants, bursars and account clerks (Abu, 2011). Although many studies have been done on ICT application on general administration of schools, a few studies are on ICT application in managerial aspects-

such as financial resource management and relationship with administrative quality of principals. This constituted a gap. This study, brought in ICT usage in management of financial resources to enable principals perform in administrative tasks in order to achieve an overall institutional goals and objectives.

Panel inspection report (2012) by the County Quality Assurance and Standards (CQASO) recorded that most schools kept computers in stores. This report raised the question as to whether the technology in schools were of any benefit to the principals' desire to offer quality administration especially in areas of internal communication process, record keeping, human resource and financial resource management. The report further confirmed that there was a problem and adduced evidence of only 13 secondary schools out of 53 were ICT compliant, in both Homabay and Rangwe Sub-counties, 5 out of 31 secondary schools in Rachuonyo East, 5 out of 33 schools in Mbita, 9 out of 53 schools in Rachuonyo North, 6 out of 44 schools in Rachuonyo South, 6 out of 33 schools in Suba, and 3 out of 43 schools in Ndhiwa. This showed very low percentage with only 15% of secondary schools in the County had integrated ICT in school administration. Due to the above reasons and concern, Homabay was suitable for the study.

Table 1.1 below compares KCSE mean score of ICT entrenched and non-ICT entrenched secondary schools in Homabay County and its neighboring Counties - Migori, Kisii, and Kisumu. The ICT-entrenched schools are all boarding thus offer comparability of data of KCSE results.

Table 1.1: KCSE mean score between ICT- entrenched and non- ICT entrenched secondary schools in Homabay, Migori, Kisii, and Kisumu Counties

Years	HOMABAY ICT	Non-ICT	MIGORI ICT	Non-ICT	KISII ICT	Non-ICT	KISUMU ICT	Non-ICT
2013	7.5	5.1	6.9	5.4	7.1	5.9	6.9	5.1
2014	6.9	5.2	6.1	5.3	6.9	6.1	6.5	5.7
2015	7.1	4.9	6.5	5.7	7.4	5.9	5.9	5.9
2016	5.0	4.1	5.3	4.4	5.9	4.7	5.2	4.9
2017	5.1	4.1	5.7	4.6	6.1	4.9	5.9	5.2

Source: Sub County offices

KEY: ICT- entrenched schools **NON-ICT**- Non-ICT- entrenched schools

In Homabay County, a preliminary survey data revealed that County dropped considerably as compared to its neighbors Migori, Kisii, and Kisumu in respect of KCSE mean standard score of 2013 and 2017. This was against expectation of ICT-Usage for improving outcomes. Nevertheless, ICT-entrenched schools' KCSE outcomes, Homabay County dropped by -2.4, Migori 0.4, Kisii 1.0, and Kisumu at 1.0. Over the same period, Homabay ICT-entrenched schools dropped more than non-ICT-entrenched schools by 1.4, Migori by 0.4, Kisii 0.0, while Kisumu rose by 0.9. The explanation was a rider for comparison of KCSE results posted by ICT entrenched and non- ICT entrenched schools in Homabay county and its neighbor versus administrative quality of principals. It gave an impression that use of ICT never added any value to the results in Homabay county. Performance of ICT is driven by the human component of management hence the need to investigate relationship between ICT-Usage in internal communication management, record-keeping management, human resources management and financial resource management and administrative qualities of principals. Hence a hunch for this study.

1.2 Statement of the problem

ICT entrenchment in management of institutions is expected to lead to optimized organizational outcomes. However, in Homabay County KCSE results of ICT entrenched public secondary over the year 2013 and 2017 indicated a drop of -2.4 in mean score greater than the drop indicated in Migori, Kisii, and Kisumu Counties, of -1.2, -1.0, and -1.0 respectively. In addition, non-ICT entrenched secondary schools in Homabay had a drop-in performance that was less than the ICT entrenched secondary schools, there by negating the expected value addition attached to ICT-usage. KCSE result being key indicator of quality total sum of all administrative and managerial activities in school setup, the big drop in Homabay County raised concern to education stakeholders. Due to this, it was important to consider the quality of principals' human characteristics as these administratively inspire the staff who handle the ICT tools in a school for achievement of the expected objectives. Being the manager, principals directly interact with teachers, deputy principal, students, and employees to complete an environment where ICT does not operate devoid of human influence in respect of internal communication, record keeping, human resource, and financial resource. Therefore, this study examined relationships between ICT Usage regarding internal communication, record keeping, human resource management, financial resource management and administrative qualities of principals in Homabay. In addition, reviewed literature indicated that managers may take advantage of their human relation tactics to positively motivate their staff to behave in a desirable way for optimal organizational outcomes. They realized this through quality interpersonal relations exhibited in a blend of administrative cumulativeness, delegation, availability, assertiveness, accessibility, visibility, dependability and open-mindedness. Thus, variations in results in scenario, even with similar

quality personnel, same tools by different managers of different personalities. This study, therefore, examined relationship between ICT usage and administrative qualities of principals in relation to communication, record keeping, human resource and financial resource management.

1.3 Purpose of the study

The purpose of the study was to examine relationship between ICT usage and administrative qualities of principals in Homabay.

1.4 Objectives of the study

The objectives of the study were to:

1. Determine relationship between ICT usage in school internal communication management and administrative quality of principals in public secondary schools;
2. Establish relationship between ICT usage in record keeping management and administrative quality of principals in public secondary schools;
3. Establish relationship between usage of ICT in human resources management and administrative quality of principals in public secondary schools;
4. Determine relationship between ICT usage in financial resource management and administrative quality of principals in public secondary schools.

1.5 Hypothesis of the study

This study, was guided by the following hypotheses:

H01: There is no significant relationship between ICT usage in school internal communication and administrative quality of principals.

H02: There is no significant relationship between ICT usage in school record-keeping and administrative quality of principals.

H03: There is no significant relationship between ICT usage on school human resources management and administrative quality of principals in Homabay.

H04: There is no significant relationship between ICT usage in school financial resource management and administrative quality of principals in Homabay.

1.6 Assumptions of the study

The assumptions guiding the study were that:

i. Respondents had positive attitudes in integration and application of ICT in schools.

ii. All Principals had directly interacted with ICT in their schools for the said areas of administration for the last 5 years.

iii. All School captains were elected and validly represented the general views of student population.

1.7 Scope of the study

The scope of the study was:

The scope of the study was limited only to public secondary schools where ICT was entrenched and controlled by the management.

1.8 Limitations of the study

The study was guided by the following limitations:

1. Only schools with ICT infrastructure were included in this study.

2. Information communication technology formed key component of administration functions.

1.9 Significance of the study

Findings may encourage Principals and board of management (BOM) to avail suitable infrastructure and accessories for ICT integration. It may be useful in improving principals'

ICT skills and knowledge to impart better administrative prowess in regard to communication, record keeping, human resource management, and financial resource management. Findings may also generate data for the curriculum developers – (KICD) and universities for the development of IT curriculum for teacher training purpose. In addition, findings inject new body of knowledge to existing contributions by providing more information through its contextual framework of secondary schools in Homabay County. The study shall arouse curiosity in scholars and researchers to embark on conducting further research on other administrative aspects in other counties in the republic.

1.10 Theoretical framework of the study

Available literature on relationship between ICT usage and administrative quality of principals was derived from Socio-Technical-Systems Theory (Erick, Ken, and Fred, 1951). This theory regards the social aspects of people, society, and organizational structures and processes. It is about joint optimization in both excellence in technical performance and quality in peoples' work life. It is based on designing an organization where the relationship between social elements and technical elements that lead to emergence of productivity and wellbeing. A school is an open socio-technical system composed of four interdependent sub systems such as structure, technology, task, and people. The sub systems interact with external environment in such a way that a change in one area leads to changes in all others (Waweru, 2008). According to Owen and Valesky (2011), organizations are structured, equipped, and staffed appropriately to accomplish missions. An organization should have technological resources and people to ensure tasks are achieved. Four internal organizational factors such as; task, structure, technology, and people are variables that are highly interactive. Each factor tends to shape and mold the others. Significant change in one

resonates in some adaptation on the other factors. Whereas technology is developed outside school's system, the school should adopt it smoothly, and easily to avoid resistance to change. This theory guided this study due to its all-encompassing nature which exposed total picture of factors affected by ICT usage in the administrative quality of principals in secondary schools, as regards internal communication, record keeping, human resource management, as well as in financial resource management.

1.11 Conceptual framework

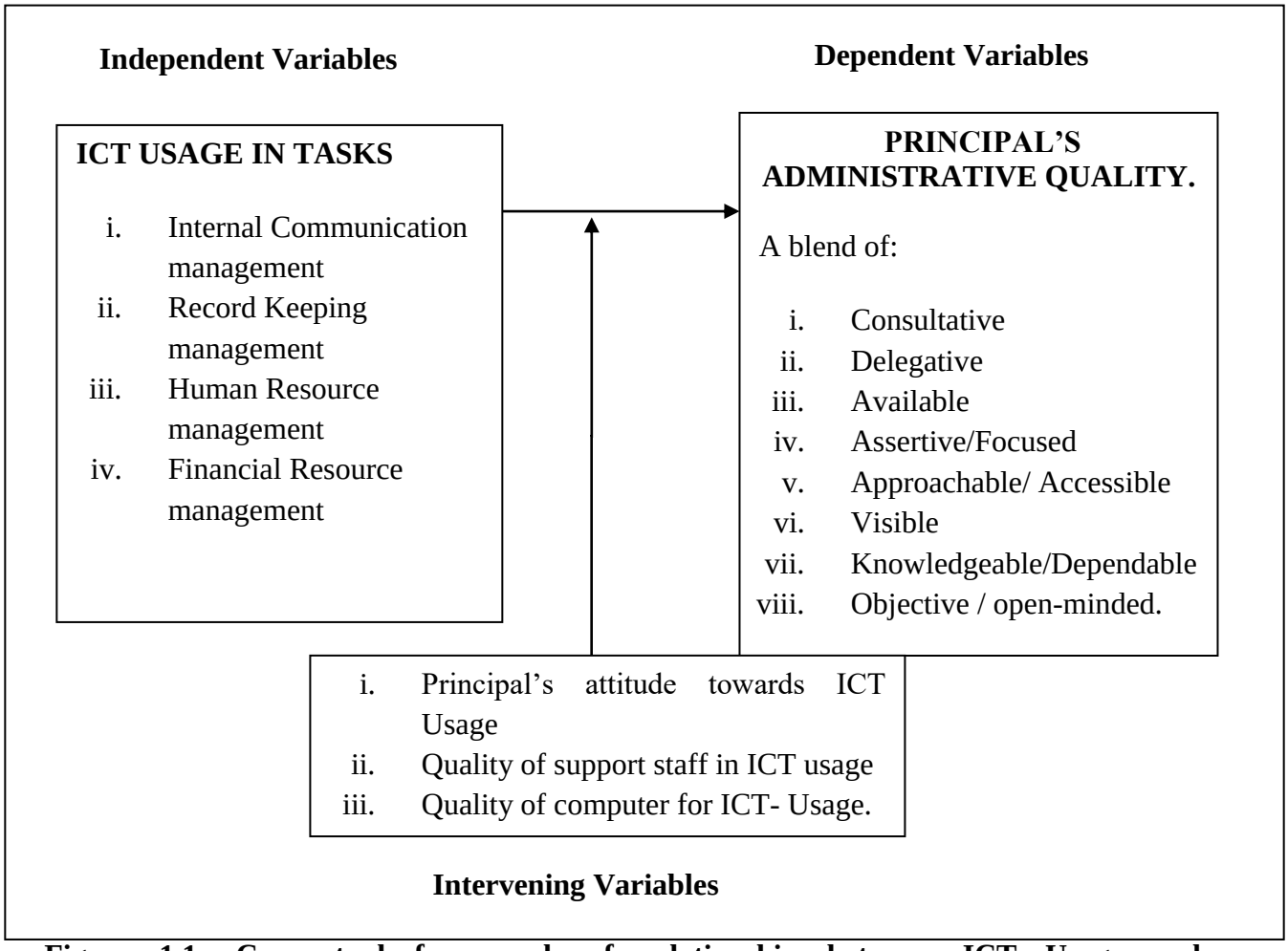


Figure 1.1: Conceptual framework of relationship between ICT Usage and administrative quality of principals.

Conceptual model presented variables and relationship as translated into a visual picture which illustrated connections between the independent variables, dependent variables and intervening variables (Willis and David, 2009). Independent variables were communication, record keeping, human resource and financial resource management. Dependent variables were principal's high administrative quality exhibited in a blend of characters and Intervening variables were principal's attitude towards ICT, quality of support staff in ICT usage and accessories.

In Figure 1.1, the dependent variables, the 8 parts are a "WHOLE" not bits of the principal. Therefore, the principal ought to exhibit all of them in order to realize quality administration that will in turn influence the human resource to work towards an overall achievement of school goals and objectives. Improved practices in ICT utilization on the management of internal communication, record keeping, human resource, and financial resource, will influence dependent variable which is administrative quality of principals in performance of managerial and administrative tasks in school. The principals' positive attitude toward use of ICT, quality of staff in ICT usage and quality of computers for ICT usage combined, improve practices in utilization ICT on independent variables and eventually improvement on administrative quality of principals is realized.

1.12: Operational definition of key terms

Administrative Quality of principals: Summation of human characteristics exhibited by a principal in respect of facilitating school goals achievement through human interaction-consultative, delegative, available, assertive and focused, approachable and accessible, visible, knowledgeable and dependable, and objective / open minded.

Communication Management: The management of internal communication process and procedures in an organization to enable conveyance of clear and appropriate information vertically- from policy makers down to implementers and horizontally-within same levels of operations such as departments.

Financial Resource Management: These operations whose objectives are sourcing for funds for school activities, ensure lawful and efficient use of the available funds.

Human Resources Management: Overall provision of direction, guidance, growth management, operation, and maintenance of human resources system.

ICT-entrenched school: Are schools that were already using ICT for internal communication, record keeping, human resource, and financial resource management by the year 2013.

ICT usage: Making use of ICT in various tasks in school administration.

ICT- Usage Teacher in-charge: A teacher in a position to co-ordinate all ICT activities in a school with formal computer training (sometimes, the teacher of computer studies) who oversees both teaching and support staff in this respect.

Non-teaching staff representatives: Staff representative employed by the school whose work traverses from manual jobs in the office (if need be) to open ground in the school compound.

Record keeping Management: These are operations aimed at collecting, collating, storage, and retrieval of varied information necessary for school administration.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature on relationship between usage of ICT and administrative quality of principals was reviewed under sub- headings: relationship between usage of ICT for internal communication management and administrative quality of principals, relationship between usage of ICT for record-keeping management and administrative quality of principals, relationship between usage of ICT for human resources management and administrative quality of principals, and relationship between usage of ICT for financial resource management and administrative quality of principals.

2.2 ICT usage for internal communication in management and administrative quality of principals

Implementation of ICT transforms existing school system by raising efficiency and effectiveness in administration, teaching and learning hence increase in students' achievements. Papaioannon and Charalambous (2011) reported that ICT in schools motivated students, stimulated interests, increased self-esteem and self-confidence, increased creativity, allowed inter-activity, enhanced critical thinking, and increased attainments among other benefits. Laara (2013) reported that ICT enhanced teachers' efficiency and enthusiasm, encouraged planning and operations, helped in adopting student-centered teaching strategies, reduced workload, and improved relationship between teachers and students.

It is a common practice in institutions and organizations for managers to spend a major percent-ideas orally and in writing or symbols of their language, codes, graphic devices, electronic impulses and other media in expressing ideas. Communication served as a link

process where parts of a system are tied together. Communicating is a managerial function because it presents basic human characteristic required by all managers in performance of their jobs. In fact, all managerial functions involve the human element. In this 21st century, management of information is centered around computers and other non-human devices. The interface between human beings and computers has become an intriguing issue- for the present, it is assumed that managers shall continue to manage computers rather than be managed by computers (Bebell and O'Dweyer, 2004).

In education, ICT was regarded as a combination of technologies for collecting, storing, processing, communicating, and delivery of information related to teaching and learning processes (Ubani and Njoku, 2006). On the other hand, Onuma (2007) considered ICT as harnessing of the process, the methods, and the products of electronic and communication-related technologies for enhancing the productivity; spread and efficiency of a set of programmed activities geared towards the achievement of clearly determined goals. Edem (2005) confirmed that communication was an ingredient which made administration possible in an organization. In this respect, Idowu (2005) reported that, as teachers received motivation to get things done in the school environment through the principals' good communication channel; so, would principals realize the school goals. Therefore, good communication process aided attainment of qualitative administrative system.

School as an open system, always interacts with the environment. It receives inputs from external environment in form of human and material resources, processes them and empties same into the environment. This makes administration much complex. Functional characteristics of principals' administrative effectiveness include decision making, planning, communication, influencing, coordinating, and evaluation (Mbipom, 2000).

Huge rise in number of students in schools and multiplicity of the programs, coupled with the complexity of administering a given secondary school require principals to handle large volumes of data which must be processed to provide information to the education stakeholders and general public (Adeyemi and Oaleye, 2010), thus the value of communication. Deficiencies associated to storage, preservation and presentation of large volumes of information in paper form made administration tricky (Ekpe, 2009). In recognition of this fact, Adeyemi and Olaleye (2010), like Ekpe (2009) recognized information processing as a correlate of principals' administrative quality in secondary schools. They argued that the more knowledgeable, skilled and up to date the principal was in utilizing ICT, the more likely he was to achieve the objectives of education. This underscored the reason why quality school administration must be hinged upon principal's ability to effectively communicate.

Research by Etudor-Eyo, Ante and Emach (2011), in Nigeria obtained data from 396 school administrators. Study finding revealed existence of high correlation between use of ICT and effectiveness of the administrators' communication and a significant positive relationship between administrators' use of ICT and effectiveness in communication.

Importance of information in every human endeavor could not be over emphasized. Everyone expected a reliable, accurate, complete, precise, and sufficiently up to date information. Achievement of this fit posed problems until the time of ICT revolution. In educational setup, information was crucial for daily operations. Information provided a base for knowledge and understanding about what took place within internal and external environments of the school. In response, school administrators were to learn the art of getting information, storing information, and retrieval of the same as and when desired for effective communication. ICT equipment and application - support helped in disseminating information accurately as

possible for the purpose of enriching knowledge, developing communication, decision-making, and problem-solving ability of the user (Mangal and Mangal, 2009).

Task of maintaining effective machinery for a functional school system demanded a great deal of administrative competencies in principals: - Principals are expected to coordinate human resources for effective administration of schools. However, school as a social system, could not be shielded from effects from the society within which they operate.

Innovativeness in the 21st century, has made ICT a major tool for communication and exchange of information among individuals, organizations, governments and corporate bodies. Traditionally, secondary school's administration was dominated by use of manual operational methods. Secretaries and typists – seated behind outdated typewriters were common scenes in principals' offices. However, increased student population, resources, programs and complex goals and objectives, required use of information system technologies (Anamuah, J. 2009). Many of the literature reviewed show that machine automation aspect of work in institutions focus mostly on IT experts, secretarial activities. This study roped in the ICT-Usage in school communication process to enhance principal's administrative quality in order to realize improved performance in all managerial sectors in school. The researcher intended to find out whether the finding that there was positive relationship between ICT usage and administrators' effective communication process in Nigeria could be applicable to Kenyan school administrators. On that basis, this study, investigated relationship between usage of ICT in internal communication and administrative quality of principals.

2.3 ICT usage in record–keeping and administrative quality of principals

Importance of information in every aspect of human endeavor could not be exaggerated. People expected information to be reliable, accurate, complete, precise and sufficiently up to

date. Making up to this fit posed major problem up to the time of revolution in information communication technology (ICT). In educational setup, information was crucial for daily operations. School records were of great importance in the administration thus required attention for effective and efficient administration.

Keeping of records in school is entrenched in Public Education Act 1974, with penalties for those who fail to keep them. Records were information banks containing what has been done or known, what is to be done and how things should be done (Kok and Nwiyi, 2006). They provided sources of information to schools and larger society. Without record-keeping knowledge and learning would be hampered (Amarinze, 2006).

Information provided base for knowledge and understanding of the environment. Administrators must be able to learn the art of getting information, storing and retrieval of the same as and when desired. ICT facilities assisted principals in meeting tasks of record keeping in the areas of curriculum instruction, school business operations, and school community relationship. Computers stored thousands of files in its memory (Atsu in Muosu 2014). Establishment of ICT facilities in schools, colleges, universities, and other tertiary institutions in Nigeria was for educational and research purposes. However, managers and policy formulators realized potential of ICT equipment in the areas of educational administration; such areas as admissions, examination, accounting, inventory management, and library materials management, and student record keeping. ICT facilities were suitable for information processing tasks due to speed, accuracy and ability to store large data in accessible form. Ogechukwu and Oswagwu (2009), observed that school activities had grown in size and scope, hence computer technology provided alternative mechanism for administrators to keep abreast with increased demands for documented information.

In Kenya, needs assessment survey result, established that, with exception of KNEC, TSC, and HELB, staff capacity to use electronic based systems remained low and manual processing of data was carried out at all levels of the ministry of education science and technology (GOK, 2005). Therefore, need for school administrators to develop sufficient knowledge of computer basics such as word processor which helped in the production of high-quality documents, spreadsheet for arithmetical operations such as analyzing examination and preparing report forms and data bases for storing, manipulating and retrieval of data.

Important records like students' grades ought to be recorded in fashionable way and readily accessible. ICT hastened processing of examination data for massive numbers of students and announcement of results timely. In this case, computer system in comparison with manual system produced accurate student, personnel, and financial records (Tinio, 2013). Use of computers in administration reduced time spent on clerical work tasks, production of accurate information, and improved timely generation of reports, facilitated decision- making process and preparation of timetables.

In India, right to information (RTI) for accessing official information was bestowed on every citizen. The government and other civil societies showed ingenuity in promoting awareness about the RTI (Roberts 2010). This right gave lee way for people and activists to demand voluminous information in the pretexts of RTI Act. Such demands hampered working efficiency of public offices due to limited number of employees required to manually search for needed information. Therefore, it was prudent to use ICT on official record management. ICT usage made information readily available just with a single click of the button.

Information provider survey (GOI, 2012) report, showed that 38% of PIOs said that record management system contributed to delay in processing RTI requests. Seventy nine percent of PIOs observed that collection of information from the field officers was a source of delays. Weak record management system and absence of critical field level information at higher levels of hierarchy was also reported (IJMIE, 2012). Digitalization of office records and data management requires ICT especially computer software. In regard to the observation above, secondary schools are just like organizations that require Electronic Record Management System (ERMS). This system requires that all records are scanned and developed into an electronic document management system (EDMS). It saved time spent in searching for records and aided instant access of records.

Contrary to the above information, many schools in Homabay County are not ICT-entrenched hence use old ways of keeping records especially in hard copies which are voluminous and consumes large space for storage, and a lot of time for retrieval. This study, investigated whether ICT–entrenched schools used technology in management of school records, and whether or not the usage of the ICT in the management of records, and whether usage of ICT in management of school record had any relationship with administrative quality of principals; in regards to reduction of time spent in clerical work, production of accurate information, generation of reports, preparation of time tables, and decision-making process.

2.4 ICT usage on human resource management and administrative quality of principals

Human resource management involves such function of attracting, developing and retaining sufficient number of qualified and committed employees to perform activities necessary to achieve organizational goals. Human resource managers were responsible for putting up programs of activities and creating work environment which generated sufficiency and

employees' satisfaction. Overall purpose of managing human resources was to ensure organizations achieved success through the people (Coal, G. 2003). Two major concerns for human resource management were for people and performance. The difference between organization that performs well and another that performs poorly relied on quality of staff. Keys to performance of staff were motivation and commitment. In addition, to attract, retain, and motivate employees, human resource managers' concern was to develop an appropriate culture in order to make employees feel that their contributions valued.

As concerns performance, an organization should ensure each employee makes a positive contribution of individuals and teams in improving organizational performance. This requires the right skills and attitudes are developed in the employees and proper processes for performance management are adopted (KESI, 2011).

Human resource management plays several roles as policy formulation where general statements or understandings are made which guide the thinking and actions of individuals in an institution. Policies delineate the boarders within which decisions are made in order to ensure consistency. Hence, when formulating policies staff involvement is vital for ownership and smooth implementation process.

As the head of an institution, principals are tasked with responsibility of advising the BOM, teachers, students, non-teaching staff and other stake holders on recruitment, employees' rights, responsibilities, career progression and disciplinary procedures, (Armstrong, M. 2001).

Vernon (2001) stated that ICT was applied in several spheres: - in health delivery, engineering, industry, business, politics, and governance, arts, science and education among others. Abdul and Zohora (2012), in their descriptive study, investigated ICT utilization

among teachers and principals in Malaysian schools. Quantitative research method of study was employed with representative sample of 296 teachers, supervisors and principals randomly sampled. Finding revealed that 84% of teachers did not know about existence of national ICT policy, 80% of the schools had no ICT policy, though ICT facilities were available. Many teachers had basic skills in ICT usage. Non the less, their expertise and skills were not integrated in educational management, teaching or classroom purposes rather used for daily administrative purposes. Since this study was carried out in a developed nation, similar research should be conducted in Kenya which is developing. This study used both descriptive and correlation research designs different from quantitative design used for the study in Malaysia. In addition, the principals and teachers were sampled by saturated sampling method from the 7 strata-the sub-Counties and SQASO were purposively sampled due to their roles in the assessment of ICT usage for various aspects of school administration. In this regard, the study investigated relationship between ICT usage in human resources management and administrative quality of principals.

A study by Telem et al., (2011), a case study on impact of computerization of school administration-on principals' role in Hougang, North Zone of Singapore, revealed that ICT assisted in streamlining administrative processes in human resource management. This study observed that teachers referred to big log books to identify available rooms for booking, those who booked them and period the rooms were booked. ICT helped in communicating the available information for the staff instantly as they logged in. According to (Clifton, 2007), school developed personnel information system: to store personnel details - names, numbers, date of birth, educational qualifications and others in order to provide base for decision

making in every area of personnel work, examination and health. Advent of micro-ICT equipment increased the process of computerization in personnel records maintenance.

Information technology (IT) played pervasive role in human resource management. It enabled combination and configuration of data to create distinctly new information for making quick decisions. IT network necessitated communication between persons in distant workplaces. Use of ICT encouraged human resources to operate at best possible manner, to reach competitive edge in order to increase organizational efficiency and speedy increase in productivity. This became a boon for human resource management. Human resource departments were armed with tremendous information to assist other departments to access for purposes of making decisions. It tremendously reduced administrative burden and costs. The technology help in facilitating interactions between employees in different departments and inter-departments thus help in building teamwork.

To effectively use IT, more technical and professional knowledge must be acquired by both current and new staff. This needs educational training for staff and executives to make them sufficient and to accept challenging and complex tasks which will lead them to acquire problem solving skills. Usage of ICT in managing human resources will change the workstyle of traditional nature because the decision support system will help in making quick decisions by front line supervisors thus lessening bureaucratic tendencies (Medeiros, 2012).

For a principal, running a school, managing human resources and school-community relationship; and other special services became quite taxing and time consuming (Ekpe, 2009). Therefore, they need to rise to challenge and be ready to adopt the new technological resources and services for quality school administration.

A study by Abu Eid (2011), on efficiency of information technology and its role in management of human resources electronically was carried out within higher education sector in Gaza. This sector represented ideal model to study changes which contributed to service and development of society, focusing on creativity, innovation and advancements of science based of quality and equality of advancement to reach contemporary level. Findings revealed that improvement of some organizations rose to encouraging levels after introduction of modern technology. This study, therefore, used Principals to determine the relationship between the ICT usage in various administrative tasks and administrative quality of principals in Homabay.

Atallah (2016). aimed at establishing the relationship between electronic human resource management and organizational development in Gaza strip. Study used descriptive and analytical approaches. It had targeted population of 630 employees and a sample size of 308 sampled via random sampling procedure. Comparatively, this study, used sample size of 91 principals, 91 ICT-Usage teacher in-charge, 91 deputy principals, 7 SCQASO sampled via purposive sampling method. While 30 school captains and 30 workers representatives sampled from consent forms. Whereas, the study in Gaza answered the question: How effective was IT in management of human resources electronically? This study, answered the question: - Was there relationship between ICT usage on human resource management tasks and administrative quality of principals in public secondary schools?

According to (Khashman, *et al.* 2015), study was done to identifying impact of electronic human resource management practices on business performance in Jordanian telecommunications sector, specifically in e-recruitment, e-selection, e-training, e-performance appraisal, e-communication, and e-compensation. Study target group were

people holding supervisory positions and employees of three companies. The study gave suitable base for comparison for the current study which focused on usage of ICT in four dimensions of administration-communication, recordkeeping, human resource management, and financial resource management in relation to administrative quality of principals. The study population consisted of 91 principals, 91 ICT - usage teacher in-charge, 91 deputy principals, 7 SCQASO, 30 school captains, and 30 workers representatives. Correlation and descriptive study approaches were used for this study to achieve the research objectives. Whereas, (Khasman, et al. 2015), study used only questionnaire as instrument for data collection, this study used three different instruments to collect data. They were questionnaire, interview guide, and document analysis.

The literature reviewed on the human resource management focused more on effectiveness of IT on management of human resource electronically in different fields, institutions and organization. However, this study, differently realized the fact that machines do not work in isolation without human beings' input. Hence the value of how management influences the handlers (operators) of these machines to enhance performance of human resource. The study, therefore, investigated the relationship between ICT-usage on human resource management and administrative quality of principals.

2.5 ICT usage in Financial resource management and administrative quality of principals

Finance resource management refers to effectiveness and efficiency in management of funds to achieve the goals of a company. Roberts and Sikes (2011), stated that as part of scheduling and control of finances, budgeting process in schools provided numerous information sources

which were made available through ICT inclusion in school financial resource management system.

According to (Makhanu and Kamper, 2012), many secondary schools' executives exploited technology in forecasting and controlling finances significantly and enhanced discipline in managing resources. Secondary schools receive funding from government, parents and many other sources, hence, a need to investigate whether the executives exploit the technology towards forecasting and control of such finances. This was a hunch which this study wanted to establish.

ICT became useful in recording and scrutinizing data in management of school finances in such aspects as budgetary provisions, expenses, fees payments and accounting, (Ngugi, 2012). Makea, Role, and Nyamboga (2011), observed that financial management system would be simpler with adoption of ICT. Subsequently, (Wagithimu Muthee, and Thunguri, 2014) supported, the fact that ICT was a factor in advancing financial management information system for schools. It made data available to guardians, learners and government authorities. Application of ICT had potentials for increasing school accountability, transparency, and participation among stakeholders (Hennessy, 2010). ICT could help school principals in the decentralization and centralization of problems by providing revenue and expenditure data readily to the users. Grey (2005), conducted a study on application of ICT in finance administration of firms in London. Many institutions had software package which helped in producing statutory accounts and reports for bankers and management as well daily control of institutional finances. Such software was Sage with modules to manage payrolls and debts and spreadsheet for cash flow management. ICT provided efficient and safer ways of carrying out financial transaction within shortest time possible. Principals were encouraged to adopt

use of ICT in paying staff, making orders for supplies (Cheryl, 2005). By using IT in such activities, principals shall gauge how suitable the school was financially.

According to (Ashrafi and Murtaza, 2008), emergence of ICT and e-governance improved efficiency and effectiveness in financial management compared to traditional manual system. It enhanced industries and organization development and maintenance of a competitive edge in global market. Razae, Elam and Sharbatonglie (2009), in their study, observed that different records of purchases, budget, grants administration, cash flow, audits, and other financial transactions ought to be properly documented. Study revealed that such information was stored in hardcopies. However, with introduction of ICT, availability, accessibility, and integration in financial sector enabled accountants and financial administrators to process all transactions online via e-accounting system. This system allowed transactions to be captured, measured, recognized, and reported electronically.

According to (Gadamsetty, 2013), the biggest impact of ICT was on accounting. Companies used computerized system to track and record financial transactions properly and accurately. Manual recording of business transactions on ledgers, papers, and spread sheets were translated and computerized for quick and easy presentation. Prior to 1960, the accountants were perceived as bookkeepers whose responsibility was to ensure records were kept. They continuously fought war of losing and failure of records. Computers, therefore, presented efficient means of keeping the books, and accorded accountants quick access to financial information for reporting purposes.

Attom (2012), observed MSEs thrived whenever their business processes were recorded and reported timely. Sound ICT system guaranteed safe medium of financial information delivery. It created conducive atmosphere for integrating financial transactions with help of accounting

software which generated financial report which otherwise could have been difficult to prepare without the ICT. According to (O'Brien and Marakas, 2010), accounting information system was widely used in Business. Computer based system recorded and generated reports on cash flow through an organization and produced important financial forecast of future conditions. ICT, therefore, contributed in eliminating problems faced by MSEs in generation of accurate accounting information. Attom B. E. (2012), explained that ICT created an enabling atmosphere for integrating financial transactions using accounting software which generated financial reports for decision making. He further reported that 70% of the MSEs used ICT in their financial accounting report.

Yishan, Niklow (2011), emphasized the fact that competitive advantage of various financial organizations greatly increased due to ICT. And that ICT became useful strategy and tactic tool for financial organizations in regards to aspects administration, human resources, operational management, strategic management, procurement, accounting, and financial management. In connection with the above information this study, determined relationship between usage of ICT for financial management and administrative quality of principals.

Financial management concerns financial resources and their effective usage towards achievement of the organizational goals. Related aspects of financial management include principles for implementation, raising funds, expenditure, among others (Int. J. Info. Sci. and Sys. 2015, 4(1): 1-14). According to (Wagithumu, Muthee and Thinguri (2014), ICT was an important factor in advancing financial management information systems for schools. It readily provided data to guardians, learners, and government authority. Rrazae, Elam, and Sharbatonglie (2009 also observed that with introduction of ICT and its integration in financial sector, accountants and financial administrators enabled to process transactions

online via e-accounting systems. This practice overhauled all records and financial transaction whose documentation was manual and cumbersome to retrieve.

Introduction of ICT made schools take advantage of electronic banking which allowed interaction with bank account records, time saving, and ensuring payments were made and received, (Grey, 2005). In school setup, ICT was widely used in financial management. Accounting software and spreadsheets such as MS Excel were used in financial accounting (Karl, 2000). School finances were mostly managed by accountants, bursars, accounts clerks, and secretariats since they were handlers of machines. Principals the chief administrator with authority to incur expenditures were subjected to mercy of his staff - who could provide correct or incorrect financial information or reports.

Mangaire (2013), observed that many secondary schools in Kenya were integrating technology a lot in financial management, co-curricular activities and human resource management. ICT had many advantages associated with financial management in aspect of transparency, accountability of resources, efficient and effective use of finances. Therefore, principals must embrace and understand it.

Mbatia (2014), examined how ICT was managed by principals of secondary schools in Githunguri sub-County for administration purposes. Study findings revealed that principals delegated issues concerned with use of ICT resources to school secretary and deans of studies. They delegated ICT leadership to others instead of them leading. This study, therefore, investigated relationship between ICT-Usage in school financial management and administrative quality of principals in Homabay.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introductions

This chapter contains research design, description of study area, study population, sample and sampling techniques, instruments of data collection, validity and reliability of the research instruments, data collection procedures, methods of data analysis and ethical considerations.

3.2 Research Design

Descriptive and correlation research designs were used in this study. Descriptive research design collected data which answered questions concerning current status of study (Gay, 2006). It obtained information concerning state of the phenomenon under study and described existence of variables and conditions in a situation (Fraenkel and Wallen, 2009). Correlation design provided statistics that measured degree to which two variables moved in relation to each other. It determined the extent an association existed between two or more paired and quantifiable variables (Willis and David, 2009). It investigates relationship between ICT usage in internal communication, record keeping, human resource management, financial resource management and administrative quality of principals in secondary schools.

3.3 Area of Study

The study was conducted in public schools in Homabay County. Homabay county lies between latitude $0^0$15' south and $0^0$52' south and between longitudes 34^0 East and 35^0 East (Appendix L) and covers an area of 4267.1 Km^2. It is located in South West Kenya. It is bordered by Kisumu County in the North, Kisii and Nyamira Counties in the East, and Migori County in the South. It has population of 963,794 people consisting of 48% male and 52% female, National Census (2009). The county is inhabited by Luo and Abasuba communities.

Homabay County has 1183 Early Childhood Development Centers, 832 public primary schools, 138 private primary schools, and 304 secondary schools. It has several good roads maintained by Kenya Rural Roads Authority. The roads enable access to markets and lowered transport costs. Fishing, agriculture and tourism are the main economic activities in the County. In 2012, it was estimated that 75% of County population was unemployed (Integrated Development Plan 2013-017).

3.4 Study Population

The study population comprised of 102 principals, 102 deputy principals, 102 ICT teachers in charge, 8 sub-County quality assurance and standards officers, 102 school captains, 102 non-teaching staff representatives and 1480 teachers who are not in charge of ICT.

3.5 Sample Size and Sampling Technique

Study sample comprised of 91 principals, 91 deputy principals, 91 ICT teacher in-charges were sampled through purposive sampling technique. This technique enabled researcher to collect focused information from useful respondents only, saved time and was cost effective (Oso and Oen, 2009). Pilot study involved 11 principals, 11 deputy principals, and 11 ICT teachers in charge. The 7 SQASO were sampled using saturated sampling method. In addition 30 school captains and 30 school non-teaching staff representatives were sampled to provide representative data and beef up information regarding relationship between ICT-usage on the four administration aspects and administrative quality of principals. The 30 school captains and 30 non-teaching staff representative were sampled after analyzing returned concent forms which indicated acceptance for interview. Three hundred other teachers who were not in charge of ICT were sampled through simple random sampling technique to respond to questionnarre which solicited information on administrative quality of principals only.

Table 3.1: Sample of Principals, deputy Principal, ICT Tcr, SCQASO, School captains and non-teaching staff representatives per Sub- County

Sub County	Principals	D/P	ICTCR	SCQASO	Captains	Staff Rep.	Teachers
Homabay	19	19	19	1	8	8	80
Rangwe	13	13	13	1	3	3	30
Rachuonyo North	17	17	17	1	6	6	60
Rachuonyo South	8	8	8	1	1	1	30
Rachuonyo East	10	10	10	1	3	3	40
Suba	6	6	6	1	3	3	20
Mbita	3	3	3	1	1	1	25
Ndhiwa	15	15	15	1	5	5	15
TOTAL	**91**	**91**	**91**	**7**	**30**	**30**	**300**

3.6 Instruments of Data Collection

Data collection instruments included questionnaire, interview schedule, and document analysis. According to (Cohen and Manion, 2006), a combination of data collection instruments compensated for inadequacies an individual or specific instrument had. Questionnaire gathered information over a wide area though it lacked some details (Nkpa, 1997). Interview schedule elicited detailed data that were not accessed via questionnaire; while document analysis provided historical evidence which enriched findings (Ritchie, *et al*., 2003).

3.6.1 Questionnaire

Questionnaire was used to obtain important information about a population (Mugenda and Mugenda, 2003). It permitted greater depth of response, saved time, less costly, easily administered and analyzed, (Thomas, 2009).

3.6.1.1 Questionnaire for Principals

91 Principals were subjected to an open and closed ended questionnaire soliciting information about relationship between ICT- Usage and administrative quality of principals regarding

internal communication process management, record keeping management, human resource management, and financial resource management in secondary school setup (appendix A).

3.6.1.2 Questionnaire for Deputy Principals

91 deputy principals were subjected to an open and closed ended questionnaire soliciting information about relationship between ICT-Usage and administration quality of principals in regards to communication, record keeping, human resource, and financial resource management (appendix B).

3.6.1.3 Questionnaire for ICT Teacher in charge

91 ICT- Usage teachers' in-charge were subjected to an open and closed ended questionnaire soliciting information about relationship between ICT- Usage and administrative quality of principals in relation to communication, record keeping, human resource, and financial resource management (appendix C).

3.6.1.4 Questionnaire for teachers who do not teach computer

300 other teachers were subjected to an open and closed ended questionnaire soliciting information on principals' administrative quality, specifically, on consultative, delegative, availability, assertiveness, approachability and accessibility, visible, knowledgeable/dependable, and objectivity/ open mindedness in Secondary schools in Homabay County (appendix D).

3.6.2 Interview Schedule

An interview schedule allowed face encounter of respondent and researcher to obtain an in-depth data which was not captured by questionnaire. It allowed probing through insightful questioning, as well as yielding high response rate (Mugenda and Mugenda, 2003). The

limited number of the interviewee; 20 principals, 20 deputy principals, and 20 ICT-teachers in charge was informed by the fact that as the interview continued, there was an extent to which the information received became repetitive, (O'Reilly and Parker, 2013).

3.6.2.1 Interview Schedule for Principals

The 20 principals were interviewed directly by the researcher to allow for direct exchange of ideas to solicit information on the respondents' opinion on relationship between ICT-usage and administrative quality of principals with reference to communication, record keeping, human resource, and financial resource management in secondary school setup (appendix E).

3.6.2.2 Interview Schedule for deputy Principal

The 20 deputy principals were interviewed to solicit information on the relationship between ICT-usage and administrative quality of principals in regard to communication, record keeping, human resource, and financial resource management (appendix F).

3.6.2.3 Interview schedule for ICT-Usage teachers-in-charge

The 20 ICT-usage in-charge teachers were directly interviewed with the help of an interview schedule as a suggestive reference to solicit information on relationship between ICT-usage and administrative quality of principals in regards to internal communication, record keeping, human resource and financial resource management (appendix

3.6.2.4 Interview Schedule for school captains

Thirty school captains were subjected to an interview to solicit information on relationship between IC–usage and administrative quality of principals in regards to internal communication, record keeping, human resource, and financial resource management (appendix H).

3.6.2.5 Interview schedule for non-teaching staff representatives

Thirty staff representatives were subjected to interview to solicit information about relationship between ICT-usage and administrative quality of principals in relation to internal communication, record keeping, human resource, and financial resources management (appendix I).

3.6.2.6 Interview schedule for SCQASO

The 7 SQASO were interviewed to solicit information on relationship between ICT-usage in school internal communication, record keeping, human resource management, and financial resource management and administrative quality of principals (appendix J).

3.6.3 Document Analysis

A document analysis is 'the critical examination of public or privately recorded information related to the issue under investigation (Oso & Onen, 2009). Relevant documents such as KSCE online registration nominal rolls, enrolment management information system (EMIS) print outs, teacher management information system (TMIS) records, examination analysis records, and other school records that were managed by ICT were perused and scanned to establish relationship between ICT-usage and administration quality of principals in regards to internal communication, record keeping, human resource, and financial resources management (appendix K).

3.7: Validity and Reliability of Instruments

3.7.1: Validity

Validity is the degree to which a test measures what it purports to measure (Fraenkel and Walter, 2009). In this regard, (Gray, 2006) argued that the more the test items in an instrument, the more comprehensive it is hence the higher the likelihood of content's validity.

Content validity was ensured by the fact that questionnaire was structured with variety of questions related to specific objectives. Face validity of instruments was determined by subjecting them to scrutiny by Maseno University experts in educational administration. Their suggestions assisted in revising questionnaire and interview schedule by removing ambiguities and making them more comprehensive in content.

3.7.2: Reliability analysis

Table 3.2. Piloting Frame

Category of Respondents	Sub county	Population	Pilot size	Population percentage
Principals	Homabay	19	2	1.96
	Rangwe	13	1	0.98
	Rachuonyo N.	17	2	1.96
	Rachuonyo S.	8	1	0.98
	Rachuonyo E.	10	1	0.98
	Suba	6	1	0.98
	Mbita	3	1	0.98
	Ndhiwa	15	2	1.96
Sub Total		**102**	**11**	**10.78**
Deputy principal	Homabay	19	2	1.96
	Rangwe	13	1	0.98
	Rachuonyo N.	17	2	1.96
	Rachuonyo S.	8	1	0.98
	Rachuonyo E.	10	1	0.98
	Suba	6	1	0.98
	Mbita	3	1	0.98
	Ndhiwa	15	2	1.96
Sub Total		**102**	**11**	**10.78**
ICT Teachers in charge	Homabay	19	2	1.96
	Rangwe	13	1	0.98
	Rachuonyo N.	17	2	1.96
	Rachuonyo S.	8	1	0.98
	Rachuonyo E.	10	1	0.98
	Suba	6	1	0.98
	Mbita	3	1	0,98
	Ndhiwa	15	2	1.96
Sub Total		**102**	**11**	**10.78**

Reliability is a measure of degree to which the research provided a consistent result after repeated trials. (Gabarino and Holland, 2009). Reliability of this study, was ascertained by administering a test–retest of the questionnaire within two-week interval on 11 (10.78%), principals, 11(10.78%) deputy principals, and 11 (10.78%) ICT teachers in charge as shown in table 3.5 above. This was deemed sufficient based on Ritchie, et al. (2003) who recommended use of 2 – 10% of study population for population of 10 – 300. In this study, population percentage exceeded by just 0.78 which was within the range of plus or minus 1 (one) accepted difference.

Pearson's reliability coefficient (r) test was applied to determine reliability where a correlation of 0.72 at p = 0.05 was considered reliable (Gay, 2006).

Table 3.3.: Reliability Coefficient Table

Respondents	**No. of respondents**	**Pearson's correlation Coefficient (r)**
Principals	11	r=0.83
Deputy principals	11	r=0.83
ICT Teachers in-charge	11	r=0.83

The correlation coefficients results show that the principals', deputy principals' and ICT teachers in charge questionnaire are reliable. This is because the coefficient (r)=0.83 for this study is greater than the set coefficient r=0.72.

3.8: Data collection procedures

The researcher obtained permission and authority to conduct research from Maseno University Ethics Review Committee (MUERC) and National Commission for Science, Technology and Innovation (NACOSTI). He visited County Director of Education (CDE), and County Commissioner's offices to inform them of the impending study. To seek permission for conducting study in schools, letters notifying respective school principals of

the sampled schools in Homabay County of the intended research were dispatched three weeks in advance of the visit. Questionnaires were dropped to 91 principals, 91 deputy principals and 91 teachers in- charge of ICT usage of secondary schools in Homabay County and were collected later. Appointment was made with 30 school captains and 30 non-teaching staff representatives, 20 principals, 20 deputy principals, 20 teachers in charge of ICT and 7 SCQASO for interview. Note taking was done progressively. Appropriate documents were sourced from principals, deputy principals and teacher in-charge of ICT's offices.

3.9: Methods of Data Analysis

Bryman and Cramer (2009) state that data analysis seeks to fulfill research objectives and provide answers to research questions. Choice of analysis procedure relies on how well the techniques are suited to the study objectives and scale of measurement of the variables in question. According to Fraenkel et.al. (2014) data analysis refers to categorizing, ordering, manipulating and summarizing data to obtain answers to research questions. The study applied quantitative and qualitative approaches to process, analyze, and interpret the data.

3.9.1 Quantitative data processing and analysis

A four-point Likert scale was adopted for the study to collect data from questionnaires for different respondents. Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1. Quantitative data processing and analysis started with editing in the field, followed by coding the data, entry, cleaning, transformation, analysis, and interpretation (Nachmias and Nachmias, 1996). Statistical Package for Social Sciences (SPSS) version 20 was applied to run descriptive analysis to produce frequency distributions, percentages and means. Mean was interpretated as follows: 1-1.45 minimal compliance, 1.5-2.45 satisfactory, 2.5-3.45 regular compliance, 3.5- 4.0 common compliance.

In testing the null hypothesis **H01, H02, H03, H04** a t-test of significance of the difference between two sample means was used (Best and Kahn, 2004: 271). T-test analysis was used to determine the level of statistical significance of an observed difference between sample means. The null hypothesis was to be rejected if t-value was less than significance value of 0.05. According to (Oso and Onen, 2009) t-test measures difference between mean scores of two independent or dependent variables. The null hypothesis is rejected if p-value is less than 0.05 ($p<0.05$). If p- value is greater than 0.05, ($p>0.05$) null hypothesis is accepted.

To establish whether there was any significant statistical relationship between ICT-usage and internal communication, record keeping, human resource management, and financial resource management and administrative quality of principals, two-way analysis of variance (ANOVA) was used.

Analysis of variance is a statical procedure used to examine whether the observed differences for variant between more than two samples can be attributed to chance or whether they indicate actual differences among the mean of a population sampled, that is, is the difference statistically significant? (Freud and Simon 200: 357).

Analysis of variance (ANOVA) F -test was used to compare differences of subjects that are exposed to different treatment. It measured the interaction effect of the two variables in one test. The researcher used this analysis to determine relationship between ICT usage in independent variables and administrative quality of principals. If $r=0.00<0.05$, there occurs significant positive correlation between ICT-usage and administrative quality of principals.

Regression analysis (R) was used to predict un known variable using the known variable (Oso and Onen 2009). The analysis helped in determining the effect or impact of ICT usage in the

four independent administrative aspects on administrative quality of principals. The formula being: $Y=a + Bx_1 +E$. For example, if $X_1 =1.711$: $Y=1.711+0.140x_1 +E$. Meaning that 1 unit increase of ICT-usage in communication process, there was an improvement in administrative quality of principals by 0.140 units.

Coefficient- Output model was developed to forecast on relationship between ICT usage in school management and administrative quality of principals. The model was appropriate since each predictor variable was independent and non-mutually exclusive.

The model $Y= B_{o +B\ 1\ X1 +B2\ x2 +B3\ X3 +B4\ X4 +}\ e$

Where Y is principal' administrative quality (dependent variable)

X1 – School internal communication

X2 – Record keeping

X3 – Human resource management

X4 - Financial resource management (Predictor variables)

However, 7 SCQASO, 30 school captains, and 30 non -teaching staff representatives, 20 principals, 20 deputy principals and 20 ICT teachers in charge responded to interview schedule. Information from them corroborated information from the deputy principals and teachers' in-charge of ICT in respect to relationship between ICT usage and administrative quality of principals in regard to internal communication, record keeping management, human resource management, and financial resource management.

3.9.2 Qualitative data processing and analysis

The analysis of qualitative data was undertaken simultaneously with data collection. Data from interviews were organized into themes, categories and sub-categories as they emerged from the field.

3.10 Ethical considerations

Authority to conduct research was obtained from Maseno University Ethics Review Committee. Ritchie, et al. (2003), related ethics in research to questions about how topic was formulated and clarified, research design, and how the researcher gained access to information, data collection, processing in addition to storage, analysis, write up and presentation in morally responsible manner. According to (David and Resnik, 2011), research involved greatly in interaction between different people in different institutions. Interactions should be attained without coercion of respondents, whether directly or indirectly and without infringement into the respondent's privacy or comfort.

The following were undertakings:

In seeking informed consent, verbal consent and written informed consent were sought from principals, deputy head teaches, teachers in-charge of ICT, school captains and non-teaching staff representatives participating in the study. After a brief introduction, a request was made to the potential respondents to voluntarily fill in questionnaire to provide information on the stated study title. The researcher left the questionnaire behind for one week to be filled in by the respondents without his undue influence.

In confidentiality and anonymity, through a brief introduction, potential respondents were requested to voluntarily provide information on the stated study title as required without personally identifying themselves by names. Case numbers were used for confidentiality.

In respect of data storage and handling, all the data was kept safe within restricted access of the researcher.

Risks and benefits of sensitive information of this study, was such as that which regarded usage of ICT and administrative quality of principals as related to internal communication management, school record keeping management, human resource management, and school financial resource management. Such sensitive information if leaked would be disadvantageous to the principals' administration and management of the schools. Such information was sourced directly by use of scale that needed analysis for meaningful interpretation to be realized hence an assurance that undue persons would not access this data.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter consists of various sub sections where data analysis, results and discussions were presented according to research objectives. The first sub-section presented questionnaire return rate and demographic characteristics of respondents. The subsequent section presented the analysis as per stated objectives.

4.2 Response rate and demographic characteristics

4.2.1 Response rate

Number of respondents as a percentage of targeted sample population for the study was presented in table 4.1 below.

Table 4.1: Number of Respondents as a percentage of Targeted Sample Population

Respondents Category	Targeted	Actual	Response rate %
Principals	91	91	100
Deputy principals	91	91	100
ICT Teacher in Charge	91	91	100
Other teachers	300	280	93.3
SCQASO	8	7	94.0
School Captain	102	30	34
Staff Representative	102	30	34

Table 4.1 presented response rate of 91(100%) principals, 91(100%) deputy principals, 91(100%) ICT teachers, and 280(93.3%) of other teachers from Homabay County, on whom the questionnaires were administered. Several authors including Orodho (2013), Oso and Onen (2013) and Creswell (2014) among others recommended that a response rate of 50% was adequate, 60% was good and 70% and above was excellent for analysis and reporting on a survey. Study response rate of 100% and 93.3% was therefore excellent representation of the target population. High response rate was attributed to the fact that questionnaire was

personally administered by researcher and respondents were pre-notified of the intention of the study. Respondents were visited and encouraged to fill-in and return the questionnaires, researcher also made follow up calls to clarify queries and prompted respondents to fill the questionnaires.

4.2.2 Demographic Information

Demographic information consisted gender, academic and professional qualification, experience as an ICT teacher and deputy principal who were the principal respondents. Table 4.2 presented summary of demographic information of deputy principals and ICT teachers in charge.

Table 4.2 Demographic Information of the Respondents

Characteristics	**Deputy principals (n=87)**		**ICT Teachers i/c**	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	48	55.2	45	55.6
Female	39	44.8	36	44.4
Total	87	100.0	81	100.0
Professional Qualification				
PhD	4	4.6	1	1.2
Med	10	11.5	10	12.3
MA	10	11.5	17	21.0
B.Ed.	55	63.2	23	28.4
BA/B.Sc.	8	9.2	30	37.0
Total	87	100.0	81	100.0
Experience as Deputy Principal or ICT Teacher in charge				
Below 10 years	26	29.9	25	30.9
Between 10-20 years	43	49.4	37	45.7
Between 21-30 years	10	11.5	10	12.3
31 years and above	8	9.2	9	11.1
Total	87	100.0	81	100.0

In the table above, imbalance in teachers' numbers in terms of gender was evident, males took larger proportion. This was reflected by the demographic analysis results which showed more than one out of two deputy principals (55.2%) or ICT teachers in charge (55.6%) were males. It was inferred that male teachers dominated secondary school in Homabay County. Nevertheless, both genders were represented implying that the study could be generalized.

According to (Kiumi, 2008 and Gachoki, 2006) established that women principals to male principals were under represented by a ratio of 4.1 and 8.1 respectively. In the United Kingdom, a study by (Menaha, Amaratunga, and Haigh, 2008), established that women accounted for 50% of students in the university education, the rate at which they participated in senior school management was very low.

Regarding deputy principals' and ICT teachers in charge's educational and professional qualifications, results of study established significant majority (63.2%) deputy principals had bachelor's degree, (11.5%) had master's in education or Masters in Art, only 9.2% and 4.6% of them had BA/B.Sc. and PhDs respectively. On professional qualification, the results showed majority of ICT teachers in charge had Bachelors (28.4%) or BA/B.Sc. (37.0%). However, about a fifth 21.0% of them had master's in art, only 12.3% and 1.2% of them had BA/B.Sc. and PhDs, respectively. Generally, respondents had adequate professional qualifications to effectively do their work as ICT teachers or deputy principals. Since respondents with varied educational qualification were represented in the study, implied that results could be generalized across secondary schools in Homabay.

Considering level of experience, study revealed that deputy principals and the ICT teachers in charge in Homabay bore different years of experience. Deputy principals (49.4%) and ICT teachers (45.7%) had 10-20 years of teaching experience. At the same time, 29.9% and 30.9%

deputy principals and ICT teachers, respectively, had experience of below 10 years. While, 11.5% and 9.2% deputy principals had between 21-30 years and 31 and above years of experience, respectively. Likewise, 12.3% of deputy principals and 11.1% of the ICT teachers in charge had between 21-30 years, and 31 and above years of experience, respectively. Findings exposed that majority of deputy principals were adequately experienced to effectively help principals in incorporating ICT in administration and management and to appropriately respond to questions in this study.

Table 4.2.1 Demographic characteristics of principals and other teachers

	Principals (n=91)		**Other Teachers(n=280)**	
Characteristics	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Gender				
Male	60	65	180	64
Female	31	35	100	36
Total	**91**	**100**	**280**	**100**
Professional Qualification				
PhD	10	11	5	1.8
Med	25	27	50	18
MA	11	12	10	3.6
Bed	30	33	190	68
BA/BSc	15	17	25	8.9
Total	**91**	**100**	**280**	**100**
Length of Experience				
Below 10 years	25	27	40	14.3
Between 10-20 years	35	38	160	57
Between 21-30 years	20	22	45	16
Above 31 years	11	12	35	12.5
Total	**91**	**100**	**280**	**99.8**

From the findings in table 4.2.1 above, gender parity distribution of principals was evident. Demographic analysis result showed that (65%) were male principals and (35%) were female. Male principals dominated public secondary schools in Homabay County. In regards to

professional qualification, principals provided highest qualification level. The findings were positive in that all principals were holders of first degree and above. It was therefore, inferred that all of them were well informed on academics, school administration matters and qualified to head respective schools. In respect to length of experience, the findings showed that many principals (38%) had served for between 10 – 20 years, (27%) had served for 10 years and below. (22%) had served for between 21 – 30 years and (12%) had served for 31 years and above. This was a positive attribute since many principals had experience in ICT integration in the administration and possible challenges that may arise.

All teachers had relevant university degrees and qualified to teach in secondary schools. 85.5% of the teachers had above 10 years of experience in teaching. While only 15.5% of them had teaching experience below 10 years. Therefore, the teachers appropriately answered questionnaires on administrative quality of principles.

4.3 Administrative quality of principals in public secondary schools.

4.3.1 Response of teachers on administrative quality of principals in public secondary schools

The study investigated the levels of administrative qualities of principals in management of schools in Homabay. Administrative qualities of principals were interpreted from summation of characteristics as exhibited in respect to facilitation of the school goals achievement. Deputy principals (N=91), ICT teachers in charge (N=91) and other teachers (N=300) were issued with questionnaires which contained indicators of administrative qualities. Respondents were asked to rate principals with regard to those qualities. The responses were summarized in frequency percentages, means and standard deviations.

Table 4.3: Teacher responses on Administrative quality of principals in (N=300)

Admin. Quality	1	2	3	4	**Mean**	**SD**
Consultative	225(75%)	45(15%)	30(10%)	0(0.0%)	1.35	0.79
Delegative	162(54%)	99(33%)	39(12%)	0(0.0%)	1.59	0.74
Available	135(45%)	126(42%)	39(12%)	0(0.0%)	1.68	0.78
Assertive/Focused	189(63%)	90(30%)	21(7%)	0(0.0%)	1.44	0.63
Approachable/ accessible	159(53%)	120(40%)	21(7%)	0(0.0%)	1.54	0.82
Visible	159(53%)	87(29%)	48(16%)	6(2%)	1.67	0.80
Knowledgeable/ Dependable	183(61%)	84(28%)	33(11%)	0(0.0%)	1.53	0.65
Objective/ Open minded	153(51%)	114(38%)	27(9%)	6(2%)	1.62	0.69
Average					**1.55**	**0.69**

KEY: ***Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1***

Teachers' response on issue of consultation scored mean of 1.35 standard deviation of 0.79. This was interpreted as minimal compliance by principals on consultation as an aspect of administrative quality. However, 225(75%) teachers strongly agree that principals were consultative, 45(15%) agree, with only 30(10%) who disagree.

On the issue of delegation as an aspect of administrative quality, teachers' response recorded mean of 1.59 with standard deviation of 0.74. This showed satisfactory compliance by principals regarding delegation as an aspect of administrative quality, 165(54%) teachers strongly agree that principals were delegative, 99(33%) agree and 39(12%) disagree that principals were delegative respectively.

Teachers' response on the issue of availability attracted mean of 1.68 with standard deviation of 0.78. This was interpreted as satisfactory compliance by principals on availability as an aspect of administrative quality and was reflected by 135 (45%) teachers who strongly agree that principals were available in school while 126(42%) agree and 39(12%) disagree.

Teachers' response on the issue of assertiveness and focus recorded a mean of 1.44 and standard deviation of 0.63. This was interpreted to show minimal compliance by principals. As 189(63%) teachers strongly agree with the fact that principals were assertive/focused, 90(30%) agree and 21(7%) disagree.

For approachability/accessibility as an aspect of administrative quality of principals, teachers' response had a mean of 1.54 and a standard deviation of 0.82. This reflected satisfactory compliance by principals in that aspect of administrative quality. For this aspect, 159(53%) teachers strongly agree that principals were approachable and accessible, 120(40%) agree with 21(7%) who disagree.

Teachers' response on the aspect of visibility recorded mean of 1.67 with standard deviation of 0.80. This showed satisfactory compliance by principals of public secondary schools in regards to visibility as an aspect of administrative quality. In response to this aspect, 159(53%) teachers strongly agree that principals were visible in schools as 87(29%) agree, while 48(16%) and 6(2%) of them disagree and strongly disagree respectively.

On the issue of knowledge and dependability as an aspect of administrative quality of principals, teachers' responses had mean score of 1.55 and a standard deviation of 0.65. It meant that there was satisfactory compliance. 183(61%) teachers strongly agree that principals were knowledgeable and dependable while 84(28%) and 33(11%) of them agree and disagree respectively.

Lastly, teachers' response on the issue of objectivity/open mindedness, mean of 1.63 with standard deviation of 0.69 was recorded. This was interpreted to show satisfactory compliance by principals in regard to being objective and open minded as an aspect of administrative

quality. This was reflected by 153(51%) teachers strongly agree that principals were objective and open minded and 114(38%) of them agree with 27(9%) and 6(2%) disagree and strongly disagree respectively.

Overall mean rating of **1.55** indicated satisfactory compliance. This meant that teachers agreed that principals satisfactorily complied with the aspects of administrative quality.

4.3.2 Response from deputy principals on administrative quality of principals

Quality	1	2	3	4	Mean	SD
Consultative	61(67.0%)	15(16.5%)	10(11.0%)	5(5.5%)	1.55	0.79
Delegative	44(48.4%)	37(40.7%)	10(11.0%)	0(0.0%)	1.96	0.74
Available	37(40.7%)	34(37.4%)	12(13.2%)	8(8.8%)	1.90	0.78
Assertive/Focused	51(56.0%)	25(27.5%)	15(16.5%)	0(0.0%)	1.60	0.63
Approachable / Accessible	43(47.3%)	33(36.3%)	9(9.9%)	6(6.6%)	1.76	0.82
Visible	43(47.3%)	24(26.4%)	13(14.3%)	12(13.2%)	1.96	0.80
Knowledgeable/Depend.	49(53.8%)	33(36.3%)	9(9.9%)	0(0.0%)	1.65	0.65
Objective/ Open minded	41(45.1%)	31(34.1%)	17(18.7%)	2(2.2%)	1.78	0.69
Average					**1.77**	**0.74**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

As regards consultative as an aspect of administrative quality of principals, the deputy principals' response recorded mean of 1.55 with standard deviation of 0.79, interpreted as satisfactory compliance. This was reflected by 61 (67.0%) deputy principals who strongly agree that their principals were satisfactorily consultative and 15(16.5%) agree with 10(11%) and 5(5.5%) of them disagree and strongly disagree respectively.

On delegation as an administrative quality, deputy principals' responses recorded mean rating of 1.96 with standard deviation 0.74. This was interpreted to show principals satisfactory compliance with aspect of administrative quality. This was reflected by 44(48.4%) deputies strongly agree as 37(40.7%) agree and 10(11.0%) disagree.

On whether principals were available, the deputy principals' responses recorded a mean of 1.90 and standard deviation of 0.78. This showed satisfactory compliance. This interpretation was corroborated by 37(40.7%) deputy principals who strongly agree that their principals delegated duties and responsibilities to other staff members and 34(37.4%) agree while 12(13.2% and 8 (8.8%) of them disagree and strongly disagree that principal were available respectively.

Regarding the quality of assertiveness and focused, the deputy principals' responses recorded a mean rating of 1.60 and a standard deviation of 0.63. This was interpreted to mean satisfactory compliance. This was reflected by 51(56.0%) deputy principals who strongly agree that principals satisfactorily displayed assertiveness and focus qualities in their administration while 25(27.5%) teachers agree and 15(16.5%) of them disagree.

As for the issue of approachable/accessible qualities, the deputy principals' response recorded mean of 1.76 with standard deviation of 0.82; interpreted as satisfactory compliance. This corroborated by 43(47.3%) deputies who strongly agree and 33(36.3%) agree while 9(9.9%) and 6(6.6%), disagree and strongly disagree respectively.

Deputy principals' responses on whether principals were visible scored mean rating of 1.96 with standard deviation of 0.80, interpreted as satisfactory compliance. This was reflected by 43(47.3%) deputy principals who strongly agree that their principals were visible and 24(26.4%) agree while 13(14.3%) and 12(13.3%) deputies disagree and strongly disagree respectively.

Deputy principals' response on the issue of knowledgeable/ dependable as aspects of administrative had mean rating of 1.65 with standard deviation of 0.65- showed satisfactory

compliance. Many deputies 49(53.8%) strongly agree that their principals were knowledgeable and dependable, 33(36.3%) agree and the other 9(9.9%) disagree.

As for the aspect of objectivity/ open mindedness deputy principals' responses rated at mean of 1.78 with standard deviation 0.69; interpreted to show satisfactory compliance meaning that principals were satisfactorily objective and open minded in executing their administration of public secondary schools. This fact was reflected by 41(45.1%) of deputies who strongly agree that their principals were objective and open minded when handling administrative issues. 31(34.1%) of them agree while 17(18.7%) and 2(2.2%) disagree and strongly disagree respectively.

Overall mean rating of **1.77** and SD=0.74 indicated satisfactory compliance. This implied that deputies agreed that principals satisfactorily complied with the administrative qualities in Homabay.

4.3.3 Response from ICT teachers in charge on administrative quality of principals in public secondary schools

Table 4.5: ICT Teachers in charge's Responses on Administrative Quality of principals on Management of Schools in Homabay (N=91)

Quality	1	2	3	4	Mean	SD
Consultative	54(59.3%)	23(25.3%)	7(7.7%)	7(7.7%)	1.64	0.58
Delegative	33(36.3%)	41(45.1%)	11(12.1%)	6(6.6%)	1.89	0.70
Available	54(59.3%)	21(23.1%)	10(11.0%)	6(6.6%)	1.65	0.68
Assertive/Focused	60(66.0%)	20(22.0%)	7(7.7%)	4(4.4%)	1.70	0.61
Approachable/Acc.	49(54.0%)	23(25.3%)	14(15.4%)	5(5.5%)	1.51	0.63
Visible	34(37.4%)	38(42.0%)	12(13.2%)	7(7.7%)	1.73	0.79
Knowledgeable/Dep.	61(67.0%)	20(22.0%)	5(5.5%)	5(5.5%)	1.95	0.69
Objective/Open minded	45(49.5%)	34(37.4%)	7(7.7%)	5(5.5%)	1.55	0.74
Average					**1.70**	**0.70**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

ICT teachers in charge's response on consultative aspect of administrative quality recorded a mean rating of 1.64 and SD= 0.58. The mean was interpreted to show satisfactory

compliance. The finding revealed that 54(59.3%) ICT teachers in charge strongly agree that their principals were consultative, 22(25.3%) agree and only 7(7.7%) each of them disagree and strongly disagree respectively.

Concerning the issue of delegation as an aspect of administrative quality, the ICT teachers in charge recorded a mean rating of 1.89 and SD=0.70. This showed satisfactory compliance, meaning the principals satisfactorily delegated duties and responsibilities to other staff members. This was reflected by only 33(36.3%) of ICT teachers in charge who strongly agree that their principals were delegative. 41(45.1%) agree, as 11(12.1%) and 7(7.7%) disagree and strongly disagree respectively.

Regarding the issue of availability as an aspect of administrative quality, the ICT teachers in charge recorded mean of 1.65 and SD=0.68 indicating satisfactory compliance. The results further revealed that 54(59.3%) ICT teacher in charge strongly agree that their principals were available and 21(23.1%) agree while 10(11.0%) and 6(6.6%) of them disagree and strongly disagree respectively.

The ICT teacher in charge recorded a mean rating of 1.70 and SD=0.61 for assertive and focused aspects of administrative quality. This indicated satisfactory compliance. Meaning that principals in their administration were assertive and focused. The finding was confirmed by 60(66.0%) ICT teacher in charge who strongly agree that their principals were assertive and focused. 20(22.0%) agree as 7(7.7%) and 4(4.4%0 of them disagree and strongly disagree respectively.

The aspects of approachability/ accessibility were rated at mean of 1.51 and SD= 0.63 by ICT teacher in charge. This was interpreted to show satisfactory compliance. Meaning the

principals were satisfactorily approachable and accessible. 49(54%) ICT teacher in charge at 49(54%) strongly agree that their principals were approachable /accessible. 23(25.3%) agree while 14(15.4%) and 5(5.5%), disagree and strongly disagree respectively.

ICT teachers in charge response on the issue of visibility was rated at mean of 1.73 and SD=0.79. This showed satisfactory compliance. Whereas, 34(37.4%) of the ICT teacher in charge strongly agree that principals were visible while 38(42.0%) agree, 12(13.2%) and 7(7.7%) disagree and strongly disagree respectively.

Regarding the aspect of knowledgeable and dependable, the ICT teacher in charge response recorded mean rating of 1.95 and SD=0.69. The rating showed satisfactory compliance, meaning most principals were knowledgeable and dependable according to the ICT teacher in charge. The finding revealed that 61(67.0%) of ICT teacher in charge strongly agree that the principals were knowledgeable and dependable. It was further revealed that 20 (22.0%) agree and 5(5.5%) each disagree and strongly disagree respectively that principals were dependable.

Lastly ICT teacher in charge rated the issue of objective/open minded as aspects of administrative quality at a mean of 1.55 and SD=0.74, showing satisfactory compliance by principals. However, 45(49.5%) ICT teacher in charge strongly agree that principals were objective and open minded, 34(37.4%) agree, while 7(7.7%) and 5(5.5%), respectively disagree and strongly disagree.

Average mean of **1.70** and SD=0.70 from ICT teacher in charge showed satisfactory compliance. This meant that ICT teacher in charge agreed that principals satisfactorily complied with administrative quality in Homabay.

Table 4.6: Average mean for teachers, deputy principals and ICT teachers in charge on administrative quality of principals in public secondary schools

Respondents	Average mean rating
Teachers	1.55
Deputy principals	1.77
ICT teacher in charge	1.70
Overall mean	**1.67**

The conclusion was that the administrative quality of principals in Homabay County at an overall mean of 1.67 according to the teachers, deputy principals and ICT teachers showed satisfactory compliance. This meant that teachers, deputy principals, and ICT teachers in charge agreed that principals were satisfactorily compliant with administrative qualities.

4.4 Relationship between ICT Usage in Internal Communication and Administrative quality of principals

4.4.1 Introduction

First objective sought to determine relationship between ICT usage on internal communication and administrative quality of principals in public secondary schools. A Likert scale of four-point was adopted for the study: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2 and Strongly Disagree (SD)=1.

4.4.2 ICT Usage in Internal Communication in Public Secondary Schools

In exploring the views of respondents (Principals, deputy principals and ICT teachers in charge, items of the questionnaire were indicators of ICT usage in internal communication. Responses were scored using a four-point continuum scale of 1-4. The scores were summated to measure respondents' opinion on ICT usage on internal communication in their schools.

Their views were summarized in percentage, frequencies, mean and standard deviation (Sullivan and Artino, 2013).

4.4.2.1 Response from principals on ICT usage in internal communication

Table 4.7: Response from principals on ICT usage in Internal Communication. (N=91)

Mode of communication	1	2	3	4	Mean	SD
Digital Projector	45(49.5%)	44(48.4%)	2(2.2%)	0(0.0%)	1.53	0.54
Video	50(54.9%)	28(30.8%)	8(8.8%)	5(5.5%)	1.65	0.86
Website	60(65.9%)	20(21.9%)	10(11.0%)	1(1.2%)	1.47	0.74
Email	70(76.99%)	10(11%)	6(6.6%)	5(5.5%)	1.41	0.84
SMS	90(98.9%)	1(1.1%)	0(0.0%)	0(0.0%)	1.01	0.10
Twitter	10(11.0%)	20(22.0%)	30(33.0%)	31(34.0%)	2.90	1.00
WhatsApp	88(96.7%)	3(3.3%)	0(0.0%)	0(0.0%)	1.03	0.18
Radio	58(63.7%)	30(33.0%)	3(3.3%)	0(0.0%)	1.40	0.56
TV	67(73.6%)	24(26.4%)	0(0.0)	0(0.0%)	1.26	0.44
Fax	28(30.8%)	25(27.5%)	22(24.2%)	16(17.6%)	2.29	1.09
Mobile Phone/Telephone	85(93.7%)	4(4.4%)	2(2.2%)	0(0.0%)	1.09	0.35
Digital Printer	70(76.9%)	15(16.5%)	5(5.5%)	1(1.1%)	1.31	0.63
Instagram	4(4.4%)	2(2.2%)	58(63.7)	25(27.5%)	3.19	0.68
Average					**1.66**	**0.62**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

The principals' response on the issue of digital projectors had a mean rating of 1.53 and SD= 0.54. This mean was interpreted to show satisfactory usage. The finding was that digital projector was satisfactorily used for communication procedures in schools. However, it was revealed that the number of principals who strongly agreed the fact that digital projector was used for communication was below average as was reflected by 45(49.5%) and 44(48.4%) who strongly agree and agree respectively, while only 2(2.2%) disagree.

The use of video for communication attracted mean of 1.65 SD=0.86 from principals' response, this showed satisfactory usage level. It was revealed that average number of principals strongly agreed that it was used for communication. This was reflected by

50(54.9%) principals who strongly agree with 28(30.8%) of them agree with 8(8.8%) and 5(5.5%) of them disagree and strongly disagree respectively.

As for e-mail, principal's response recorded mean of 1.41 (SD=0.84) indicating minimal usage level. However, it was revealed that email may be used for other purposes as majority 70(76.9%) principals strongly agree that email was used in school. While only 10(11.0%), 6(6.6%) and 5(5.5%) agree, disagree and strongly disagree respectively to its usage.

The website mode scored mean of 1.47, (SD=0.74). This meant minimal usage level. Like e-mail, 60(65%) principals strongly agree that it was used in school though, could be for other purposes. At the same time 20(21.9%) principals agree that it was used for communication as 10(11.0%) and 1(1.1%) principal disagree and strongly disagree respectively.

SMS was rated highly with a mean of 1.01 (SD=0.10). Although this mean was interpreted to show minimal usage level for internal communication, majority of principals strongly agreed to its usage in internal communication. This was reflected by 90(98.9%) principals who strongly agree and only 1(1.1%) of them disagree.

Twitter and Fax both had mean of 2.90 and (SD=1.00) and 2.29 and (SD=1.09) form principals' response. Each mean was interpreted to show satisfactory usage level. However, ironically few principals strongly agree as reflected by 10(11.0%) and 28(30.8%) principals respectively. As 20(22.0%) and 25(27.5%) principals agree respectively to the usage of twitter and fax. While 30(33.0%) and 22(24.2%) principals disagree, 31(34,0%) and 16(17.6%) strongly disagree respectively.

The use of WhatsApp and mobile phones scored mean of 1.03, SD=0.18 and 1.09 SD=0.35 respectively. Both means showed minimal usage level for the named aspects in communication. However, the ratings were corroborated by big numbers and percentages of

principals as was reflected by 88(96.7%) and 85(93.7%) principals respectively strongly agree that aspects were in use for internal communication. On the same note only 3(3.3%) principals agree that WhatsApp was used for communication and 4(4.4%) and 2(2.2%) principals agree and disagree respectively to the fact that mobile phones were used for communication.

Th average mean of **1.66** recorded for the use of ICT for internal communication by principals meant that they agreed ICT was satisfactorily used for internal communication in public secondary schools in Homabay County.

4.4.2.2 Response from deputy principals on ICT usage in internal communication

Table 4.8: Responses from deputy principals on ICT Usage on Internal School Communication in schools in Homabay (N=91)

Communication. Aspect	**1**	**2**	**3**	**4**	**Mean**	**SD**
Digital projector	45 (49.5%)	39 (42.8%)	7 (7.7%)	0 (0.0%)	1.58	1.02
Video	52 (57.1%)	29 (31.9%)	9 (9.9%)	1 (1.1%)	1.45	1.04
Email	38 (41.8%)	27 (29.7%)	18 (19.7%)	8 (8.8%)	1.95	0.80
SMS	77 (87.6%)	11 (12.1%)	2 (2.2%)	1 (1.1%)	1.20	0.67
Twitter	31 (34.1%)	28 (30.7%)	12 (13.2%)	20 (22.0%)	2.20	1.02
What's App	69 (75.8%)	19 (20.9%)	1 (1.1%)	2 (2.2%)	1.42	0.76
Radio	52 (57.2%)	27 (29.7%)	10 (11.0%)	2 (2.2%)	1.53	1.21
TV	63 (69.2%)	23 (25.3%)	4 (4.4%)	1 (1.1%)	1.34	1.24
FAX	28 (30.7%)	20 (22.0%)	22 (24.2%)	21 (23.1%)	2.43	1.01
Mobile phones/ Telephone	73 (80.0%)	17 (18.7%)	1 (1.1%)	0 (0.0%)	1.20	0.43
Digital printer/ Scanner	59 (60.8%)	26 (28.6%)	4 (4.4%)	2 (2.2%)	1.44	0.72
Instagram	29 (31.8%)	13 (14.3%)	19 (20.9%)	30 (33.0%)	1.45	1.06
Average					**1.60**	**0.92**

KEY: **Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1**

Deputy principals' response on digital projector as an aspect of internal communication had a mean of 1.58 and SD=1.02. The mean showed satisfactory usage level. This meant that digital projectors were satisfactorily used for internal communication. This fact was reflected by 45(49.5%) deputy principals who strongly agree and 39(42.8%) of them agree with only 7(7.7%) who disagree.

Video was rated at mean of1.45 and SD=1.04, this mean showed minimal usage level. However, 52(57.1%) deputies strongly agree that videos were used for internal communication only 29(31.9%) agree. With 9(9.9%) and 1(1.1%), disagree and strongly disagree respectively.

Email as an aspect of communication had mean of 1.95 and SD=0.80 interpreted to show satisfactory usage level. This meant it was satisfactorily used for internal communication in public secondary schools. Though only 38 (41.8%) deputies strongly agree as 27(29.7%) agree and the other hand 18(19.7%) and 8(8.8%) principals disagree and strongly disagree respectively on its usage.

SMS recorded mean of 1.20 and SD=0.67. The mean showed minimal usage level. Although this mean showed minimal usage level, deputies strongly agree was reflected by 77(87.6%) of them, as 11(12.1%) agree with 2(2.2%) and 1(1.1%) deputy disagree and strongly disagree respectively.

Apart from SMS, WhatsApp and mobile phones followed closely with mean rating of1.42 (SD=0.96) and 1.44 (SD=0.72) respectively. Both means showed minimal usage levels though. However, 69(75.8%) and 73(80.0%) deputies strongly agree that WhatsApp and

mobile phones respectively were used for internal communication in schools as 19(20.9%) and 17(18.7%) deputies agree respectively with 1(1.1%) for each respectively disagree.

Television had mean of 1.34 (SD=1.24) which showed minimal usage level. However, 63(69.2%) and 23(25.3%) deputies, strongly agree and agree respectively that television was in used for communication while 4(4.4%) and 1(1.1%) deputy disagree and strongly disagree with that opinion.

Radio scored a mean of 1.53 (SD=1.21), interpreted to show satisfactory usage level. This fact was corroborated by 52(57.2%) deputy principals who strongly agree and 27(29.7%) who agree, while 10(11.0%) and 2(2.2%) disagree and strongly disagree respectively with that finding.

Digital printer was rated at a mean of 1.44 (SD=0.72). This mean translated to minimal usage level. Only 59(60.8%) deputies strongly agree with the fact that digital printers were used for communication in secondary schools while 26(28.6% agree as 4(4.4%) and 2(2.2%) deputies disagree and strongly disagree respectively to its usage.

Instagram attracted mean rating of 1.45 (SD=1.06) which translated into minimal usage level. This finding was corroborated by 29(31.8%) and 13(14.3%) deputies who strongly agree and agree respectively. While 19(20.9%) and 30(33.0%) deputies disagree and strongly disagree respectively that Instagram was used for internal communication.

The average mean of **1.60** indicated satisfactory usage level for ICT in internal communication. Therefore, deputy headteachers agreed that ICT was satisfactorily used for internal communication in Homabay.

4.4.2.3 Response from ICT teachers in-charge on ICT usage in internal communication in Homabay

Table 4.9: Responses from ICT teachers' in-charge on ICT Usage in Internal School Communication in public Secondary Schools in Homabay County (N=91)

Comm. Aspect	1	2	3	4	Mean	SD
Digital projector	23 (35.3%)	35 (38.5%)	16(17.6%)	17 (18.7%)	2.30	0.69
Video	33 (36.3%)	26 (28.6%)	20 (22.0%)	12 (13.2%)	2.10	0.98
Email	54 (59.3%)	28 (30.8%)	5 (5.5%)	4(4.4%)	1.45	0.98
SMS	72 (79.1%)	11 (12.1%)	7 (7.7%)	1(1.1%)	1.30	0.54
Twitter	13 (14.3%)	30 (33.0%)	19 (21.8%)	29(31.9%)	1.60	1.12
WhatsApp	64 (70.3%)	21 (23.1%)	5 (5.5%)	1(1.1%)	1.45	0.63
Radio	27 (30.7%)	22 (24.2%)	12 (13.8%)	29(31.9%)	2.45	0.79
TV	45 (49.4%)	21 (23.1%)	2(2.2%)	23 (25.3%)	2.03	0.65
FAX	11(12.1%)	24 (26.4%)	19 (20.9%)	37 (40.6%)	2.78	1.10
Mobile phones/ Telephone	82 (90.1%)	6 (6.6%)	3 (3.3%)	0 (0.0%)	1.20	0.45
Digital printer/ Scanner	69(75.8%)	18 (19.8%)	3 (3.3%)	1(1.1%)	1.26	0.70
Instagram	13(14.3%)	20 (22.0%)	16 (18.4%)	42 (46.2%)	2.95	1.18
Average					**1.90**	**0.80**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

ICT teachers' response on the use of digital projectors had a mean rating of 2.30 and SD=0.69 this was interpreted to show satisfactory usage level. However, only 23(35.3%) and 35(38.5%) ICT teachers strongly agree and agree with finding while 16(17.6%) and 17(18.7%), disagree and strongly disagree respectively.

For videos, ICT teachers posted mean of 2.10 and (SD=0.98) which was interpreted to show satisfactory usage level. It meant that according to ICT teachers, videos were satisfactorily used for internal communication procedures. These findings were reflected by 33(36.3%) and 26(28.6%) ICT teachers who strongly agree and agree respectively that videos were used for

communication while 20(22.0%) and 12(13.2%) of them disagree and strongly disagree respectively.

Email attracted score mean of 1.45 and SD=0.98 which showed a minimal usage level. This meant that email was of minimal use for internal communication. However, 54(59.3%) and 28(30.8%) ICT teachers respectively strongly agree and agree that e-mail was used. 5(5.5%) and 4(4.4%), respectively disagree and strongly disagree.

The ICT teachers' response on mobile phones, SMS, digital printers and WhatsApp in that order, had mean of 1.20 (SD=0.45), 1.30 (SD=0.54), 1.26 (SD=0.70, and 1.45 (SD=0.63) respectively. Each mean score interpreted, showed minimal usage level for each aspect respectively. Therefore, it meant that the position held by ICT teachers on the use of the named aspect was at minimal level. In respect of mobile phones, 82(90.1%), ICT teachers strongly agree that it was used for internal communication as only 6(6.6%) and 3(3.3%) of them agree and disagree respectively.

Regarding SMS, 72(79.1%) and 11(12.1%0 deputies strongly agree and agree respectively that it was used for communication and 11(12.1%) agree while 7% and 1% deputies disagree and strongly disagree respectively. Concerning digital printers, 69(75.8%) and 18(19.8%) ICT teachers strongly agree and agree with its usage for internal communication while 3(3.3%) and 1(1.1%) of them disagree and strongly disagree with its usage for internal communication. While 64(70.3%) ICT teachers strongly agree that WhatsApp was used for internal communication as 21(23.1%) agree while 5(5.5%) and 1(1.1%) of them disagree and strongly disagree.

Instagram had mean of 2.5 (SD=1.18) interpreted to show satisfactory usage level. Even though satisfactory usage level was realized, only 13(14.3%) ICT teachers strongly agree and 20(22.0%) agree as 16(18.4%) and 42(46.2%) of them disagree and strongly disagree that it was used for communication.

Fax had a mean of 2.78 (SD=1.10) which showed satisfactory usage level with only 11(12.1%) and 24(26,4%) ICT teachers who strongly agree and agree respectively for its usage as 19(20.9%) and 37(40.6%) disagree and strongly disagree.

Lastly, twitter had mean score of1.60 (SD=1.12) from ICT teachers' responses. This was interpreted to show satisfactory usage level. Whereas there was satisfactory usage level in twitter for internal communication, only 13(14.3%) and 30(33.0%) ICT teachers strongly agree and agree respectively with that finding while 19(21.8%) and 29(31.9%) of them disagree and strongly disagree respectively.

At an average mean rating of **1.90**, the ICT usage in internal communication was interpreted to show satisfactory level. It meant that the ICT teachers were of the opinion that ICT usage in internal communication in public secondary schools in Homabay County was satisfactory.

4.4.2.4 Average mean from principals', deputy principals' and ICT teachers' responses on ICT usage in internal communication in public schools.

In summary, the average mean from principals', deputy principals', and ICT teachers' responses on ICT usage in internal communication was tabulated.

Table 4.10: Average mean rating for principals, deputy principals, and ICT teacher's response on ICT usage in internal communication.

Respondents	Average mean
Principals	1.66
Deputy principals	1.60
ICT teachers in-charge	1.90
Overall mean	**1.72**

In conclusion, use of ICT for internal communication in public secondary schools according to three respondents named had an overall mean of **1.72**. This was interpreted to show satisfactory usage level, which meant principals, deputy principals and ICT teachers shared common opinion that ICT usage in internal communication was satisfactory.

Predominant use of ICT facilities such as email: email communication within school involved administration. This information was consistent with the international literature (Bebell et al. 2004). 4.4.3 T-test of deputy principals' and ICT teachers in charge response on ICT usage in internal communication in public secondary schools in Homabay County.

Table 4.11: T-Test of deputy principal and ICT teacher Responses on ICT usage in Internal Communication in public secondary schools in Homabay County N=91)

Item	Respondent	Mean	SD	T-test
Digital	DHTe	1.58	1.20	t (180) =4.347, P=.603
projector	ICT Tcr	2.30	0.69	
Video	DHTe	1.45	1.04	t (180) =.338, P=.096
	ICT Tcr	2.10	0.69	
Email	DHTe	1.95	0.80	t (180) =1.414, P=587
	ICT Tcr	1.45	0.98	
SMS	DHTe	1.20	0.67	(t (180) =.701, P=.078)
	ICT Tcr	1.30	0.54	
Twitter	DHTe	2.20	1.02	
	ICT Tcr	1.60	1.12	(t (180) =1.333, P=.599)
WhatsApp	DHTe	1.42	0.76	(t (180) =.455, P=.633)
	ICT Tcr	1.45	0.63	
Radio	DHTe	1.53	1.21	(t (180) =.921, P=.945)
	ICT Tcr	2.45	0.79	
TV	DHTe	1.34	1.24	(t (180) =1.000, P=.873)
	ICT Tcr	2.03	0.65	
FAX	DHTe	2.43	1.01	(t (180) =.715, P=.610)
	ICT Tcr	2.78	1.10	
Mobile	DHTe	1.20	0.43	(t (180) =1.210, P=.900)
phone call	ICT Tcr	1.20	0.45	
Telephone				
Digital	DHTe	1.26	0.70	(t (180) =.344, P=1.016)
printer/	ICT Tcr	1.44	0.72	
Scanner				
Instagram	DHTe	1.95	1.06	
	ICT Tcr	2.95	1.18	(t (180) =.504, P=.779)
Overall	DHTe	1.60	0.92	(t (180) =.809, P=.601)
Rating	ICT Tcr	1.90	0.80	

From table 4.11 it was observed that according to deputy principals at mean of 1.60 (S=0.92), ICT usage for internal communication was satisfactory while for the ICT teachers in charge with mean of 1.90 (SD=0.80), it was similarly satisfactory. The means were insignificantly different (t (180) =.809, P=.601. The position of deputy principals and ICT teachers on ICT usage for internal communication and administrative quality of principals was not different.

4.4.4 Interview schedule data for Principals, deputy principals, and ICT Teachers in charge on ICT usage in Internal Communication.

Table 4.12: Principals', deputy principals', and ICT teachers' interview data on ICT usage in internal communication in public secondary schools (N=20).

Mode of communication Principals (N=20)	Percentage
SMS	11(55%)
WhatsApp	7(35%)
Mobile phones	2(10%)
Digital printers	1(5%)
Deputy principal (N=20)	
SMS	10(50%)
WhatsApp	5(25%)
Mobile phones	3(15%)
Digital printers	2(10%)
ICT teacher in charge (N= 20)	
SMS	8(40%)
WhatsApp	6(30%)
Mobile phones	4(20%)
Digital printers	2(10%)

From table 4.12 above, it was observed that SMS was the most preferred mode of communication in public secondary schools. This finding was reflected by 55% principals, 50% deputy principals, and 40% ICT teachers. Other modes of communication that were used for communication were reported in this order; WhatsApp, Mobile phones, and Digital printers. The order was maintained for principals, deputy principals, and ICT teachers.

During interview, a principal expressed her views as follows:

> *'SMS and WhatsApp, are the most loved aspect of internal communication process in our school between the administration, staff, and stakeholders.*'

One SCQASO had this to say:

> *'In fact, these days we communicate administrative issues with school administrators through phone call, SMS, e- mail and WhatsApp. Most of the data are passed to us via the named platforms. This technology has cut down travelling cost to school that are in interior locations just to collect required information.'*

Another SCQASO had this to say:

> '*In this period of digital era, our communication with school principals is purely via SMS, WhatsApp or e-mail based. It has made our work simpler, we just make a request for an information and receive it almost immediately via the platforms.'*

A school captain had this to say:

> *'The relationship between the administration and the student body was cordial. ssThis has been enhanced by the existence of effective and efficient flow of information that is timely- occasioned by ICT.'*

One of the non-teaching staff representatives said:

> *'Through SMS, or phone call we easily reach the school administration and the administration reaches us with relative ease. In fact, it is difficult to play truancy at work.'*

These findings gave the impression that ICT usage in internal communication was embraced and enhanced the administrative quality of principals in regard to the way internal communication procedures and process were managed. It was found that the most commonly used modes of communication in schools were SMS, WhatsApp, mobile phones and e-mail.

4.4.5: ANOVA for deputy principals' and ICT teachers', outcomes on relationship between ICT usage in internal communication and administrative quality of principals

Study was founded on the hypothesis that there was no Relationship between ICT usage in internal communication and administrative quality of principals.

To investigate any statistically significant relationship between ICT usage in internal communication and administrative quality of principals' null hypothesis was tested. Parametric tests such as Pearson Moment Coefficient analysis on ICT usage in internal communication as independent variable and administrative quality of principals as the dependent variable, was administered. Level of ICT usage in internal communication and administrative quality of principals were computed from frequency of responses. Likert scale responses in each item was computed to create approximately continuous variable within an open interval of 1 to 4, suitable for use on parametric data, as explained by (Sullivan and Artino (2013); where high scale ratings implied high ICT usage on internal communication and administrative quality of principals. Significant level (p=0.5) indicated that whenever p<.05, null hypothesis would be rejected, and significant difference existed. If the p>0.05 significant difference never existed, hence null hypothesis would not be rejected.

Table 4.13.1: ANOVA for deputy principals' Outcomes on relationship between ICT usage in Internal communication and Administrative quality of principals (N=91)

		ICT usage in internal communication	**Administrative quality of principals**
ICT usage in internal communication	Pearson Coefficient Sig.(2-tailed) N	1	.398 .000
Administrative quality of principals	Pearson Coefficient Sig. (2-tailed) N	90 .398 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed).

Findings in table 4.13.1 showed statistically significant positive correlation between ICT usage on school internal communication and administrative quality of principals in public secondary schools (r=.398; p<.05). In the event correlation is statistically significant, the

hypothesis that, 'there was no statistically significant relationship between ICT usage in school internal communication and administrative quality of principals was rejected.

Table 4.13.2: ANOVA for ICT teachers' Outcomes on Relationship between ICT usage in Internal communication and Administrative quality of principals (N=91)

		ICT usage in internal communication	Administrative quality of principals
ICT usage in internal communication	Pearson Coefficient Sig. (2-tailed) N	1	.426 .000
Administrative quality of principals	Pearson Coefficient Sig. (2- tailed) N	90 .426 .000 90	90 1 90

Correlation is significant at 0.00 levels (2-tailed).

From table 4.13.2 there was statistically significant positive correlation between ICT usage in school internal communication and administrative quality of principals ($r=.426$; $p<.05$). Since, correlation was statistically significant, the hypothesis that, 'there was no statistically significant relationship between ICT usage in school internal communication and administrative quality of principals was rejected.

Table 4.14: Coefficients- Output of ICT Usage in Internal Communication and Administrative Quality of principal

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**95.0% Confidence Interval for B**	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.350	.186		12.663	.000	1.983	2.716
Internal Communication	.355	.060	.418	5.935	.000	.237	.473

a. Dependent Variable: Administrative Quality of principals

$Y = \alpha + \beta x + \varepsilon$

Administrative Quality of principals = 2.350 + 0.355x + error term.

From table 1.14, slope coefficient for ICT usage in school internal communication was .355, implying that administrative quality of principals improved by 0.355 units for each one-unit increase in ICT usage in internal communication. Similarly, an improvement in ICT usage in internal communication by one standard deviation resulted into improvement in administrative quality of principals by .418 standard deviations.

This implied that principals who highly incorporate ICT usage in internal communication are likely to record high administrative quality in public secondary schools. This agreed with (Robert, 2010) whose study confirmed that use of ICT was handy in making information available with a single click of the button. Similarly, (Etudor-Eyo, Ante and Emach, 2011), study in Nigeria, recorded high correlation between use of ICT and effectiveness of the administrators' communication.

4.5: Relationship between ICT Usage in Record keeping and Administrative quality of principals in Homabay

4.5.1 Introduction

The second research objective investigated the relationship between ICT usage in record keeping and administrative quality of principals. The objective was explored first, by using descriptive statistics to find views of the principals, deputy principals and ICT teachers on ICT usage in record keeping, inferential statistics tested hypothesis on the relationship between ICT usage in record keeping and administrative quality of principals.

Likert scaled itemed questionnaire was used. The items of the questionnaire were indicators of ICT usage in record keeping. The responses were scored using a four-point continuum scale; their views were summarized in percentage, frequencies, mean and standard deviation.

4.5.2 Response from principals on ICT usage in school record-keeping in secondary schools in Homabay

Table4.15 Response from principals on ICT usage in school record keeping (N=91)

Type of Records	1	2	3	4	M	SD
Admissions	60(65.9%)	20(22.0%)	10(11.0%)	1(1.1%)	1.47	0.74
Registration	80(87.9%)	5(5.5%)	5(5.5%)	1(1.1%)	1.20	0.58
Student Attendance	53(58.2%)	35(38.5%)	3(3.3%)	0(0.0%)	1.45	0.56
Personal Bio Data	75(82.4%)	16(17.6%)	0(0.0%)	0(0.0%)	1.18	0.38
Boarding Facilities	65(71.4%)	25(27.5%)	1(1.1%)	0(0.0%)	1.30	0.48
Safety Practices	40(44.0%)	35(38.5%)	12(13.2%)	4(4.4%)	1.78	0.84
Health Services	50(54.9%)	30(33.0%)	10(11.0%)	1(1.1%)	1.58	0.73
Recreational Services	35(38.5%)	40(44.0%)	12(13.2%)	4(4.4%)	1.84	0.82
Transport Services	25(27.5%)	30(33.0%)	28(30.8%)	8(8.8%)	2.21	0.95
Records of Work	50(54.9%)	25(27.5%)	13(14.3%)	3(3.3%)	1.66	0.85
Timetable	62(68.1%)	22(24.2%)	6(6.6%)	1(1.1%)	1.41	0.67
Examination results	70(76.9%)	18(19.9%)	2(2.2%)	1(1.1%)	1.27	0.56
Teaching loads	58(63.7%)	30(33.0%)	3(3.3%)	0(0.0%)	1.40	0.56
Staff attendance	52(57.1%)	28(30.8%)	8(8.8%)	3(3.3%)	1.58	0.79
Promotion/Appointment	38(41.8%)	39(42.9%)	11(12.1%)	3(3.3%)	1.77	0.79
Staff welfare/loans	28(30.8%)	33(36.3%)	22(24.2%)	8(8.8%)	2.11	0.95
Taff leave	52(57.1%)	30(33.0%)	7(7.7%)	2(2.2%)	1.55	0.73
Average					**1.57**	**0.70**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

The principals' response on admission had a mean rating of 1.47 and SD=0.74. This was interpreted to show minimal usage level. The findings revealed that 60(65.9%) of principals strongly agree that they used ICT platform for keeping students' admission records 20(22.0%)

agree while 10(11.0%) and 1(1.1%) of them disagree and strongly disagree respectively that ICT was used for admitting students in school.

Student registration was rated at a mean of 1.20 and a SD= 0.58 by principals. This mean showed minimal usage level, meaning the ICT usage for students' registration was minimal. However, 80(87.9%) principals strongly agree ICT was used for registration exercise and as 5(5.5%) agree, 5(5.5%) and 1(1.1%) of them disagree and strongly disagree respectively.

ICT usage for student attendance scored mean of 1.45 and a SD=0.56. Interpreted to show minimal usage. But 53(58.2%) principals strongly agree that ICT was used for maintaining student attendance record and 35(38.5%) agree while 3(3.3%) disagree.

The use of ICT for personal bio data recorded a mean of 1.10 and SD=0.38 from principals. This showed minimal usage level though 75(82.4%) principals strongly agree that ICT was used in personal bio data management as 16(17.6%) of them agree. No principal disagree.

The use of ICT for keeping records of boarding facilities had a mean rating of 1.30 and SD=0.48. This was interpreted to show minimal usage level. The finding however, showed that 65(71.7%) principals strongly agree that ICT was used for keeping records of boarding facility while 25(27.5% agree 1(1.1%) disagree.

Safety practices recorded a mean rating of 1.78 and SD=0.84, promotion a mean of 1.77 and (SD=0.79), recreational services a mean of 1.84 and (SD=0.82). Each mean was interpreted to show satisfactory usage level. For safety practices, 40(44.0%) and 35(38.5%) principals strongly agree and agree respectively for its use with 12(13.2%) and 4(4.4%) of them disagree and strongly disagree respectively that ICT was used for safety practices in public secondary schools.

Concerning Promotion, 38(41.8%) and 39(42.9%) principals strongly agree and agree that ICT was used for the same as 11(12.1%) principals disagree 3(3.3% strongly disagree. As regards use of ICT in keeping records of recreational services, 35(38.5%) and 40(44.0%) principals strongly agree and agree respectively while some 12(13.2%) and 4(4.4%) of them disagree and strongly disagree respectively.

Transport services had mean rating of 2.21 and (SD=0.95) and staff welfare records had mean rating 2.11 and (SD=0.95) from principals' responses. Interpretation of both means showed satisfactory usage level. However, only 25(27.5%) and 28(30.8%) principals strongly agree that ICT was used in management of transport services and staff welfare records respectively, 30(33.0%) and 33(36.3%) principals agree that ICT was used for the management of transport services and staff welfare records respectively. Only 28(30.8%) and 22(24.2%) of them disagree while 8(8.8%) principals strongly disagree that ICT was used.

Use of ICT for managing examination results had a mean rating of 1.27 with a (SD=0.56). This showed minimal usage level. However, 70(76.9%) principals strongly agree that it was used. As 18(19.8%) agree that ICT was used in that regard, 2(2.2%) and 1(1.1%) of them disagree and strongly disagree respectively.

ICT usage for keeping records of health services had a mean rating of 1.58 and SD=0.73. This showed satisfactory level of usage. The finding was corroborated by 50(54.9%) and 30(33.0%) principals who strongly agree and agree respectively while 10(11.0%) and 1(1.1%) of them disagree and strongly disagree respectively.

ICT usage for keeping records of teachers' workloads had a mean rating of 1.66 and (SD=0.85), interpreted to show satisfactory usage level. This finding was reflected by

50(54.9%) and 25(27.5%) principals strongly agree and agree respectively as only 13(14.3%) and 3(3.3%), principals disagree and strongly disagree respectively.

ICT usage for timetables had a mean of 1.41 (SD=0.67), interpreted to show minimal usage level. Whereas 62(68.1%) principals strongly agree as 22(24.2%) agree. Meanwhile 6(6.6%) and 1(1.1%) of principals disagree and strongly disagree respectively.

Use of ICT in keeping records of teaching loads had a mean of 1.40 and SD=0.56 which showed minimal usage level. However, 58(63.7%) principals strongly agree and 30(33.0%) agree with only 3(3.3%) of them disagree.

Use of ICT in keeping records for staff attendance had mean of 1.77 and (SD=0.79). It was interpreted to show satisfactory level of usage. 55(57.1%) principals strongly agree and 28(30.8%) agree, at the same time 8(8.8%) and 3(3.3%) disagree and strongly disagree respectively with the finding that ICT was satisfactorily used in keeping staff attendance records.

The average mean rating of **1.57** and SD=0.70 indicated satisfactory usage level. This meant that principals agreed that ICT usage for record keeping in secondary schools in Homabay was satisfactory.

4.5.3 Response from deputy principals on ICT usage in record-keeping in secondary schools in Homabay.

Table 4.16: Response from deputy principals on ICT Usage in Record Keeping in secondary schools in Homabay (N=91)

Record keeping aspects	1	2	3	4	Mean	SD
Admission	50(54.9%)	39(42.9%)	2(2.2%)	0(0.0%)	1.47	0.43
Registration	48(52.7%)	40(44.0%)	3(3.3%)	0(0.0%)	1.51	0.85
Student attendance	0(0.0%)	7(7.7%)	39(42.9%)	45(49.4%)	3.42	0.64
Personal bio data	40(44.0%)	27(29.7%)	9(9.9%)	5(5.5%)	1.11	0.90
Boarding facility	45(49.4%)	35(38.5%)	9(9.9%)	2(2.2%)	1.65	0.52
Safety practices	42(46.2%)	34(37.4%)	12(13.2%)	2(2.2%)	1.69	0.87
Health services	49(42.8%)	27(29.7%)	13(14.3%)	2(2.2%)	1.65	0.71
Recreational activity	15(16.5%)	35(38.5%)	21(23.1%)	20(22.0%)	2.51	0.97
Transportation activity	21(23.1%)	33(36.3%)	25(27.4%)	12(13.2%)	2.31	0.92
Teacher's record of work	37(40.7%)	45(49.4%)	8((8.8%)	1(1.1%)	1.70	0.86
Time table	55(60.4%)	30(33.0%)	5(5.5%)	1(1.1%)	1.47	0.91
Examination results	54(59.3%)	30(33.0%)	6(6.6%)	0(0.0%)	1.45	0.67
Teaching loads	59(64.8%)	20(22.0%)	12(13.2%)	0(0.0%)	1.48	0.84
Staff attendance/ development	44(48.4%)	33(36.3%)	14(15.3%)	0(0.0%)	1.67	0.89
Promotion	29(31.9%)	42(46.2%)	11(12.0%)	9(9.9%)	2.00	0.78
Loans	30(33.0)	21(23.1%)	28(30.7%)	12(13.2%)	2.24	0.82
Leaves	43(47.3%)	20(22.0%)	12(13.2%)	16(17.5%)	2.01	0.56
Average					**1.11**	**0.71**

KEY: Strongly Agreed (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

The deputy principals' response on admissions had a mean rating of 1.47 (SD=0.43) showing minimal usage level. This was reflected by 50(54.9%) deputies who strongly agree and 39(42.9%) of them agree that ICT was used for keeping admission records while only 2(2.2%) deputies disagree.

ICT usage for registration purposes had a mean of 1.51 (SD= 0.85), interpreted to show satisfactory usage. This meant that use of ICT for student registration was at its satisfactory level. This finding was corroborated by 48(52.7%) and 40(44.0%) deputy principals strongly agree and agree respectively that ICT was used for registration purposes only 3(3.3%) of deputies disagree.

However, mean rating of 3.42 (SD=0.64) for ICT usage in keeping students' attendance record was posted. The mean was interpreted to show regular usage level. However, none of the deputy principals strongly agree and only 7(7.7%) of them agree. The finding revealed that deputy principals refuted the fact that ICT was used for keeping students' attendance records. As was corroborated by 39(42.9%) and 45(49.4%) deputies who disagree and strongly disagree that ICT was used in that line.

The aspect of personal bio data recorded a mean of 1.11 (SD=0.90). This mean showed minimal usage. This was reflected by 40(44.0%) deputy principals who strongly agree that the technology was used for keeping personal bio data. Whereas 27(29.7%) deputies agree 9(9.9%) and 5(5.5%) of them disagree and strongly disagree respectively.

Use of ICT for keeping boarding facility, health services and safety practices recorded similar mean of 1.65 (SD=0.52), 1.65 (SD=0.71), and 1.65 (SD=0.87) respectively from deputy principals' responses. Each mean was interpreted to show satisfactory usage. Therefore, the Deputies confirmed that ICT usage for the three stated aspects was at satisfactory level in public secondary schools. This was further reflected by 45(49.4%), 49(52.8%), and 42(46.2%) deputies who strongly agree that ICT was used for the purpose of keeping records of boarding facilities, health services and safety practices respectively. As 35(38.5%), 27(29.7%) and 34(37.4%) deputies agree that the technology was used in those respects respectively. While

9(9.9%), 13(14.3%) and 12(13.2%) of them disagree as 2(2.2%) deputies each strongly disagree that ICT was satisfactorily used in regard to the three aspects respectively.

Deputy principals' response on ICT usage in keeping records of recreational activity and transport activity had mean rating of 2.51 (SD=0.97) and 2.31 (SD=0.92) respectively. Each mean interpreted to show satisfactory usage levels. However, only 16.5% and 23.1% deputies strongly agree to the fact that ICT was used for keeping records of recreational and transportation activities as 35(38.5%) and 33(36.3%) of them agree with the same. While 21(23.1%) and 25(27.4%) deputies disagree, 20(22.0%) and 12(13.2%) of them strongly disagree respectively.

The deputy principals' response on ICT usage for keeping teachers' records of work posted a mean of 1.70 (SD=0.86) which showed satisfactory usage level. With 37(40.7%) deputies who strongly agree that ICT was used satisfactorily for keeping teachers record of work as 45(49.4%) others agree. However, 8(8.8%) and 1(1.1%) of them disagree and strongly disagree respectively.

ICT usage for timetable making, and keeping records for examination results, and teaching loads recorded mean rating of 1.47 (SD=0.91), 1.45 (SD=0.67), and 1.48 (SD=0.84) respectively. These means showed minimal level usage. This meant that the use of ICT for keeping record of timetables, exam results and teaching loads was minimal. Even though, 60.4%, 59.3%, and 64.8% deputy principals strongly agree that ICT was used for the named purposes in public secondary schools in Homabay County. Whereas 30(33.0%), 30(33.0%) and 20(22.0%) others agree, 5(5.5%), 6(6.6%) and 12(13.2%) deputies disagree that the technology was only used for making timetables 1(1.1%) deputy strongly disagree that ICT was used for making timetables.

Deputy principals' responses on use of ICT for keeping records of promotion, loans, and leave issues had mean rating of 2.00 (SD=0.78), 2.24 (SD=0.82) and 2.01 (0.56) respectively. Those means were interpreted to show satisfactory usage. However, only few deputies accepted that the technology was satisfactorily used in keeping record of the named aspects as reflected by 29(31.9%), 30(33.0%), and 43(47.3%) strongly agree respectively as 42(46.2%), 21(23.1%) and 20(22.0%) other deputies agree. On the other hand, 11(12.0%), 28(30.7%) and 12(13.2%) disagree that ICT was used in those aspects, 9(9.9%), 12(13.0%), and 16(17.5%) others strongly disagree respectively.

The average mean of **1.11** (SD=0.71) was interpreted to show minimal usage level. This meant that deputies agreed that ICT usage in record keeping was at its minimal level in Homabay.

4.5.4 ICT teachers in charge response on ICT usage in record-keeping in Homabay.

Table 4.17: ICT teachers' responses on ICT usage in record-keeping in secondary schools in Homabay (N=91)

Record keeping aspects	1	2	3	4	Mean	SD
Admission	62(68.1%)	17(18.7%)	12(13.2%)	0(0.0%)	1.45	0.55
Registration	65(71.4%)	21(25.3%)	3(3.3%)	0(0.0%)	1.24	0.57
Student attendance	35(38.5%)	28(30.8%)	28(30.8%)	0(0.0%)	1.81	0.65
Personal bio data	27(29.7%)	33(36.3%)	24(26.4%)	7(7.7%)	2.12	0.89
Boarding facilities	39(42.8%)	28(30.8%)	24(26.4%)	0(0.0%)	1.81	0.75
Safety practices	35(38.5%)	29(31.8%)	20(22.0%)	7(7.7%)	1.99	0.78
Health services records	42(46.2%)	18(19.5%)	31(34.0%)	0(0.0%)	1.88	0.82
Recreational activities record	19(20.9%)	18(19.5%)	21(23.0%)	33(36.3%)	2.75	0.97
Transport activities records	9(9.9%)	20(22.0%)	33(36.3%)	29(31.8%)	2.90	0.99
Teachers record of work	47(51.6%)	28(30.8%)	7(7.7%)	9(9.9%)	1.84	0.70
Time table	59(64.8%)	17(18.7%)	10(11.0%)	5(5.5%))	1.57	0.76
Examination results	70(76.9%)	10(11.0%)	7(7.7%)	4(4.4%)	1.40	0.63
Teaching loads	39(42.8%)	30(33.0%)	22(24.2%)	0(0.0%)	1.81	0.78
Staff attendance/dev.	30(33.0%)	32(35.2%0	19(20.8%)	10(1.0%)	2.01	0.73
Promotions	17(18.7%)	35(38.5%)	33(36.3%)	6(6.6%)	2.31	0.97
Loans	22(24.2%)	21(23.0%)	28(30.8%)	20(22.0%)	2.51	0.38
Leaves	40(44.0%)	31(34.0%)	20(22.0%)	0(0.0%)	1.76	0.25
Average					**1.95**	**0.63**

KEY: Strongly Agree (SA) =4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

The ICT teachers in charge response on usage of ICT in admissions recorded mean of 1.45(SD=0.55). This mean was interpreted to show minimal usage. However, 62(68.1%) ICT

teachers strongly agree that ICT was used keeping records of admission, 17(18.7%) agree with the same while 12(13.2%) disagree.

For registration the ICT teachers in charge response recorded a mean of 1.24 (SD=0.57). This meant that ICT usage was at minimal level. 65(71.4%) ICT teachers in charge strongly agree that the technology was used in their school for keeping registration record as 21(25.3%) of them agree and at the same time 3(3.3%) disagree.

Usage of ICT in keeping records of personal bio data, recreational activities, transport activities, teaching loads, promotion and loans, each posted mean of 2.12 (SD=0.89), 2.75 (SD=0.97), 2.90 (SD=0.99), 2.01(SD=0.73), 2.31(SD=0.97), and 2.51(SD=0.38) respectively. Each mean was interpreted to show satisfactory usage level. Meaning, according to ICT teachers in charge, ICT usage in keeping records of the listed aspects was satisfactory. Never the less, few ICT teachers attested to that. This was reflected by 27(29.7%), 19(20.9%), 9(9.9%), 30(33.3%), 17(18.7%), and 22(24.2%) ICT teachers in charge respectively strongly agree with the same. However, 18(19.5%), 20(22.0%), 30(33.0%), 35(38.5%), and 21(23.0%) ICT teachers respectively agree that the technology was used for sited purposes. While 24(26.4%), 21(23.0%), 33(36.3%), 22(24.2%), 33(36.3%) and 28(30.8%) ICT teachers in-charge disagree, 7(7.7%), 33(36.3%), 29(31.8%), 6(6.6%) and 20(22.0%) strongly disagree that ICT usage for keeping records for personal bio data, recreational activities, transport activities, promotion and loans respectively was not satisfactory.

Use of ICT for keeping records of boarding facility, safety practices and health services recorded mean ratings of 1.81(SD=0.75), 1.99(SD=0.78), and 1.88(SD=0.82) respectively from ICT teachers in charge responses. Each mean showed satisfactory usage level. Meaning the ICT teachers in charge had the opinion that use of ICT for keeping records of the above-

named aspects was satisfactory. This finding was reflected by 39(42.8%), 35(38.5%), and 42(46.2%) ICT teachers who strongly agree at the same time 28(30.8%), 29(31.8%) and 18(19.5%) of them respectively agree with the same. Meanwhile 24(26.4%), 20(22.0) and 31(34.0%) ICT teachers disagree as 7(7.7%) others strongly disagree that ICT was satisfactorily used for keeping records of safety practices.

The ICT teacher's response in aspects of records of work and timetable were rated at mean of 1.84(SD=0.70) and 1.57(SD=0.76) respectively. Therefore, according to ICT teachers in charge, application ICT in keeping teachers' records of work and timetables was satisfactory. This was reflected by 47(51.6%) and 59(64.8%) ICT teachers in charge who strongly agree while 28(30.8%) and 17(18.7%) others respectively agree that ICT was used in the two aspects. On the opposite, 7(7.7%) and 10(1.0%) disagree as 9(9.9%) and 5(5.5%) others strongly disagree respectively.

However, use of ICT in keeping examination results records realized mean of 1.40(SD=0.63). Although this mean was interpreted to mean minimal usage level, ICT teachers in charge strongly agreed that ICT platform was used for keeping examination results records. This was reflected by 70(76.9%) ICT teachers in charge strongly agreeing and 10(11.0%) others agreeing, with 7 (7.7%) and 4(4.4%) respectively disagree and strongly disagree with the finding.

ICT teachers' response regarding ICT usage in record-keeping posted average mean of **1.95**(SD=0.65) which was interpreted to show satisfactory usage level. This meant that according to ICT teachers in charge, use of ICT for record keeping was satisfactory.

4.5.4.1: Summary of average mean for principals, deputy principals and ICT teachers in charge on ICT usage in record keeping.

Table 4.18: Average mean rating of Principals, Deputy principals, and ICT teachers in charge on ICT usage in record keeping.

Respondents	Average mean
Principals	1.57
DPR	1.11
ICT teachers in charge	1.95
Overall mean	**1.54**

In conclusion, with an overall mean of 1.54, the ICT usage in record keeping was at satisfactory level. The principals, deputy principals, and ICT teachers in charge were even that use of ICT in keeping records was satisfactory. It was distinct that deputy principals' mean of 1.11 reflected minimal usage of ICT in record keeping. Hence, they attested to the fact that ICT was minimally used for record keeping.

4.5.5: T-test of Deputy principals and ICT teachers' responses on ICT usage in record-keeping in Homabay.

Table 4.19:T-Test of Deputy principal and ICT Teacher Responses on ICT Usage in Record - Keeping in public Secondary Schools in Homabay County N=91)

Item	Respondent	Mean	SD	T-test
Student	DPR	1.47	0.43	(t (180) =3.769, P=.007
Admission	ICT Tcr	1.45	0.55	
Student	DPR	1.51	0.55	(t (180) =3.611, P=.941
Registration	ICT Tcr	1.24	0.57	
Student	DPR	3.42	0.64	(t (180) =2.003, P=.328
attendance	ICT Tcr	1.81	0.65	
Personal	DPR	1.11	0.90	(t (180) =.439, P=.432)
Biodata	ICT Tcr	2.12	0.89	
Boarding	DPR	1.65	0.52	(t (180) =.028, P=.614)
Facilities	ICT Tcr	1.81	0.75	
Safety	DPR	1.69	0.87	
Practices	ICT Tcr	1.99	0.78	(t (180) =.288, P=.084)
Health	DPR	1.65	0.71	(t (180) =.300, P=.106)
services	ICT Tcr	1.88	0.82	
Records				
Recreational	DPR	2.51	0.97	(t (180) =1.161, P=.049)
Activities	ICT Tcr	2.75	0.97	
Transport	DPR	2.31	0.92	(t (180) =.947, P=.721)
Activities	ICT Tcr	2.90	0.99	
Records				
Teachers	DPR	1.70	0.86	(t (180) =.001, P=.306)
Record of	ICT Tcr	1.84	0.70	
Work				
Timetable	DPR	1.47	0.91	(t (180) =.444, P=.192)
	ICT Tcr	1.57	0.76	
Examination	DPR	1.45	0.67	(t (180) =.718, P=.063)
Results	ICT Tcr	1.40	0.63	
Teaching	DPR	1.48	0.84	
Loads	ICT Tcr	1.81	0.78	(t (180) =.777, P=.648)
Staff	DPR	1.67	0.89	
Attendance	ICT Tcr	2.01	0.73	(t (180) =2.163, P=.095)
/Dev.				
Staff	DPR	2.00	0.78	
Promotions	ICT Tcr	2.31	0.97	(t (180) =.506, P=.057)
Staff Loans	DPR	2.24	0.82	
	ICT Tcr	2.51	0.38	(t (180) =.004, P=.190)
Staff Leaves	DPR	2.01	0.56	(t (180) =.438, P=.741)
	ICT Tcr	1.76	0.25	
Overall	DPR	1.11	0.71	(t (180) =.409, P=.325)
Rating	ICT Tcr	1.95	0.63	

From table 4.19, it was observed that according to deputy principals a mean of 1.11(SD=071), ICT usage for record keeping was minimal while ICT teachers with mean of 1.95(SD=0.63), was satisfactory. These means were significantly different. However, (t (180) =.409, P=.325, with level of significance based on P<.05) hence the position of deputy principals and ICT teachers on ICT usage for record keeping was not different. Therefore, deputy principals and ICT teachers posted different opinions that there was significant positive relationship between ICT usage in record keeping and administrative quality of principals of public secondary schools in Homabay County.

4.5.6 Interview schedule data for Principals, deputy principals, and ICT Teachers on ICT usage in Record Keeping.

Table 4.20: Interview schedule data from Principals, deputy principals, and ICT Teachers on ICT usage in Record Keeping.

Aspects of record keeping	Percentage
Principals N=20	
Registration	6(30%)
Personal bio data	4(20%)
Examination analysis	3(15%)
Time table	3(15%)
Boarding facility	2(10%)
Teaching load	2(10%)
Deputy principal (N=20)	
Registration	6(30%)
Personal bio data	3(15%)
Examination analysis	4(20%)
Time table	2(10%)
Boarding facility	4(20%)
Teaching load	3(15%)
Registration	5(25%)
Personal bio data	3(15%)
Examination analysis	6(30%)
Timetabling	2(10%)
Boarding facility	3(15%)
Teaching loads	2(10%)

Table 4.20 shows data for interviews conducted on principals, deputy principals, and ICT teachers on ICT usage in record keeping management. It was observed that ICT was commonly used for registration purposes. This information was offered by 30% principals and 30% deputy principals. However, majority of ICT teachers – 25%, attested to the fact that ICT was commonly used for Examination analysis.

Principals also confirmed that ICT platform was commonly used in keeping personal bio data, examination analysis, boarding facility, and teaching loads records in priority order. This was corroborated by the following percentage of principals who were interviewed on each aspect respectively; 20%, 15%, 10% and 10%. It was noted that contrary opinions were advanced by deputy head teachers and ICT teachers on use of ICT for management of individual aspect of record keeping as indicated in table 4.20.

During interview a principal said:

> *'Surely, I can confirm to you that ICT, especially computer has eased my work in maintaining teachers' work records, student attendance, and staff attendance. These records are at my disposal at all times just with a click as the file I get the record I want.'*

Another principal had this to say:

> *'I always work with ICT Teachers and Deputy Head teacher in ICT operations in school in regard to management of various school records.'*

An ICT teacher said:

> *'For me and I believe other teachers too, the ICT platform is commonly used for analysis of examination results.'*

The other ICT teacher had this to say:

> *'We commonly use ICT platform in keeping both internal and external examination result, class attendance registers and time tables. These are safely kept in a data base and are readily available in demand.'*

A non-teaching staff representative had this to say:

> *'We easily access our payroll data and other information concerning statutory deduction from computers on request from accounts department.'*

One of the SCQASO had this to say:

> *'Principals timely submit the termly and annual teacher's performance and appraisal development reports to our offices through ICT platforms. On our school visits we access documents like admissions, registration and others from computers and in prints displayed on boards.'*

A deputy principal had this to say:

> *'The ICT has enabled me to shorten the period used to take to prepare the master time table. Through technology, minor mistakes and lesson collusion are minimized.'*

In all schools, time tables were openly displayed in staffrooms and in principals' and deputy principals' offices, in all cases indicating respective teacher, classroom, and subject lesson against expected time of attendance. The school routine was also infused in teaching time table to include breaks, lunch, games and prep times. In line with this, Dawo, Kawasonga & Gogo (2015), analyzed relationship between school workload management and teacher transfer intention found out that records were a buffer against Head teachers' ad hoc management initiatives sometimes by guesswork.

4.5.7: ANOVA for deputy principals' and ICT teachers' outcomes on relationship between ICT usage in record keeping and admininisteative quality of principals

Study was founded on the hypothesis that there was no relationship between ICT usage in record-keeping and administrative quality of principals.

Null hypothesis was tested to investigate whether there was statistically positive significant relationship between ICT usage in school record-keeping and administrative quality of principals. Pearson Moment Coefficient analysis test was conducted, with scores on ICT usage in record-keeping as independent variable and administrative quality of principals as dependent variable. Likert scaled responses in each item was computed to create approximately continuous variable within open interval of 1 to 4, that was suitable for use as

parametric data, as explained by Sullivan and Artino (2013), where high scale ratings implied perceived high level of ICT usage in school record-keeping and administrative quality of principals.

4.5.8 Analysis of variance for deputy principals' Outcomes on relationship between ICT usage in record keeping and administrative quality ocf principals

Table 4.21.1: ANOVA for Deputy principals' Outcomes on relationship between ICT usage in Record- keeping and Administrative Quality of principals (N=91)

		ICT usage in record keeping	Administrative quality of principals
ICT usage in record keeping	Pearson Coefficient Sig.(2-tailed) N	1	.361 .000
Administrative quality of principals	Pearson Coefficient Sig. (2-tailed) N	90 .361 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed).

Finding in Table 4.21.1 showed statistically significant positive correlation between ICT usage in record- keeping and administrative quality of principals in public secondary schools ($r=.361$; $p=0.00<.05$). In this case correlation was statistically significant, the hypothesis that, 'there was no statistically significant, relationship between ICT usage in record-keeping and administrative quality of principals was rejected.

4.5.9 Analysis of variance for ICT teachers' Outcomes on relationship between ICTusage in Record keeping and administrative Quality of principals

Table 4.21.2: ANOVA for ICT teachers' Outcomes on Relationship between ICT Usage in Record- Keeping and Administrative Quality of principals (N=91)

		ICT usage in record keeping	**Administrative Quality of principals**
ICT usage in record keeping	Pearson Coefficient	1	.402
	Sig. (2-tailed)		.000
	N	90	90
Administrative Quality of principals	Pearson Coefficient	.402	1
	Sig. (2- tailed)	.000	
	N	90	90

Correlation is significant at 0.00 levels (2-tailed)

Finding from Table 4.21.2 showed statistically significant correlation between ICT usage in record-keeping and administrative quality of principals (r=.402; p=0.00<.05) existed. Since correlation was statistically significant, hypothesis that, 'there was no statistically significant relationship between ICT usage in record-keeping and administrative quality of principals was rejected.

4.5.10: Coefficient-Output of ICT usage in record-keeping and administrative quality of principals

Table 4.22: Coefficients-Output of ICT Usage in Record-Keeping and Administrative Quality of principals

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.097	.200		10.511	.000	1.703	2.491
ICT usage in record keeping	.410	.060	.466	6.786	.000	.291	.530

Dependent Variable: Administrative Quality of principals

Model ($Y= \alpha + \beta x + \varepsilon$)

Administrative Quality of Principals = 2.097 + 0.410x + error term.

The slope coefficient for ICT usage in record-keeping was .410, implied that administrative quality of principals improved by 0.410 units for each one unit rise in ICT usage in record-keeping. Improvement on ICT usage in record-keeping by one standard deviation reflected on improvement of administrative quality of principals by .466 standard deviations. This suggested that principals who appropriately in cooperated ICT usage in school record keeping presented high administrative quality in public secondary schools.

4.6: Relationship between ICT usage in Human resource mmanagement and Administrative Quality of principals in Homabay.

Descriptive statistics explored views of the respondents on ICT usage in human resource management, and inferential statistics tested hypothesis on relationship between ICT usage in human resource management and administrative quality of principals.

4.6.1: ICT Usage in Human Resource management

To explore views of respondents (Principals, Deputy principals and ICT teachers), a Likert scaled itemed questionnaire was used. The items of the questionnaire were indicators of ICT usage in human resource management in schools. The scores were summated to measure the respondents' opinion regarding ICT usage on human resource management.

Human resource management was explored using five main sub-themes namely; personnel management, supervisory tasks, managing students, management of BOM and management of other stakeholders. Data from respondents were summarized in percentage, frequencies, mean and standard deviation separately for each sub-theme.

4.6.2: Response from deputy principal on ICT usage in personnel management and administrative quality of principals.

Table 4.23: Responses from deputy principals on ICT Usage in Personnel Management Homabay (N=91)

Indicator	1	2	3	4	Mean	SD
Recruitment process	35(38.5%)	37(40.7%)	10(11.0%)	9(9.9%)	1.92	0.84
Development /training	36(39.6%)	40(44.0%)	9(9.9%)	6(6.6%)	1.93	0.83
Compensation	28(30.8%)	39(43.0%)	14(15.4%)	10(11.0%)	2.10	0.77
Integration	24(26.4%)	41(45.1%)	14(15.4%)	12(13.2%)	2.10	0.81
Separation	24(26.4%)	43(47.3%)	20.(22.0%)	4(4.4%)	2.00	0.97
Average					**2.01**	**0.84**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

Deputy principals' responses on ICT usage in recruitment aspect had a mean of 1.92(SD=0.84). This was interpreted to show satisfactory ICT usage in recruitment process, meaning, according to deputy principals, ICT was satisfactorily used for the purpose of recruitment. This was reflected by 35(38.5%) deputies who strongly agree and 37(30.7%) others agree with the finding. However, 10(11.0%) and 9(9.9%) of them disagree and strongly disagree respectively with the narrative.

Development and training issues recorded mean of 1.93 (SD=0.83). The mean showed satisfactory level sage of ICT in that respect. This finding was corroborated by 36(39.6%) and 40(44.0%) deputies who strongly agree and agree that ICT was satisfactorily used in regard to development and training, on the other hand 9(9.9%) deputies as well as 6(6.6%) others disagree and strongly disagree respectively.

The aspect of compensation, integration and separation posted mean of 2.10 (SD=0.77), 2.10 (SD=0.81), and 2.00 (SD=0.97) respectively. Each mean showed satisfactory usage level. However, few deputy principals in their response for each aspect strongly agree, as was

reflected by 28(30.8%), 24(26.4%), and 24(26.4%). The other 39(43.0%), 41(45.1%), and 43(47.3%) respectively agree with the finding. Nevertheless, 14(15.4%), 14(15.4%), and 20(22.0%) respectively disagree while 10(11.0%), 12(13.2%) and 4(4.4%) deputies strongly disagree that ICT was satisfactorily used in the management of compensation, integration and separation.

The average mean of 2.10(SD=0.84) indicated satisfactory usage level. This meant that the deputy headteachers agreed that ICT usage in personnel management was satisfactory.

4.6.3 Response from ICT teachers in charge on ICT usage in personnel maagement

Table 4.24: Reponses from ICT teachers in-charge on ICT Usage in personnel management in public secondary schools in Homabay County (N=91)

Indicators	1	2	3	4	Mean	SD
Recruitment process	41(45.1%)	36(40.0%)	5(5.5%)	9(9.9%)	1.80	0.70
Development/training	40(44.0%)	36(40.0%)	10(11.0%)	5(5.5%)	1.75	0.60
Compensation	29(32.0%)	43(47.3%)	12(13.2%)	7(7.7%)	1.97	0.70
Integration	27(30.0%)	45(49.5%)	10(11.0%)	9(9.9%)	2.10	0.78
Separation	27(30.0%)	35(38.5%)	25(27.5%)	4(4.4%)	2.01	0.86
Average					**1.93**	**0.73**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

ICT teachers in charge response on recruitment process recorded a mean rating of 1.80(SD=0.70). The mean showed satisfactory usage level. This meant that ICT teachers in charge opined that ICT usage for recruitment in public secondary schools in Homabay County was satisfactory. 41(45.1%), strongly agree and 36(40.0%) others agree. At the same time 5(5.5%) and 9(9.9%) disagree and strongly disagree respectively with that position.

Aspect of development /training posted mean of 1.75(SD=0.60) from ICT teachers in charge. This showed satisfactory level of ICT usage for development/training. Therefore, ICT teachers in charge agreed that ICT usage for development/training in secondary schools in

Homabay was satisfactory. A position taken by 40(44%) of them who strongly agree as 36(40.0%) others agree. But while 10(11.0%) disagree the other 5(5.5%) strongly disagree.

Compensation, integration and separation aspects recorded mean of 1.97 (SD=0.70), 2.10 (SD=0.78), and 2.01 (SD=0.86) respectively. Each mean showed satisfactory usage level of ICT for respective aspect. However, few ICT teachers in charge strongly agreed with the interpretation as 29(32.0%), 27(30.0%), and 27(30.0%) respectively strongly agree while a good percentage of them agreed as reflected by 43(47.3%), 45(49.5%), and 35(38.5%) ICT teacher in-charge agree. Only 12(13.2%), 10(11.0%), and 25(27.5%) respectively disagree when 7(7.7%), 9(9.9%), and 4(4.4%) of them strongly disagree respectively.

However, average mean of 1.93 (SD=0.73) showed satisfactory usage level. This meant that ICT teachers in charge held the position that ICT usage for personnel management was satisfactory.

4.6.4 T-Test of deputy principals and ICT teachers Responses on ICT usage in personnel management

Table 4.25:T-Test of Deputy principals' and ICT Teachers' Responses in ICT usage on Personnel Management in Secondary Schools N=91)

Item	Respondent	Mean	SD	T-test
Recruitment	DPR	1.92	0.84	t (180) =-1.642, P=.052
Process	ICT Tcr	1.80	0.70	
Development	DPR	1.93	0.83	t (180) =.978, P=.091
and Training	ICT Tcr	1.78	0.60	
Compensation	DPR	2.10	0.77	t (180) =-1.055, P=.310
	ICT Tcr	1.97	0.70	
Integration	DPR	2.10	0.81	(t (180) =.45, P=.589)
	ICT Tcr	2.10	0.78	
Separation	DPR	2.00	0.97	
	ICT Tcr	2.01	0.86	(t (180) =1.426, P=.627)
Overall Rating	DPR	2.01	0.84	(t (180) =.119, P=.330)
	ICT Tcr	1.93	0.73	

From Tables 4.25, it was observed that according to deputy principals at a mean of **2.01 (SD=0.84)**, ICT usage in personnel management was satisfactory. ICT teachers with mean of **1.93 (SD=0.73),** the use was similarly satisfactory. The means were insignificantly different (t (180) =.119, P=.330, with level of significance based on P<.05). The deputy principals and ICT teachers held similar position that there was significant relationship between ICT usage in personnel management and administrative quality of principals.4.6.4.1: Interview schedule data for principals, deputy principals and ICT teachers on ICT usage in human resource management

Table 4.26: Principals', Deputy principals' and ICT teachers' interview data on ICT usage on Human resource management

Aspects of human resource management	Percentage
Principals N=20	
Personnel	8(40%)
Supervisory	4(20%)
Students	5(25%)
BOM	1(5%)
Other stakeholders	2(10%)
Deputy principals(N=20)	
Personnel	7(35%)
Supervisory	6(30%)
Students	4(20%)
BOM	2(10%)
Other stakeholders	3(15%)
ICT Teachers (N=20)	
Personnel	5(25%)
Supervisory	6(30%)
Students	4(20%)
BOM	2(10%)
Other stakeholders	3(15%)

From Table 4.26, forty percent of principals agree that ICT was used in management of school personnel. The other aspects of human resource where ICT usage was realized as was reported from interview of principals were; supervisory, students, BOM and other stakeholders, as reflected by 20%, 25%, 5% and 10% of principals respectively. Interview data for deputy principals showed that ICT was regularly used for personnel management, and followed in order of priority with supervisory, students' management, BOM and other stakeholders. This was reflected by 35%, 30%, 20%, 10% and 15% deputy principals respectively. However, the ICT teachers interviewed had the aspect of supervisory as the aspect where ICT was commonly used followed by personnel, students, other stakeholders and lastly the BOM. Respectively, each aspect had the flowing percentage 30%, 25%, 20%15 and 10% of them.

During the interview, one principal said:

> *'These days we do not go through rigorous work of reading volumes of papers in order to fish out relevant information pertaining to applicant's bio data, academics and other attributes. Access to such information is made easy by the presence of technology. Recruitment process has therefore been made simple by the technology.'*

One SCQASO said*:*

> *'Yes, there is strong relationship between ICT usage in human resource management and administrative quality of principals in public secondary schools. This is the reference memo that followed an SMS to principals to sermon students and staff to a meeting where I was to address them on performance.'*

One of the non-teaching staff representatives had this to say:

> *'We always see our principal and secretary send SMS to people especially to the short-listed persons to attend interviews or collect appointment letters.'*

When probed further he asserted that*:*

> *'Some of my colleagues and I received information to attend interview and collect appointment letters via SMS from secretary.'*

Another SCQASO pointed out that:

'I these days invite principals, BOM, teachers to my meetings through this technology'

The findings gave revealed that ICT platform was used in recruitment process and procedures. It was also found that many principals embraced use of ICT in the process and procedures for staff recruitment, management of students, supervisory tasks, BOM, and stakeholders.

Various memos were posted and seen on notice boards addressing different issues. Student enrolment list printouts were evidently filed. Guidance and counselling notes were available and sample handouts for students were filed. Print outs for BOM training were available in principals' office files.

4.6.5 Analysis of the relationship between Variables (ANOVA) for deputy principals and ICT teachers' outcomes on ICT usage in human resources and administrative quality of principals

Null hypothesis was tested to determine any statistically significant relationship between ICT usage in personnel management and administrative quality of principals. Pearson Moment Coefficient analysis was conducted, with scores on ICT usage in personnel management as independent variable and administrative quality of principals as the dependent variable. To ascertain level of ICT usage in personnel management and administrative quality of principals, frequency of responses was computed.

Table 4.27.1: ANOVA for Deputy principals' Outcomes on Relationship between ICT Usage in personnel management and Administrative Quality of principals (N=91)

		Administrative Quality of principals	ICT usage in Personnel management
Administrative Quality of principals	Pearson Coefficient	1	.496
	Sig. (2-tailed)		.000
	N	90	90
ICT usage in personnel management	Pearson Coefficient	.496	1
	Sig. (2- tailed)	.000	
	N	90	90

Correlation is significant at the 0.00 level (2tailed).

Finding as tabulated on Table 4.28.1 showed statistically significant positive correlation between ICT usage in personnel management and administrative quality of principals in public secondary schools, ($r=.496$; $p<.05$). Correlation being positively significant, the hypothesis 'there was no statistically significant relationship between ICT usage in personnel management and administrative quality of principals was rejected. Therefore, relationship between ICT usage on personnel management and administrative quality of principals existed.

4.6.6 Analysis of variance for ICT teachers' Outcomes on relationship between ICT usage in personnel management and administrative quality of principals

Table 4.27.2: ANOVA for ICT teachers' Outcomes on relationship between ICT Usage in personnel management and Administrative Quality of Principals (N=91).

		Administrative Quality of principals	ICT usage in personnel management
Administrative Quality of principals	Pearson Coefficient	1	.217
	Sig. (2-tailed)		.000
	N	90	90
ICT usage in personnel management	Pearson Coefficient	.217	1
	Sig. (2- tailed)	.000	
	N	90	90

Correlation is significant at the 0.00 level (2tailed).

Findings showed statistically significant positive correlation between ICT usage in school personnel management and administrative quality of principals in public secondary schools, ($r=.217$; $p<.05$). With correlation being statistically significant, the hypothesis, 'there was no statistically significant relationship between ICT usage in personnel management and administrative quality of principals was rejected. Findings in Table 4.28.1 Deputy principals (N=91) and Table 4.28.2. ICT Teacher in charge (N=91) were similar. Both respondents found statistically significant relationship between ICT usage in personnel management and administrative quality of principals.

4.6.7: Response from deputy principals on ICT usage in management of supervisory tasks.

Table 4.28: Responses from deputy principals on ICT Usage in management of supervisory tasks (N=91)

Indicators	1	2	3	4	Mean	SD
Staff records	51(56.0%)	23(25.3%)	10(11.0%)	7(7.7%)	1.96	0.81
Staff meeting	38(41.8%)	36(40.0%)	12(13.2%)	5(5.5%)	1.83	0.70
Teacher motivation	31(34.1%)	41(45.1%)	13(14.3%)	6(6.6%)	1.93	0.79
Job satisfaction	34(37.4%)	36(39.6%)	11(12.1%)	9(9.9%)	1.92	0.81
Involvement in decision making	30(33.0%)	35(38.5%)	16(17.6%)	10(11.0%)	2.10	0.81
Need to value	30(33.0%)	39(43.0%)	14(15.4%)	8(8.8%)	2.00	0.88
In-school staff development	32(35.2%)	33(36.3%)	13(14.3%)	12(13.2%)	2.03	0.73
Teacher assessment	29(31.9%)	34(37.4%)	11(12.1%)	17(18.7%)	2.20	0.78
Average					**2.00**	**0.79**

KEY: Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) =2, Strongly Disagree (SD) =1

Deputy principals' response on use of ICT usage in management of staff records had a mean rating of 1.96 (SD=0.81). This was interpreted to show satisfactory usage level, meaning deputy head principals agreed that application of ICT in management of staff records was

satisfactory. This was reflected by 51(56.0%) of deputies who strongly agree as 23(25.3%) of them agree while 7(7.7%) disagree as 5(5.5%) others strongly disagree.

The aspects of staff meeting, teacher motivation and job satisfaction, recorded mean of; 1.83 (SD=0.70), 1.93 (SD=0.79), and 1.92 (SD=0.81) respectively. Individual mean was interpreted and meant satisfactory level usage. These findings were reflected by 38(41.8%), 31(34.1%), and 34(37.4%) deputies who strongly agree while 5(5.5.0%) and 6(6.6%) and 9(9.9%) respectively disagree and strongly disagree.

Other supervisory tasks like; involvement in decision making, need to value, staff development, and teacher assessment each had the following mean of 2.10 (SD=0.81), 2.00 (SD=0.88), 2.03 (SD=0.73) and 2.20 (SD=0.78) respectively. Each mean showed satisfactory usage level. However, few deputy principals responded to the fact that ICT was satisfactorily used in respect of the stated aspects. This was corroborated by 30(33.0%) deputies each for ICT usage in involvement in decision making, and need to value, 32(35.2%) deputies for in school staff development and 29(31.9%) others for teacher assessment strongly agree with the finding. Similar percentage of deputies agree as reflected by 35(38.5%), 39(43.0%), 33(36.3%), and 34(37.4%) of deputies. Meanwhile, as 16(17.6%), 14(15.4%), 13(14.3%), and 11(12.1%) deputies disagree, 10(11.0%), 8(8.8%), 12(13.2%), and 17(18.7%) others strongly disagree respectively.

The average mean of 2.00 (SD=0.97) showed that ICT usage for the management of supervisory tasks in public secondary school in Homabay county was at satisfactory level.

4.6.8: Response from ICT teachers on ICT usage in supervisory tasks

Table 4.29: ICT Teachers' responses in ICT Usage on Management of Supervisory Tasks (N=91)

Indicator	1	2	3	4	Mean	SD
Staff records	59(64.8%)	20(22.0%)	7(7.7%)	5(5.5%)	1.54	0.69
Staff meeting	43(47.3%)	39(43.0%)	6(6.6%)	3(3.3%)	1.66	0.67
Teacher motivation	29(32.0%)	41(45.1%)	14(15.4%)	7(7.7%)	1.99	0.71
Job satisfaction	33(36.3%)	40(44.0%)	10(11.0%)	8(8.8%)	1.92	0.69
Involvement in decision making	31(34.1%)	38(42.0%)	15(16.5%)	3(3.3%)	1.80	0.73
Need to value	22(24.2%)	42(46.2%)	15(16.5%)	12(13.2%)	2.20	0.79
In-school staff t6development	41(45.1%)	34(37.4%)	11(12.1%)	5(5.5%)	1.78	0.82
Teacher assessment	49(53.8%)	30(33.0%)	8(8.8%)	4(4.4%)	1.62	0.91
Average					**1.81**	**0.75**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Srongly Disagree (SD)=1

ICT teachers in charge response on ICT usage in management of staff records had a mean of 1.54 (SD=0.69). This mean indicated satisfactory usage level hence the ICT teachers in charge reported that ICT usage in the management of staff record was satisfactory. An average number of ICT teachers in charge concurred and was reflected by 59(64.8%) who strongly agree as the other 20(22.0%) agree. At the same time 7(7.7%) and 5(5.5%) of them disagree and strongly disagree respectively.

Teacher assessment scored mean rating of 1.62 (SD=0.91) by ICT teachers in charge. The mean of 1.62 was interpreted to show satisfactory usage level. This was reflected by 49(53.8%) ICT teachers in charge strongly agreeing as 30(53.8%) others agree while 8(8.8%) and 4(4.4%) of them respectively disagree and strongly disagree.

The aspects of staff meeting, teacher motivation, job satisfaction, involvement in decision-making, need to value and in school staff development had mean rating of 1.66 (SD=0.67), 1.99 (SD=0.71), 1.92 (SD=0.69), 1.80 (SD=0.73), 2.20 (SD=0.79) and 1.78 (SD=0.82)

respectively. These mean ratings showed satisfactory usage levels of ICT in each aspect indicated. This meant that ICT teachers' in-charge posited satisfactory usage levels of ICT in those aspects of supervision. The above findings were reflected by 43(47.3), 29(32.0%), 33(36.3%), 31(34.1%), 22(24.2%), and 41(45.1%) ICT teachers in-charge strongly agree that the technology was satisfactorily used for each aspect mentioned as 41(45.1%), 40(44.0%), 38(42.0%), 42(46.2%) and 30(33.0%) others also agree. On the other hand, 6(6.6%), 14(15.4%), 10(11.0%), 15(16.5%), 15(16.5%), and 11(12.1%) respectively disagree, 3(3.3%), 7(7.7%), 8(8.8%), 3(3.3%), 12(13.2%), and 5(5.5%) other deputies strongly disagree respectively.

The average mean of 1.81 (SD=0.75) recorded for ICT usage in supervisory tasks indicated satisfactory level of ICT usage. Therefore, the ICT teachers in charge posited that ICT usage for supervisory was satisfactory.

4.6.9 T-Test for deputy principals and ICTteahers responses on ICT usage in supervisory tasks

Table 4.30: T-Test for deputy principal and ICT Teacher Responses on ICT usage in Supervisory tasks in secondary schools in Homabay N=91)

Item	Respondent	Mean	SD	T-test
Staff Records	DPR	1.96	0.81	t (180) =-2.004, P=.791
	ICT Tcr	1.54	0.69	
Staff Meeting	DPR	1.83	0.70	t (180) =.439, P=.021
	ICT Tcr	1.66	0.67	
Teacher	DPR	1.93	0.79	t (180) =.957, P=.703
Motivation	ICT Tcr	1.99	0.71	
Job	DPR	1.92	0.81	(t (180) =-1.842, P=.000)
Satisfaction	ICT Tcr	1.92	0.69	
Involvement in	DPR	2.10	0.81	
Decision	ICT Tcr	1.80	0.73	(t (180) =.635, P=.937)
Making				
Need to value	DPR	2.00	0.88	(t (180) =1.530, P=.811)
work	ICT Tcr	2.20	0.79	
Staff	DPR	2.03	0.73	(t (180) =.664, P=.092)
Development	ICT Tcr	1.78	0.82	
Teacher	DPR	2.20	0.78	(t (180) =.539, P=.888)
Assessment	ICT Tcr	1.62	0.91	
Overall Rating	DPR	2.00	0.79	(t (180) =.392, P=.530)
	ICT Tcr	1.81	0.75	

From Table 4.30, it was observed that according to Deputy principals mean of 2.00 (SD=0.79), ICT usage for supervisory task was satisfactory and ICT teachers' mean of 1.81 (SD=0.75), ICT usage was satisfactory. The means were not insignificantly different (t (180) =.392, P=.530, and position of deputy principals and ICT teachers on ICT usage for supervisory tasks was not different.

4.6.10:Analysis of variance (ANOVA) for deputy principals and ICT teachers' outcomes on supervisory tasks and administrative quality of principals

Table 4.31.1: ANOVA for deputy principals' Outcomes on Relationship between ICT Usage in supervisory tasks and Administrative Quality of principals (N=91)

		Administrative Quality of principals	**ICT usage in supervisory tasks**
Administrative Quality of principals	Pearson Coefficient	1	.501
	Sig.(2-tailed)		.000
	N	90	90
ICT usage in supervisory tasks	Pearson Coefficient	.501	1
	SIG. (2-tailed)	.000	
	N	90	90

Correlation is significant at the 0.00 level (2-tailed)

Table 4.31.1 showed statistically significant positive correlation between ICT usage in supervisory tasks and administrative quality of principals in public secondary schools (r= .501, p=0.00<.05). In this case, relationship was statistically significant, and so hypothesis that 'there was no statistically significant relationship between ICT usage in supervisory tasks and administrative quality of principals was rejected.

4.6.11 Analysis of variance (ANOVA) for ICTteachers' Outcomes on relationship between ICT usage in supervisory tasks and administrative quality of principals

Table 4.31.2: ANOVA for ICT teachers' Outcomes on Relationship between ICT Usage in supervisory tasks and Administrative Quality of principals (N=91)

		Administrative Quality of principals	ICT usage in supervisory tasks
Administrative Quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.103 .000
ICT usage in supervisory tasks	Pearson Coefficient Sig. (2-tailed) N	90 .103 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed).

Table 4.31.2 showed statistically significant positive correlation between ICT usage in supervisory tasks and administrative quality of principals in secondary schools (r= .103, p=0.00<.05). This relationship was statistically significant positively, hence, hypothesis that 'there was no statistically significant relationship between ICT usage in supervisory tasks and administrative quality of principals was rejected.

4.6.12: Response of deputy principals on ICT usage in students' management

Table 4.32: Deputy principals' Response in ICT Usage on students' management (N=91)

Indicators	1	2	3	4	Mean	SD
Communicating school values	44(48.4%)	24(26.4%)	15(16.5%)	9(9.9%)	1.90	0.79
Setting standards/Goals	40(44.0%)	30(33.0%)	10(11.0%)	11(12.1%)	1.91	0.72
Enrolment/participation	35(38.5%)	30(33.0%)	15(16.5%)	11(12.1%)	2.02	0.75
Guidance/Counselling	30(33.0%)	33(36.3%)	16(17.6%)	9(9.9%)	1.98	1.02
Average					**1.46**	**0.82**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

The deputy principals' response on ICT usage in communicating school values to students had mean rating of 1.90 (SD=0.79). This mean showed satisfactory usage level with 44(48.4%) deputies strongly agreeing that ICT usage was at its satisfactory level in that respect, 24 (26.4%) others agree. While 15(16.5%), and 9(9.9%) of them respectively disagree and strongly disagree.

Similarly, the issue of ICT usage for setting standards and goals had a mean rating of 1.91 (SD=0.72). The mean showed satisfactory usage level. This meant that deputy principals stated that usage of ICT in setting goals and standards for students was satisfactory. As 40(44.0%) deputies strongly agree with finding 30(33.0%) others agree. Nevertheless, similar percentage of 10(11.0%) and 11(12.1%) others disagree and strongly disagree respectively.

ICT usage in enrolment and participation, scored mean of 2.02 (SD=0.75). This mean showed satisfactory usage level. It was corroborated by 35(38.5%) and 30(33.0%) deputies who strongly agree and agree while 15(16.5%) and 11(12.1%) of them respectively disagree and strongly disagree.

Whereas, guidance and counselling issues had a mean rating of 1.98 (SD=1.02) which showed satisfactory usage level and was reflected by 30(33.0%) and 33(36.3%) who strongly agreeing and agreeing respectively, 16(17.6%) and 9(9.9%) others disagree and strongly disagree respectively.

The average mean of **1.46** (SD=0.82) indicated that use of ICT for student management was minimal. This implied that ICT usage in student management according to deputy head teachers was minimal.

4.6.13: Response from ICT teachers in-charge on ICT usage in students' management

Table 4.33: ICT Teachers' Responses on ICT Usage in students' management (N=91)

Indicator	1	2	3	4	Mean	SD
Communicating school values	40(44.0%)	35(38.5%)	9(9.9%)	7(7.7%)	1.81	0.81
Setting standards/goals	46(50.5%)	29(31.9%)	12(13.2%)	4(4.4%)	1.71	0.74
Involvement/participation	40(44.0%)	35(38.5%)	9(9.9%)	7(7.7%)	1.81	0.79
Guidance/counselling	33(36.%)	30(33.0%)	13(14.3%)	15(16.5%)	1.95	0.81
Average					**1.82**	**0.79**

KEY: Strongly Agreed (SA =4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD =1

ICT teachers' response on the use of ICT to communicate values to students scored mean rating of 1.81 (SD=0.91). This mean was interpreted to show satisfactory usage level. This position was reflected by 40(44.0%) ICT teachers who strongly agree as 35(38.5%) others agree. 9(9.9%) and 7(7.7%) deputies respectively disagree and strongly disagree.

The issues of setting standard and goals posted mean score of 1.71 (SD=72) from ICT teachers' response. The mean showed satisfactory level usage, meaning that ICT teachers agreed that the use of ICT for setting standards and goals for students was satisfactory. This finding was reflected by 46(50.5%) and 29(31.9%) deputies respectively strongly agreeing and agree, while 12(13.2%) and 4(4.4%) others respectively disagree and strongly disagree.

Involvement and participation had mean of 1.81 which showed satisfactory usage level of ICT. This meant that use of ICT for students' involvement and participation was satisfactory. A position held by 40(44.0%) ICT teachers who strongly agree as 35(38.5%) others agree. Only 9(9.9%) and 7(7.7%) of them respectively disagree and strongly disagree.

From ICT teachers' response guidance and counselling rated at mean of 1.95 (SD=0.81) interpreted to show satisfactory usage level. This finding was corroborated by 33(36.3%) and

30(33.0%) deputies respectively strongly agree and agree while 13(14.3%) and 15(16.5%) others respectively disagree and strongly disagree.

The average mean of 1.82 (SD=0.79) indicated satisfactory usage level. This meant that ICT teachers reported that ICT usage on management of students was satisfactory.

4.6.14 T-Test of deputy principals and ICTteachers responses on ICT isage in student management

Table 4.34:T-Test of Deputy principal and ICT Teacher Responses on ICT Usage in Student Management in public Secondary Schools in Homabay County N=91)

Item	Respondent	Mean	SD	T-test
Communicating Values	DPR	1.90	0.79	t (180) =-.063, P=.843
	ICT Tcr	1.81	0.81	
Setting Standards and Goals	DPR	1.91	0.72	t (180) =.971, P=.001
	ICT Tcr	1.71	0.74	
Enrolment/ Participation	DPR	2.02	0.75	t (180) =.577, P=.903
	ICT Tcr	1.81	0.79	
Guidance & Counselling	DPR	1.98	1.02	(t (180) =-2.008, P=.541)
	ICT Tcr	1.95	0.81	
Overall Rating	DPR	1.46	0.82	(t (180) =.663, P=. 576)
	ICT Tcr	1.82	0.79	

From Table 4.34, it was observed that according to deputy principals at a mean of 1.46 (SD=0.82), ICT usage in student management was minimal. In the contrary, ICT teachers in charge mean of 1.84 (SD=079), showed satisfactory level usage. The means were significantly different. But (t (180) =.663, P=.576, Position of deputy principals and ICT teachers on ICT usage in student management was different**.**

4.6.15: Analysis of variance (ANOVA) for deputy principals and ICT teachers in-charge outcomes on relationship between ICT usage in management of students

Table 4.35.1: ANOVA for deputy principals' Outcomes on Relationship between use of ICT in Management of Students and Administrative quality of principals (N=91)

		Administrative Quality of principals	ICT usage in students' management
Administrative Quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.008 .000
ICT usage in students' management	Pearson Coefficient Sig. (2-tailed N	90 .008 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed)

Table 4.35.1 showed statistically significant positive correlation between ICT usage in management of students and administrative quality of principals in secondary schools (r= (.008), p<.05). Since relationship was statistically significant, the hypothesis that 'there was no statistically significant relationship between ICT usage in management of students and administrative quality of principals was rejected. Therefore, statistically significant positive relationship between ICT usage in management of students and administrative quality of principals existed.

4.6.16 Analysis of variance (ANOVA) for ICT teachers' Outcome on relationship between ICT usage in management of students

Table 4.35.2: ANOVA for ICT teachers' Outcomes on Relationship between ICT Usage in Management of Students and Administrative Quality of principals(N=91)

		Administrative Quality of principals	ICT usage in students' management
Administrative Quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.024 .000
ICT usage in students' management	Pearson Coefficient Sig. (2-tailed N	90 .024 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed).

Table 4.35.2: showed statistically significant positive correlation between ICT usage in management of students and administrative quality of principals in secondary schools (r=.024; p=0.00<.05). Relationship was statistically significant, thus hypothesis that there was no statistically significant relationship between ICT usage in management of students and administrative quality of principals was rejected.

4.6.17: Response of deputy principals and ICT teachers in-charge on ICT usage in management of BOM

Table 4.36: Deputy principals' Response on ICT Usage in management of BOM (N=91)

Indicator	1	2	3	4	Mean	SD
Explaining legal framework election	39(42.9%)	34(37.4%)	10(11.0%)	9(9.9%)	1.90	0.99
Explaining roles/responsibility	36(39.6%)	34(37.4%)	12(13.2%)	9(9.9%)	1.93	0.89
Development planning	30(33.0%)	34(37.4%)	15(16.5%)	12(13.2%)	2.10	0.75
Fund raising	23(25.3%)	42(46.2%)	11(12.1%)	15(16.5%)	2.03	0.90
Disciplinary matters	29(31.9%)	37(40.7%)	11(12.1%)	14(15.4%)	2.11	1.05
Average					**2.01**	**0.90**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly disagree (SD)=1

Deputy principals' response on ICT usage in explaining legal framework for elections to the BOM members had a mean of 1.90 (SD=0.99). The mean was interpreted to show satisfactory level of ICT usage, which meant that deputy principals said that the use of ICT for explaining legal framework to BOM members was satisfactory. This finding was confirmed by 39(42.9%) and 34(37.4%) deputies who strongly agree and agree respectively as the other 10(11.0%) and 9(9.9%) respectively disagree and strongly disagree respectively.

Use of ICT in explaining roles and responsibility scored mean of 1.93 (SD=0.89). This mean showed satisfactory usage level. The finding was reflected by 36(39.4%) and 34(37.4%) deputies who respectively strongly agree and agree as 12(13.2%) and 9(9.9%) others disagree and strongly disagree respectively.

As concerns use of ICT in development planning, response from deputies recorded mean of 2.10 (SD=0.75) this mean was interpreted to show satisfactory usage level. 30(33.0%) and 34(37.4%) deputies strongly agree and agree respectively with the finding. And some 15(16.5%) and 12(13.2%) of them respectively disagree and strongly disagree.

The aspects of fund raising, and disciplinary matters each scored mean of 2.03 (SD=0.90), and 2.11 (SD=1.05) respectively. Though each mean showed satisfactory usage level of ICT for those aspects, minority of deputy principals responded to such. Their views were reflected by 23(25.3%), and 29(31.9%) deputies, who strongly agree with the finding while 42(46.2%) and 37(40.7%) others agree respectively. At the same time 11(12.1%) deputies for each aspect respectively disagree as 15(16.5%) and 14(15.4%) others strongly disagree respectively.

The average mean of **2.01** (SD=0.90) showed satisfactory usage level, which meant that deputies accepted that ICT usage in the management of BOM was satisfactory.

4.6.18 ICT teachers' response on ICT usage in BOM mangement

Table 4.37: ICT Teachers' Responses on ICT Usage in management of BOM (N=91)

Indicator	1	2	3	4	Mean	SD
Explaining legal basis for election	36(39.6%)	31(34.1%)	10(11.0%)	13(14.3%)	1.98	0.76
Explaining roles/responsibilities	33(36.3%)	35(38.5%)	13(14.3%)	9(9.9%)	1.96	0.76
Development planning	40(44.0%)	40(44.0%)	5(5.5%)	6(6.6%)	1.75	0.73
Fund raising	28(30.8%)	37(40.1%)	15(16.5%)	11(12.1%)	2.10	0.82
Disciplinary matters	38(41.8%)	27(29.7%)	15(16.5%)	11(12.1%)	1.99	0.82
Average					**1.96**	**0.78**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly disagree (SD)=1

ICT teachers' response on use of ICT in explaining legal framework had mean rating of 1.98 (SD=0.76) which showed satisfactory level of usage. Hence the ICT teachers opined that for explanation of legal framework for election to BOM, ICT was satisfactorily used. 36(39.6%) and 31(34.1%) ICT teachers respectively strongly agree and agree with the finding at the same time 10(11.0%) and 13(14.3%) others disagree and strongly disagree respectively.

The aspect of explaining roles and responsibility, recorded mean of 1.96 (SD=0.76) which showed satisfactory level of ICT usage in that respect. This position was reflected by 33(36.3%) deputies strongly agree, 35(38%) others agree as 13(14.3%) and 9(9.9%) of them respectively disagree and strongly disagree.

Regarding use of ICT in development planning, and disciplinary matters, ICT teachers' response recorded mean of 1.75 (SD=0.73) and 1.99 (SD=0.82). Each mean was interpreted to show satisfactory usage level. The finding was justified by 40(44.0%) and 38(41.8%) ICT teachers strongly agreed and 40(44.0%) and 27(29.7%) others agreed with the finding respectively. At the same time, as 5(5.5%) and 15(16.5%) deputies disagreed respectively, 6(6.6%) and 11(12.1%) others strongly disagreed with the same finding. The aspect of fund-

raising attracted mean of 2.10 (SD=0.82) which showed satisfactory usage level. It was corroborated by 28(30.8%) ICT teachers who strongly agree and 37(30.1%) others agree. Similarly, 15(16.5%) ICT teachers in-charge disagree and 11(12.1%) others strongly disagree.

The average mean of **1.96** (SD=0.78) indicated satisfactory usage level. Hence ICT teachers accepted that ICT usage for the management of BOM was satisfactory.

4.6.19 T-Test of deputy principals and ICT teachers' responses in ICT usage on BOM management

Table 4.38:T-Test of deputy principal and ICT Teacher Responses in ICT Usage on BOM (N=91)

Item	Respondent	Mean	SD	T-test
Explaining	DPR	1.90	0.99	t (180) =-1.005, P=.529
Legal	ICT Tcr	1.98	0.76	
Framework				
Explaining role	DPR	1.93	0.89	t (180) =.861, P=.597
and	ICT Tcr	1.96	0.76	
responsibilities				
Development	DPR	2.10	0.75	t (180) =0.129, P=.332
Planning	ICT Tcr	1.75	0.73	
Fund raising	DPR	2.03	0.90	(t (180) =.481, P=.099)
	ICT Tcr	2.10	0.82	
Disciplinary	DPR	2.11	1.05	
Matters	ICT Tcr	1.99	0.85	(t (180) =-1.313, P=.497)
Overall Rating	DPR	2.01	0.90	(t (180) =.658, P=.344)
	ICT Tcr	1.96	0.78	

From Table 4.38, it was observed that according to deputy principals at a mean of 2.01 (SD=0.90), ICT usage in BOM management was satisfactory and for the ICT teachers mean of 1.96 (SD=0.78), the usage was similarly satisfactory. These means were not insignificantly different. (t (180) =.658, P=.344, with level of significance based on P<.05) hence the position of deputy principals and ICT teachers on ICT usage in BOM management was not different. This meant that both deputy principals and ICT teachers' in-charge agreed that ICT usage in management of BOM in Homabay County was satisfactory.

4.6.20: Analysis of variance for deputy principals and ICT teachers in-charge outcomes on relationship between ICT usage in management of BOM and administrative quality of principals

Table 4.39.1: ANOVA for deputy principals' Outcomes on relationship between ICT Usage in Management of BOM and Administrative Quality of principals(N=91)

		Administrative Quality of principals	ICT usage in Management of BOM
Administrative Quality of principals	Pearson Coefficient on Sig.(2-tailed)	1	.842
ICT usage in Management of BoM	N Pearson Coefficient SIG. (2-tailed)	90	.000 90
	N	.842 .000 90	1 90

Correlation is significant at the 0.00 level (2-tailed)

Table 4.39.1 showed no statistically significant positive correlation between ICT usage in the management of BOM and administrative quality of principals in secondary schools (r=.842, p=0.00<.05). Since relationship was not statistically significant, the hypothesis that 'there was no statistically significant relationship between ICT usage in management of BOM and administrative quality of principals was not rejected. Therefore, it was concluded that according to deputy headteachers' outcome there was no statistically significant relationship between ICT usage in management of BOM and administrative quality of principals.

4.6.21 Analysis of variance (ANOVA) for ICT teachers Outcome on relationship between ICT usage in management of BOM and administrative quality of principals

Table 4.39.2: ANOVA for ICT Teachers' Outcomes on the Relationship between ICT Usage in Management of BOM and Administrative Quality of principals (N=91)

		Administrative Quality of principals	ICT usage in BOM management
Administrative Quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.061 .000
ICT usage in BOM management	Pearson Coefficient Sig. (2-tailed) N	90 .061 .000 90	90 1 90

Correlation is significant at the 0.00level (2-tailed)

Table 4.39.2 showed that there was statistically significant positive correlation between ICT usage in the management of BOM and administrative quality of principals in public secondary schools (r=.061, p=0.00<.05). With statistically relationship was statistically significant; hypothesis that 'there was no statistically significant positive relationship between ICT usage in management of BOM and administrative quality of principals was rejected. In conclusion, statistically significant positive relationship between ICT usage in management of BOM and administrative quality of principals in Homabay existed.

4.6.22: Response of deputy principals and ICT teachers in-charge in ICT usage in management of stakeholders

Table 4.40: Response of deputy principals on ICT Usage in management of Stakeholders (N=91)

Indicator	1	2	3	4	Mean	SD
Working with other education officers/KNUT and others	48(52.7%)	26(28.6%)	10(11.0%)	7(7.7%)	1.74	0.68
Linking school and community: parents, businesspeople, and institutions	45(49.5%)	26(28.6%)	11(12.1	9(9.9%)	1.82	0.87
Average					**1.78**	**0.78**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly disagree (SD)=1

Deputy principals' response on ICT usage in working with education officers, Knut, and other stakeholders, had a mean of 1.74 (SD=0.68) which showed satisfactory usage level. Hence the deputy head teachers reported that ICT was satisfactorily used to engage with the named officials. 48 (52.7%) and 26(38.6%) deputies strongly agree and agree respectively with the finding. On the other 10(11.0%) and 7(7.7%) respectively disagree and strongly disagree.

In respect to usage of ICT in linking school and community recorded mean of 1.86 (SD=0.87). This showed satisfactory level usage and was reflected by 45(49.5%) deputies who strongly agree as 26(28.6%) others agree. At the same time 11(12.1%) deputies disagree as 9(9.9%) others strongly disagree. The average mean of 1.78 (SD=0.78) showed ICT usage in management of stakeholders was satisfactory. Therefore, according to deputy headteachers, ICT usage in linking school and community in Homabay was satisfactory.

4.6.23: Response of ICT teachers in-charge on ICT usage in linking school with its community

Table 4.41: ICT Teachers' Responses on ICT Usage on management of other stake holders in secondary schools in Homabay (N=91)

Indicator	1	2	3	4	Mean	SD
Working with education officers/KNUT/Others	60(66.0%)	23(25.3%)	5(5.5%)	3(3.3%)	1.46	0.69
Linking school and community: parents, businesspeople, and others	48(52.7%)	30(33.0%)	6(6.6%)	7(7.7%)	1.69	0.83
Average					**1.58**	**0.76**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

ICT teacher's response on the use of ICT on working with education officers, KNUT, and other stakeholders had mean of 1.46 (SD=0.69). This mean of 1.46 showed minimal usage level. It meant that the ICT teachers stated that use of technology for the purpose of working with the listed officials was minimal. This finding was reflected however, by 60(66.0%) ICT teachers in-charge who strongly agree and 23(25.3%) others who agree with only 5(5.5%) and 3(3.3%) of them respectively disagree and strongly disagree.

A mean of 1.69 (SD=0.83) was posted from ICT teachers' response for ICT usage in linking the school and its community. This mean was interpreted to show satisfactory usage level, which meant that the ICT teachers posited that the technology was satisfactorily used in linking school and its community. A position strongly agree with by 48(52.7%) as 30(33.0%) of ICT teacher's in-charge agree. At the same time 0nly 6(6.6%) and 7(7.7%) ICT teachers in-charge respectively disagree and strongly disagree.

The average mean of **1.58** posted by ICT teachers for ICT usage in management of stakeholders showed satisfactory usage. It meant that the ICT teachers agreed that the technology was satisfactorily used in management of stakeholders.

4.6.24 T-Test of deputy headteachers and ICT teachers responses on ICTusage management of stakeholders

Table 4.42: T-Test of Deputy Head teacher and ICT Teacher Responses on ICT usage in management of Stakeholders (N=91)

Item	Respondent	Mean	SD	T-test
Working with Trade Unions	DPR	1.74	0.68	t (180) =0.841, P=.737
	ICT Tcr	1.46	0.69	
Linking school with community	DPR	1.82	0.87	t (180) =.296, P=.503
	ICT Tcr	1.69	0.83	
Overall Mean	**DPR**	**1.78**	**0.78**	(t (180) =.195, P=.620)
	ICT Tcr	**1.58**	**0.76**	

From Tables 4.42, it was observed that according to deputy principals' mean of 1.78 (SD=0.78), ICT usage on management of stakeholders was satisfactory and ICT teachers' mean of 1.58 (SD=0.76), was similarly satisfactory. These means were not insignificantly different; (t (180) =.195, P=.620, hence position of deputy principals and ICT teachers regarding ICT usage for stakeholders was not different.

4.6.25: Analysis of Vvariance for deputy principals and ICT teachers in-charge outcomes on relationship between ICT usage in Management of stakeholders

Table 4.43.1: ANOVA for Deputy principals' Outcomes on the Relationship between ICT Usage in Management of Stakeholders and Administrative Quality of principals (N=91)

		Administrative quality of principals	ICT usage in stakeholders' management
Administrative quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.498 .000
ICT usage in stakeholders' management	Pearson Coefficient SIG. (2-tailed) N	90 .498 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed)

Findings in Table 4.43.1 showed statistically significant positive correlation between ICT usage in the management of stakeholders and administrative quality of principals in secondary schools ($r=.498$, $p=0.00<.05$). The hypothesis that 'there was no statistically significant relationship between ICT usage in management of stakeholders and administrative quality of principals was rejected. Therefore, it was concluded that existence of statistically significant positive relationship between ICT usage in management of stakeholders and administrative quality of principals, resulted into improved administrative quality of principals.

4.6.26 Analysis of variance for ICT teachers' Outcomes on relationship between ICT usage in management of stakeholders and administrative quality of principals

Table 4.43.2:ANOVA for ICT tteachers' Outcomes on relationship between ICT usage in management of Stakeholders and Administrative Quality of principals (N=91)

		Administrative quality of principals	ICT usage in management of stakeholders
Administrative quality of principals	Pearson Coefficient Sig.(2-tailed) N	1	.498 000
ICT usage in management of stakeholder	Pearson Coefficient SIG. (2-tailed) N	90 .498 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed)

The findings from table 4.43.2 **s**howed statistically significant positive correlation between ICT usage in the management of stakeholders and administrative quality of principals in public secondary schools (r=.498, p=0.00<.05). Relationship was statistically significant, the hypothesis that 'there was no statistically significant relationship between ICT usage in management of stakeholders and administrative quality of principals was rejected. Therefore, it was concluded that with statistically significant positive relationship between ICT usage in management of stakeholders and administrative quality of principals' improved administrative quality of principals schools was realized.

4.6.27 Average mean rating for deputy principals and ICT teachers on ICTusage on each aspect of human resource management

Table 4.44: Average Mean Rating of DPR and ICT Tcr on ICT Usage in each aspect of Human Resource Management.

Aspects of HRM	Respondents	Mean
Personnel	DPR	2.01
	ICT Tcr	1.93
Supervisory task	DPR	2.00
	ICT Tcr	1.81
Students Management	DPR	1.46
	ICT Tcr	1.82
BOM	DPR	2.01
	ICT Tcr	1.96
Other stakeholders	DPR	1.78
	ICT Tcr	1.58
Overall mean	**DPR**	**1.81**
	ICT Tcr	**1.82**

In conclusion, the overall mean score of **1.81** for ICT usage in Human resource management by Deputy Head teachers showed satisfactory usage. Similar interpretation of a mean score of **1.82** for ICT usage in Human resource by ICT Teachers indicated satisfactory usage.

It was then concluded that deputy principals and ICT Teachers in-charge agreed that use of ICT in the management of human resources in secondary schools in Homabay was satisfactory.

4.6.28 Coefficient- output of ICT usage im human resource management and administrative quality of of principals

Table 4.45: Coefficients-output of ICT Usage in Human Resource management and administrative quality of principals

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.954	.203		9.646	.000	1.554	2.354
Human Resource Management	.461	.062	.498	7.394	.000	.338	.584

Dependent Variable: Administrative Quality of principals

$Y = \alpha + \beta x + e$

Administrative Quality of principals = 1.954 + 0.461x + error term.

It was evident that slope coefficient for ICT usage in school human resource management was .461, implying that administrative quality of principals improved by 0.461 units; Increase in ICT usage in school human resource management by one standard deviation upshot improvement of administrative quality of principals by .498 standard deviations. Generally, Study findings on use of ICT on various categories of human resources and administrative quality of principals in secondary schools, revealed that in most secondary schools, it was the responsibility of principals to rise to the challenge of adopting to new technological resources and utilize ICT for school administration.

4.7: Relationship between ICT Usage in School financial resource management and Administrative quality of principals

4.7.1: Introduction

The last research objective determined the relationship between ICT usage in school financial resource management and administrative quality of principals in secondary schools in Homabay. It was addressed by using descriptive statistics to explore views of the respondents on ICT usage in school financial resource management, Inferential statistics tested hypothesis on relationship between ICT usage sin school financial resource management and administrative quality of principals.

In exploring the views of respondents (Principals, deputy principal and ICT teachers), the items of the questionnaire were indicators of ICT usage in school financial resource management. Responses were scored using four-point scale, the scores were summated to measure the respondents' opinion on the use of ICT in financial resource management.

4.7.2: Response of principals on ICT usage in financial resource management

Table 4.46: Principals response on ICT usage in Financial Resource Management (N=91)

Aspects of Financial resource management	1	2	3	4	M	SD
Preparation of budget estimates	60(65.9%)	20(22.0%)	11(12.1%)	0(0%)	1.46	0.70
Presentation of budget for approval	58(63.7%)	22(24.2%)	10(11.0%)	1(1.1%)	1.49	0.74
Budget Implementation	40(44.0%)	35(38.5%)	15(16.5%)	1(1.1%)	1.75	0.77
Receiving & Receipting of funds	70(76.9%)	20(22.0%)	1(1.1%)	0(0.0%)	1.35	1.12
Cost Sharing	30(33.0%)	35(38.5%)	25(27.5%)	1(1.1%)	1.97	0.81
Laying out strategies for fundraising	45(49.5%)	25(27.5%)	15(16.5%)	6(6.6%)	1.81	0.94
Expenditures	54(59.3%)	30(33.0%)	4(4.4%)	3(3.3%)	1.52	0.74
Management of personal emoluments	40(44.0%)	25(27.5%)	12(30.8%)	14(15.4%)	2.00	1.10
Accounting for funds	55(60.4%)	30(33.0%)	4(4.4%)	2(2.2%)	1.48	0.69
Presentation of books for auditing	53(58.4%)	28(30.8%)	6(6.6%)	4(4.4%)	1.57	0.80
Average					**1.64**	**0.84**

KEY: Strongly Agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1

Principals' response on ICT usage in preparation of budget had a mean rating of 1.46 (SD=0.70). This was interpreted to show ICT usage in the preparation of budgets was at its minimal usage level. But of principals at 60(65.9%) strongly agree that ICT was used in preparation of budget estimates, 20(22.0%) others agree while the other 11(12.1%) disagree.

The aspects of presentation of budget for approval was rated at mean of 1.49 (0.74), meaning ICT usage in this regard was also at minimal usage level. Similarly, majority of principals at 58(63.7%) strongly agree that ICT used in presentation of budget for approval as 22(24.2%)

of them agree. While 10(11.0%) and 1(1.1%) principal respectively disagree and strongly disagree.

Use of ICT in laying strategies for fund raising, was rated at mean of 1.81 (SD=0.95) showing satisfactory usage. The finding was corroborated by 45(49.5%) principals who strongly agree while 25(27.5%) agree, as 15(16.5%) and 6(6.6%) others respectively disagree and strongly disagree.

As concerns use of ICT in managing expenditures, principals' response recorded mean of 1.52 (SD=0.74) which showed satisfactory usage. 54(59.3%) and 30(33.0%) principals strongly agree and agree respectively with the result at the same time 4(4.4) principals disagree as 3(3.3%) others strongly disagree.

Regarding use of ICT in accounting for funds and presentation of books for auditing recorded the following means 1.48 (SD=0.69), and 1.57 (SD=0.80) respectively. Each mean showed minimal usage level for accounting and satisfactory usage for presentation of books for auditing respectively. 55(60.4%) and 53(58.4%) principals strongly agree with the result while 30(33.0%) and 28(30.8%) others agree respectively. On the other hand, 4(4.4% and 6(6.6%) principals disagree with 2(2.2%) and 4(4.4%) of them strongly disagree respectively.

Nevertheless, the aspects of cost sharing and budget implementation recorded mean 1.75 (SD=0.77), and 1.97 (SD=0.81) each. Both means showed satisfactory usage level of ICT usage in regard to the two aspects. However, result was reflected by low percentages of principals. 30(33.0%) and 40(44.0%) principals strongly agree with 35(38.5%) others for each aspect agree respectively. The result also revealed that 25(27.5%) and 15(16.5%) others respectively disagree while only 1(1.1%) each of them respectively strongly disagree.

The issue of using ICT for management of personal emolument recorded mean rating of 2.00 (SD=1.10) from principals' responses. This mean showed satisfactory usage. B 40(44.0%) principals strongly agree with the result and 25(27.5%) of them agree. Meanwhile 12(13.2%) principals disagree and 14(15.4%) others strongly disagree.

Lastly, the aspects of receiving and receipting of funds had highest mean of 1.35 (SD=1.12). This mean though showed minimal usage level. Despite the fact that this mean showed minimal usage, many principals stated that the technology was used in that respect. The result was reflected by 70(76.9%) principals strongly agreeing as 20(22.0%) others agreeing and only 1(1.1%) of them disagreeing.

The average mean of **1.64** (SD=0.88) showed satisfactory usage level of ICT in financial resource management. This meant that principals agreed that ICT usage in Financial Resource Management in Homabay was at its satisfactory usage level.

4.7.3: Response of deputy principals on ICT usage in mmanagement of financial resources.

Table 4.47: Deputy principals' Responses on ICT usage in management of Financial Resources in Homabay (N=91)

Indicator	1	2	3	4	Mean	SD
Preparation of budget estimate	58(63.8%)	22(24.2%)	10(11.0%)	1(1.1%)	1.50	0.61
Presentation of budget for approval	44(48.4%)	31(34.1%)	12(13.2%)	4(4.4%)	1.74	0.77
Budget implementation	24(26.4%)	45(49.5%)	12(13.2%)	10(11.0%)	2.10	0.73
Reception and receipting of funds	38(41.8%)	34(37.4%)	13(14.3%)	6(6.6%)	1.86	0.65
Cost sharing	38(41.8%)	34(37.4%)	13(14.3%)	6(6.6%)	1.86	0.84
Laying strategies for fund raising	37(40.7%)	36(39.6%)	13(14.3%)	5(5.5%)	1.85	0.71
Expenditure of funds	40(44.0%)	36(39.6%)	5(5.5%)	10(11.0%)	1.84	0.78
Managing emoluments	37(40.7%)	36(39.6%)	11(12.1%)	7(7.7%)	1.87	0.79
Accounting of funds	50(55.0%)	35(38.5%)	5(5.5%)	1(1.1%)	1.53	0.71
Presentation of books for auditing	37(40.7%)	34(37.4%)	13(14.3%)	5(5.5%)	1.80	0.78
Average					**1.80**	**0.74**

KEY: Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) =2, Strongly disagree (DA) =1

Deputy principals' response on ICT usage in preparation of budget estimates recorded mean rating of 1.50 (SD=0.61) which was interpreted to show satisfactory usage level. 58(63.8%) deputies strongly agree that ICT was used in the preparation of budget estimates in their schools as 22(24.2%) others agree. While 10(11.0%) deputies disagree, only 1(1.1%) of them strongly disagree.

Use of ICT in accounting for funds scored mean rating of 1.53 (SD=0.71. This mean showed satisfactory level usage. 50(55.0%) deputies strongly agree with the result 35(38.5%) of them also agree. Meanwhile 5(5.5%) disagree and only 1(1.1%) other strongly disagree.

The aspects of preparations of budgets for approval and expenditure recorded means 1.74 (SD=0.77) and 1.84 (SD=0.78) from deputy principals' responses. Each mean was interpreted to show satisfactory ICT usage level for each aspect. With 44(48.4%) and 40(44%) deputies respectively strongly agree with the result as 31(34.1%) and 36(39.6%) others agree respectively. At the same time 12(13.2%) and 5(5.5%) deputies respectively disagree with the result but 4(4.4%) and 10(11.0%) others strongly disagree respectively.

Other aspects of financial resource like reception and receipting of funds, cost sharing, laying strategies for fundraising, managing personal emoluments and presentation of books for auditing recorded almost same mean from deputy principals' response: 1.86 (SD=0.65), 1.86 (SD=0.84), 1.87 (0.79), and 1.80 (SD=0.78) respectively. Each mean was interpreted to show satisfactory level usage. Deputy head teachers strongly agree with each result in this order: 38(41.8%), 38(41.8%), 37(40.7%), 37(40.7%), and 37(40.7%) respectively. 34(37.4%), 34(37.4%), 36(39.6%), 36(39.6%) and 34(37.4%) others respectively agree with the result. However, as 13(14.3%), 13(14.3%), 13(14.3%), 11(12.1%) and 13(14.3%) of deputies disagree with the result, 6(6.6%), 6(6.6%), 5(5.5%), 7(7.7%) and 5(5.5%) others strongly disagree with the result. Lastly, when only 24(26.4%) deputies strongly agree that ICT usage in budget implementation was satisfactory it had mean of 2.10 (SD=0.73) which showed ICT usage in that regard was satisfactory. 45(49.5%) deputies agree while 12 (13.2%) and 10(11.0%) others respectively strongly disagree.

The average mean of **1.80** (SD=0.74) reflected satisfactory level usage. Therefore, deputy headteachers attested to the fact that ICT usage in management of financial resources in Homabay was satisfactory.

4.7.4: Response of ICT teachers in-charge response in ICT usage on management of financial resources in Homabay.

Table 4.48: Response of ICT teachers in-charge on ICT Usage in management of financial resources (N=91)

Indicator	1	2	3	4	Mean	SD
Preparation of budget estimate	59(64.8%)	24(26.4%)	6(6.6%)	3(3.3%)	1.51	0.61
Presentation of budget for approval	43(47.3%)	36(39.6%)	6(6.6%)	6(6.6%)	1.73	0.63
Budget implementation	36(39.6%)	40(44.0%)	9(9%)	6(6.6%)	1.84	0.65
Reception and receipting of funds	55(60.4%)	24(26.4%)	7(7.7%)	5(5.5%)	1.58	0.74
Cost sharing	34(37.4%)	43(47.3%)	14(15.4%)	0(0.0%)	1.78	0.74
Laying strategy for fund raising	34(37.4%)	43(47.3%)	8(8.8%)	6(6.6%)	1.85	0.86
Expenditure of funds	48(52.7%)	29(31.9%)	7(7.7%)	8(8.8%)	1.75	0.57
Managing emolument	37(40.7%)	37(40.7%)	10(11.0%)	7(7.7%)	1.86	0.75
Accounting of funds	57(62.6%)	19(20.9%)	8(8.8%)	7(7.7%)	1.77	0.67
Presentation of books for auditing	51(56.0%)	26(28.6%)	8(8.8%)	6(6.6%)	1.66	0.83
Average					**1.73**	**0.71**

KEY: Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) =2, Strongly Disagree (SD) =1

ICT teachers' response on ICT usage in preparation of budget estimates recorded mean of 1.51 (SD=0.61). The mean was interpreted to show satisfactory usage. 59(64.8%) and 24(26.4%) ICT teachers strongly agree and agree with the result respectively. But 6(6.6%) and 3(3.3%) of them respectively disagree and strongly disagree with the result.

Aspect of accounting for funds, and reception and receipting of funds recorded mean of 1.77 (SD=0.67), and 1.58 (0.74) respectively. Each mean rating showed satisfactory usage level. The following number of ICT teachers strongly agree with the result respectively: 57(62.6%), and 55(60.4%), at the same time 19(20.9%) and 24(26.4%) ICT teachers agree respectively. While, 8(8.8%) and 7(7.7%) ICT teachers respectively disagree, 7(7.7%) and 5(5.5%) others strongly disagree with the finding.

Regarding use of ICT in presentation of books for auditing recorded a mean rating 1.66 which was interpreted to show satisfactory usage level. 51(56.0%) and 26(28.6%) ICT teachers in-charge respectively strongly agree and agree with the result with 8(8.8%) and 6(6.6%) others respectively disagree and strongly disagree.

Usage of ICT in expenditure of funds and presentation of budget for approval recorded means of 1.75 (SD=0.57), and 1.73 (SD=0.63) respectively from ICT teachers' response. Both means showed satisfactory usage level. With 48(52.7%) and 43(47.3%) ICT teachers strongly agree that ICT was satisfactorily used in those regards and 29(31.9%) and 36(39.6%) others respectively agree. However, as 7(7.7%) and 6(6.6%) ICT teachers disagree, 8(8.8%) and 6(6.6%) others strongly disagree.

The use of ICT in managing personal emoluments, budget implementation, cost sharing and laying strategies for fund raising recorded means of: 1.86 (0.75), 1.84 (0.75), 1.78 (SD=0.74) and 1.85 (SD=0.86) respectively from ICT Teachers response. Each mean rating showed satisfactory usage level for each aspect. The following ICT teachers strongly agree that ICT usage for each aspect named was satisfactory: 37(40.7%), 36(39.6%), 34(37.4%) and 34(37.7%) respectively while 37(40.7%), 40(44.0%), 43(47.3%), and 43(47.3%) of them respectively agree with the result. Meanwhile, 10(11.0%), 9(9.9%), 14(15.4%), and 8(8.8%)

ICT teachers disagreed, 7(7.7%), 6(6.6%), and 6(6.6%) others respectively strongly disagree that ICT was used satisfactorily in those regards.

The average mean of **1.73** (SD=0.71) showed satisfactory usage level. This meant that ICT teachers agreed that the level at which ICT was used in regard to financial resources management in Homabay was satisfactory.

4.7.5 Principals', deputy principals', and ICT teachers' average mean on ICT usage in financial resource management

Table 4.49: Principals', deputy principal', and ICT Teachers' average means on ICT usage in Financial Resource Management

Respondent	Average Mean
Principals	1.64
Deputy principal	1.80
ICT Teachers in-charge	1.73
Overall Average Mean	**1.72**

In conclusion, overall mean rating of **1.72** was interpreted to mean satisfactory level usage. It was then concluded that the principals, deputy principals and ICT Teachers agreed that ICT usage for purpose of managing financial resources in public secondary schools in Homabay County was satisfactory.

4.7.6 T-Test of deputy principals and ICT teachers' responses on ICT usage in financial resource management

Table 4.50: T-test of deputy principal and ICT teachers responses on ICT Usage in Financial Resource Management in Secondary Schools in Homabay County N=91)

Item	Respondent	Mean	SD	T-test
Preparation of Budget Estimates	DPR	1.50	0.61	t (180) =-1.006, P=.831
	ICT Tcr	1.51	0.61	
Presentation of Budget for approval	DPR	1.74	0.77	t (180) =.532, P=.000
	ICT Tcr	1.73	0.63	
Budget Implementation	DPR	2.10	0.73	t (180) =0.727, P=.643
	ICT Tcr	1.84	0.65	
Reception and Receipting of funds	DPR	1.86	0.65	(t (180) =.118, P=.199)
	ICT Tcr	1.58	0.74	
Cost Sharing	DPR	1.86	0.84	
	ICT Tcr	1.78	0.74	(t (180) =0.533, P=.830)
Laying Strategies to raise funds	DPR	1.85	0.71	(t (180) =.682, P=.907)
	ICT Tcr	1.85	0.86	
Expenditure of funds	DPR	1.84	0.78	(t (180) =.538, P=.974)
	ICT Tcr	1.75	0.57	
Managing Emoluments	DPR	1.87	0.79	(t (180) =0.771, P=.009)
	ICT Tcr	1.86	0.75	
Accounting for funds	DPR	1.53	0.71	(t (180) =.894, P=.205)
	ICT Tcr	1.77	0.67	
Presentation of books for Auditing	DPR	1.80	0.78	(t (180) =.0621, P=.357)
	ICT Tcr	1.66	0.83	
Overall Rating	**DPR**	**1.80**	**0.74**	**(t (180) =.644, P=.495)**
	ICT Tcr	**1.73**	**0.71**	

From Table 4.50, it was observed that according to deputy head teachers at an overall mean of 1.80 (SD=0.74) ICT usage for financial management was satisfactory similarly for the ICT teachers at an overall mean of 1.73(SD=0.71) ICT usage was satisfactory. These means were insignificantly different (t (180) =.644, P=.495, hence the position of deputy head teachers

and ICT teachers as regards ICT usage for financial management was not different**.** This meant that according to deputy principals and ICT teachers, ICT usage in financial resource management in Homabay was satisfactory.

4.7.7: Interview schedule data from principals, deputy principals, and ICT Teachers on ICT usage in financial resource management in Homabay.

Table 4.51: Principals', deputy principals', and ICT teachers' interview data on ICT usage in financial resource management.

Aspects of Financial resource management.	**Percentage**
Principals N=20	
Receiving and receipting	6(30%)
Preparation of budget estimate	3(15%)
Presentation of estimates for approval	4(20%)
Expenditures	3(15%)
Accounting for funds	2(10%)
Presentation of books for auditing	2(10%)
Deputy principals (N=20)	
Receiving and receipting	4(25%)
Preparation of budget estimate	3(15%)
Presentation of estimates for approval	3(15%)
Expenditures	3(15%)
Accounting for funds	4(20%)
Presentation of books for auditing	2(10%)
ICT Teachers (N=20)	
Receipting and receiving of funds	2(10%)
Preparation of budget estimate	6(30%)
Presentation of estimates for approval	1(5%)
Expenditures	4(20%)
Accounting for funds	5(25%)
Presentation of books for auditing	2(10%)
TOTAL	**100%**

Table 4.51 shows that 6(30%) principals interviewed said that ICT was used for receipting and receiving funds. ICT usage for preparation of budget estimates and expenditures each were alluded to by 3(15%) of principals who were interviewed, 4(20%) of principals said that ICT was used in the presentation of budget estimates for approval. Only 2(10%) of principals stated that ICT was used for accounting for funds and presentation of books for auditing.

Twenty five percent deputy principals interviewed said that ICT was used for receiving and receipting of funds, 3(15%) of deputy principals each said that ICT was used for preparation of budget estimates, presentation of budget estimates for approval and expenditures. While 4(20%) deputies said ICT was used for accounting for funds, 2(10%) of them said ICT was used in the presentation of books for auditing, 6(30%) ICT teachers interviewed said ICT was used for preparation of budget estimates, and 5(25%) of them said it was used for accounting for funds. As 4(20%) of ICT teachers said that ICT was used in the management of expenditures, the idea of using ICT in presentation of estimates for approval was mentioned by just 1(5%) ICT -teacher.

During interview, a principal pointed:

> *'I can strongly confirm to you that ICT was used in the management of school finances, especially in the preparation of budget estimates. The estimates are always typeset and printed ready to be presented to the BOM for discussion.'*

A deputy Head teacher revealed*:*

> *'We always receive departmental budget estimates in soft copies which are incorporated in the school overall budget estimate.'*

One SCQASO pointed out that*:*

> *'I usually see printed financial statements whenever I attend board meetings. School records like monthly trial balances, school creditors and debtors are always presented in legible spreadsheets.'*

Another principal said*:*

> *'Through technology, I comfortably monitor the fee collection process and expenditures from my computer any time I want to.*

One school captain had this to say:

> *'Students check their fee balances from the student pothole. They readily get fee balance print out to take home.'*

These findings confirmed that ICT was used for management of financial resources in Homabay. It found that ICT platform was used for the management of school budget estimates and in other financial transactions in public secondary schools. This agreed with Atom B. E. (2012), who explained that ICT created enabling atmosphere for integrating financial transactions using accounting software to generate financial reports for decision making. The finding was in tandem with, (Int. J. Info. Sci. and Sys. 2015, 4(1): 1-4), which posited that financial management concerned raising financial resources and effective usage towards achievement of organizational goals. The related aspects of financial management included general principles for implementation, budget and statistics. It was through ICT that school principals took advantage of electronic banking, which will allow checking of bank accounts records, saving time, and ensuring payments due were made and received, and operated account with agreeable overdraft limit. The finding agreed with (Wagithumu, Muthee and Thinguri, 2014), who stated that ICT assisted in advancing financial management information systems for schools and generated data for use by guardians, learners, and government authority.

From the accounts office several accounting documents were perused such documents were receipt books, payment vouchers, monthly trial balances, as well as audited accounts which had been discussed by the BOM and approved by the Ministry of Education.

4.7.8: Analysis of Variables (ANOVA) on relationship between deputy principals' and ICT teachers' outcomes on ICT usage in financial resource management and administrative quality of principals

The study was founded on hypothesis; there was no relationship between ICT usage in financial resource management and administrative quality of principals in Homabay.

Null hypothesis was tested to determine any statistically significant positive relationship between ICT usage in financial resource management and administrative quality of principals. Pearson Moment Correlation analysis was conducted, with scores on ICT usage in school financial resource management as independent variable and administrative quality of principals as dependent variable. Likert scaled responses in each item was computed to create approximately continuous variable but within open interval of 1 to 4, that was appropriate for the use of parametric data, as explained by (Sullivan and Artino, 2013); where high scale ratings implied high level of ICT usage in financial resource management and principals' administrative quality in public secondary schools exists

4.7.8.1: Analysis of Variance (ANOVA) for deputy prinipals' outcome on relationship between ICT usage in financial resource management and administrative quality of principals

Table 4.52.1: ANOVA for deputy principals' Outcomes on relationship between ICT usage in Financial Management and Administrative Quality of principals (N=91)

		ICT usage in financial resource management	Administrative quality of principals
ICT usage in financial resource management	Pearson Coefficient	1	.256
	Sig.(2-tailed)		.000
	N	90	90
Administrative quality of principals	Pearson Coefficient	.265	1
	Sig. (2-tailed)	.000	
	N	90	90

Correlation is significant at the 0.00 level (2-tailed).

From Table 4.52.1 there was statistically significant positive correlation between ICT usage in financial resource management and administrative quality of principals in public secondary schools (r=.265; p<.05). Correlation was statistically significant, thus, hypothesis that, 'there was no statistically significant relationship between ICT usage in school financial resource management and administrative quality of principals was rejected.

4.7.8.2 Analysis of Variance (ANOVA) for ICT teachers' Outcomes on relationship between ICTusage in financial resouce management and administrative quality of principals

Table 4.52.2: ANOVA for ICT teachers' Outcomes on relationship between ICT usage in Financial Management and of Administrative Quality of principals (N=91)

		ICT usage in financial resource management	Administrative quality of principals
ICT usage in financial resource management	Pearson Coefficient Sig.(2-tailed) N	1	.391 .000
Administrative quality of principals	Pearson Coefficient Sig. (2-tailed) N	90 .391 .000 90	90 1 90

Correlation is significant at the 0.00 level (2-tailed).

Tables 4.52.2 showed statistically significant positive correlation between ICT usage in financial resource management and administrative quality of principals, (r=.391; p<.05). Statistically significant positive correlation, portends the hypothesis that, 'there was no statistically significant relationship between ICT usage in school financial resource management and administrative quality of principals was rejected.

4.7.9: Coefficient- Output of ICT usage in school financial resource management and administrative quality of principals

Table 4.53: Coefficients-Output of ICT Usage in School Financial Resource Management and Administrative Quality of principals

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(**Constant)**	2.139	.214		9.988	.000	1.716	2.562
lFinancial resource management	.386	.063	.429	6.117	.000	.261	.510

Quality a. Dependent Variable: Administrative Quality of principals

$Y = \alpha + \beta x + \varepsilon$

Administrative Quality of principals = 2.139 + 0.386x + error term.

From the table the slope coefficient for ICT usage in school financial resource management was 0.386, implying that administrative quality of principals improved by 0.386 units for each one unit rise on ICT usage in l financial resource management. Similarly, an improvement in ICT usage in school financial resource management by one standard deviation resulted into improvement of administrative quality of principals by .429.

4.7.10: Coefficient- Output of ICT usage in internal communication, record keeping, human resource and financial resource and administrative quality of principals in public secondary schools

Table 4.54: Coefficient - Output of ICT Usage in internal communication, record keeping, human resource and financial resource and administrative quality of principals in public secondary schools

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.711	.225		7.608	.000	1.267	2.155
School Internal Comm. Management	.140	.072	.165	1.942	.054	-.002	.282
Record Keeping Management	.092	.116	.105	.798	.426	-.136	.321
Human Resource Management	.220	.137	.238	1.608	.110	-.050	.491
Financial Resource Management	.085	.091	.095	.940	.348	-.094	.264

a. Dependent Variable: Administrative Quality of principals

As regards the four elements of school administration, interacting with ICT, the data in Table 4.54 provides statistically significant evidence about there being significant relationship with administrative quality of principals as investigated in his study. These were:

The use of ICT in internal communication X_1whereby $Y=1.711+.140X_1E$. This meant that for 1 unit increase in the use of ICT in internal communication, there was an ensuing improvement in administrative quality of principals by .140 units.

The use of ICT in record-keeping X_2 whereby $Y=1.711+.092X_2E$. This meant that for 1 unit increase in ICT usage in record-keeping, there was an improvement in administrative quality of principals in public secondary schools by.092 units.

Use of ICT on human resource management X_3whereby Y=1.711+.220X_3E. meant that for 1 unit increase in ICT usage in human resource management, there was an improvement in administrative quality of principals 0.220 units.

Lastly, ICT usage in financial resource management X_4whereby Y=1.711+.085X_4E. Meant that an increase of 1 unit in ICT usage in human resource management, improved administrative quality of principals by 0.085 units.

The model which encompasses all of them was:

$Y= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$

Predicted optimum administrative quality levels of principals were presented by:

Y=1.711units + .140X_1 units + .092X_2 units + .220X_3 units +.085X_4 units + error.

Where: Y is Administrative Quality of principals

X_1-School Internal Comm. Management

X_2 -Record Keeping Management

X_3-Human Resource Management

X_4-Financial Resource Management

The coefficients indicated administrative quality of principals in public secondary schools which varied with each aspect of ICT usage in management while other variables were held constant. It was revealed that ICT usage on human resource management posted highest input on administrative quality of principals. This was indicated by coefficient, X_3, which was equal to .220. It meant that for one-unit improvement in the use of ICT in human resource management, there was an ensuing improvement on administrative quality of principals in public secondary schools by .220 units. On the contrary, it was surprising that use of ICT in

financial resource management reflected the least effect on administrative quality of principals. A unit increase in use of ICT in financial resource management, only resulted into 0.085 units improvement in administrative quality of principals in public secondary schools.

In general, it was concluded that model adequately predicted administrative quality of principals in Homabay. It emerged that ICT usage in the four elements of school administration had significant effect or impact on administrative quality of principals of public secondary schools though, at varied levels.

4.7.11 Data from Document Analysis

The following documents were confirmed available in different offices. In the examination department, such documents as analyzed results for national and internal evaluations, list of registered candidates and other relevant materials were available in soft and hard copies. Pay rolls, information on statutory deductions -NSSF, NHIF and other related financial documents were available in soft and hard copies. Master timetables print outs were displayed in deputy principals' and principals' offices and staff rooms. All records including class attendance register had a backup in soft copies seen from computers in those offices.

ICT was also used in management of school finances especially in preparation of budget estimates that were typeset, printed and presented to BOM for discussion. Departmental budgets were sent and received in soft copies by the deputy principal. Principals via technology monitored fee collection process and expenditures from computers on their desk with relative ease. Students received their fee balances via student portholes and had printouts to take to their parents or guardians. Several accounting documents were perused; receipt books, payment vouchers, monthly trial balances and audited accounts were available in

prints and soft copy. On noticeboards, printed internal memeos' for teachers, students and other staff were pinned on noticeboards.

Enrolment Information System records (EMIS) and Teachers' management Information System (TMIS) were availed in both soft and hard copies. Other documents like sports and games schedules, semase workshops and other circulars from Ministry of Education and stakeholders evidenced that school records were managed by technology. Documents availed in principals' and other offices attested to the fact that ICT platform was in use in management of human resource, supervisory of tasks, financial resources and records.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Study investigated relationship between Information Communication Technology usage and administrative quality of principals in Homabay. The specific objectives were to establish whether there was:

1. Relationship between ICT usage in school internal communication and administrative quality of principals;
2. Relationship between ICT usage in record-keeping and administrative quality of principals;
3. Relationship between ICT usage in Human resource management and administrative quality of principals;
4. Relationship between ICT usage in financial resource management and administrative quality of principals.

Null hypotheses were formulated as follows;

$H0_1$: There was no significant relationship between ICT usage in school internal communication and administrative quality of principals.

$H0_2$: There was no significant relationship between ICT usage in record keeping management and administrative quality of principals.

$H0_3$: There was no significant relationship between ICT usage in human resource management and administrative quality of principals.

$H0_4$: There was no significant relationship between ICT usage in financial resource management and administrative quality of principals.

5.2 Findings of the study

Findings were presented in accordance with research objectives and conclusions based on emerging findings. The following, were summary of findings.

1. **There was no relationship between use of ICT in school internal communication and administrative quality of principals.**

Based on results derived from Likert scales, Deputy principals had average mean of 1.60 (SD=0.92). This showed satisfactory usage level of ICT application in internal communication management while the ICT teachers' average mean of 1.90 (SD=0.80), also showed satisfactory usage of ICT in management of internal communication processes and procedures. Both deputy principals and ICT teachers in-charge therefore, agreed that ICT was satisfactorily used in the management of school internal communication.

From ANOVA results of r =0.398; $p=0.00<0.05$, r= 0.426; $p=0.00<0.05$ was found for internal communication by deputy principals and ICT teachers in-charge respectively. The finding revealed that at 0.398 at a $p=0.00<0.05$, ICT usage in internal communication had significant positive relationship with administrative quality of principals. Similarly, at 0.426; $p=0.00<0.05$, ICT usage in internal communication had significant positive relationship with administrative quality of principals. Therefore, given that the relationship between ICT usage in internal communication and administrative quality of principals was statistically significant, the null hypothesis was rejected.

The results from t-test for independent samples revealed (t (180) =.809, p=.601, p=0.00<0.05, meant that there was no significant difference. Hence position held by deputy principals and ICT teachers' in-charge on ICT usage for internal communication was not different either.

From interviews, a principal confirmed that SMS and WhatsApp were commonly used for communication between administration staff and stakeholders. A SCQASO proudly said that they communicated with principals via SM, WhatsApp; or e-mail when requesting for information which was passed over immediately. School captain reiterated that ICT made relationship between school administration and students cordial due to existence of effective and efficient flow of information, an opinion supported by non-teaching staff.

2. There was no significant relationship between ICT usage in record-keeping management and administrative quality of principals

Based on results derived from Likert scales ICT usage in record-keeping had average mean of 1.11 (SD=0.71), posted by deputy principals. This was interpreted to show minimal usage of ICT in management of school records. However, ICT teachers in-charge posted average mean of 1.95 (SD=0.63), which indicated satisfactory usage of ICT, contrary to deputy principas. The results notably, established that public secondary schools applied ICT in various aspects of keeping school records at different frequencies.

From ANOVA results of (r=0.361; p=0.00<0.05) and (r=0.402; p=0.00<0.05) was found for Deputy principals and ICT teachers respectively. It was revealed that at 0.361, ICT usage in school record-keeping had significant positive correlation with administrative quality of principals. At the same time at 0.402, ICT usage in school record-keeping also had significant positive correlation with administrative quality of principals. Given that relationship was

statistically significant, null hypothesis was rejected. Both respondents posited that positive significant relationship between ICT usage in record-keeping and administrative quality of principals existed

T-test results for independent samples produced (t (180) =0.409, p= 0.325) for record keeping for deputy principals and ICT teachers respectively. Based on P=0.00<0.05, significance results indicated that ICT usage in record keeping determined administrative quality of principals in public secondary schools. That the position held by both respondents on ICT usage for record keeping was not different.

From interview data, a principal stated that his work of maintaining teachers' work record, student and staff attendance, was simplified by ICT. He reiterated that he comfortably work with ICT teachers and deputy principal in regards to management of various school records. Teacher performance and appraisal data The ICT teacher like other teachers confirmed that ICT was used for examination result analysis, class attendance and time table were safely kept in data base and readily accessed on demand. It was attested by none teaching staff that they easily accessed payrolls, NSSF, NHIF and other deductions from ICT platform at will. A deputy principal posited that ICT had shortened the time he used in making master time table. At the same time SCQASO confirmed that principals timely submitted teacher performance and appraisal data via ICT platform.

3. There was no significant relationship between ICT usage in Human resource management and administrative quality of principals

The five sub themes considered under human resource management were; personnel management, supervisory tasks, student management, BOM and stakeholders' management.

Based on results derived from Likert scales, ICT usage in personnel management attracted mean average score of 2.01 (SD=0.84). This was interpreted to show satisfactory usage level. This meant that according to deputy principals, ICT was satisfactorily used in managing school personnel. On the other hand, ICT teachers in-charge posted mean average of 1.93 (SD=0.73) for ICT usage in school personnel management. Similarly, the mean showed satisfactory usage level in the same aspect. Both respondents concurred on the fact that ICT platform was satisfactorily used in such aspects as in recruitment and in development and training. This finding was reflected by 35(38.5%) and 36(39.6%) deputies for recruitment process and development /training respectively. While 41(45.1%) and 40(44.0%) ICT teachers agreed with deputies that ICT was satisfactorily used for purposes of recruitment and personnel development and training respectively.

From ANOVA results of r= 0.496, p=0.00<0.05; and r=0.217; p=0.00<0.05; was found for personnel management in Homabay by deputy principals and ICT teachers respectively. It was revealed that at 0.496 ICT usage in personnel management had significant positive correlation with administrative quality of principals. And at 0.217 ICT teachers stated that there existed positive significant correlation with administrative quality of principals. The relationship between ICT usage in personnel and administrative quality of principals existed, hence null hypothesis was rejected.

T-test result for independent samples recorded 0.119; 0.330 for deputy principals and ICT teachers respectively with 0.00 level of significance, based on p< 0.05. The results suggested that ICT usage in personnel management determined administrative quality of principals in public secondary schools.

Based on results derived from Likert scales, deputy principals posted average mean of 2.00(SD=0.79) that showed satisfactory usage level of ICT in management of supervisory tasks while ICT teachers in-charge responded with average mean of 1.81 (SD=0.75) equally showing that ICT usage was at satisfactory level in that respect. Both respondents agreed that ICT was satisfactorily used in management of supervisory tasks.

From ANOVA results of $r=0.501$; $p< 0.05$, $r= 0.103$; $p<0.05$ for supervisory tasks were recorded for deputy principals and ICT teachers respectively. Results showed positive correlation between ICT usage in supervisory tasks and administrative quality of principals. Since, with 0.00 significance level based on $p<0.05$, null hypothesis was rejected. It was revealed that both respondents agreed that significant positive relationship between ICT usage in management of supervisory tasks and administrative quality of principals existed.

A t-test results for independent samples were $p=0.392$, 0.530 results for supervisory tasks by deputy principals and ICT teachers respectively. Based on $p=0.00<0.05$, results suggested that ICT usage in supervisory tasks management determined administrative quality of principals in public secondary schools.

Based on results derived from Likert scales, deputy headteachers' response had average mean of 1.46 (SD=0.82) while from ICT teachers' response average mean of 1.82 (SD=0.79). Deputies' mean was interpreted to show minimal usage level of ICT while from ICT teachers average mean showed satisfactory usage level of ICT in that respect. The two results revealed that both respondents had different opinions about ICT usage levels in the management of student affairs. Hence, the respondents had different positions on ICT usage of student affairs.

From the ANOVA results of r=0.008; p=0.05; r=0.024; p=0.05 were recorded for students' management by both respondents respectively. The results showed positive correlation between ICT usage on student management and administrative quality of principals. Since, with 0.008 and 0.024, at significance p=0.00<0.05, relationship between ICT usage on student management and administrative quality of principals statistically significant, null hypothesis was rejected.

T-test results for independent samples gave P=0.663;0.576 for student management by deputy principals and ICT teachers, with 0.00 significance level based on p< 0.05, results suggested that ICT usage in student management determined administrative quality of principals in public secondary schools.

Based on results derived from Likert scales, response from deputy principals was rated at average mean of 2.01(SD=0.90) and average mean of 1.96(SD=0.78) from ICT teachers' response. Both means were individually interpreted to show satisfactory level usage of ICT in management of BOM. This meant that deputy headteachers and ICT teachers' in-charge agreed that ICT was satisfactorily used in management of BOM

From ANOVA, results of r=0.842; p<0.05, r=0.061; p<.05 were found for BOM by deputies and ICT teachers respectively. With coefficient (r)=0.72 acceptance level, study results of r=0.842 was more than r= 0.72. Therefore, results showed statistically no positive correlation between ICT usage in management of BOM and administrative quality of principals. On the contrary, results from ICT teachers, strongly showed statistically positive correlation between ICT usage in BOM management and administrative quality of principals. Therefore, both

respondents disagreed. According to deputy principals no significant relationship between ICT usage in management of BOM and administrative quality of principals existed. This was contrary to position of ICT teachers in-charge who maintained, there was positive significant relationship between ICT usage in management of BOM and administrative quality of principals.

T-test results for independent samples were p=0.658; 0.344 for BOM by deputy principals and ICT teachers respectively. With 0.00 significance level based on $p<0.05$ the result suggested that ICT usage in management of BOM determined administrative quality of principals in public secondary schools.

Lastly, based on results derived from Likert scales, deputy principals response rated at average mean of 1.78(SD=0.78) as ICT teachers response recorded average mean of 1.53(SD=0.76). Both mean scores were interpreted to show satisfactory usage level of ICT in that respect. This meant that both respondents agreed that ICT usage in managing other stakeholders was satisfactory.

From ANOVA results of r=.498; p<.05, r=.498; p<.05, were found for stakeholders' management by deputy principals and ICT teachers respectively. The result showed positive significant correlation between ICT usage in management of stakeholders and administrative quality of principals in public secondary schools. The results therefore, revealed that null hypothesis was rejected. Respondents agreed that there existed significant relationship between ICT usage in managing other stakeholders and administrative quality of principals.

T-test result for independent samples were p=.195; .620 for stakeholders by both respondents respectively. Since with 0.195 and significance level based on p<.05, results suggested that ICT usage in managing stakeholders determined administrative quality of principals in public secondary schools.

A principal when interviewed stated that the era of reding volumes of papers to get bio data of an applicant was forgotten. Access to such data was eased by presence of technology. SCQASO confirmed that relationship between ICT usage in management of human resources and administrative quality of principals significantly positive. Non-teaching staff stated that principal and secretary sent SMS to shortlisted persons to attend interviews or collect appointment letters. Further, they said that even BOM were invited to a meeting via SMS.

4. There was no relationship between ICT usage in financial resource management and administrative quality of principals

Based on results derived from Likert scales, average mean of1.80 (SD=0.74) was recorded from deputy principals' response and average mean of 1.73 (SD=0.71) posted from ICT teachers' response. Both means was interpreted to show satisfactory usage level of ICT in financial resource management. Both respondents agreed that ICT was satisfactorily used in management of financial resources.

From ANOVA results of r=.265; p<.05; r=.391; p<.05 were found for financial resource management by deputy principals and ICT teachers respectively. Results showed significant positive correlation existed between ICT usage in financial resource management and administrative quality of principals hence null hypothesis was rejected.

T-test results for independent samples gave p=.644, .495 for financial resource management from both respondents respectively. Since with 0.00 significance level based on p<.05, results suggested that ICT usage in financial resource management determined administrative quality of principals in public secondary schools.

During interview session a principal confirmed that he used ICT in preparation of budget estimates and presented printed copies to the BOM for discussions. Departmental budget estimates were presented to the deputy principals' office in soft copies. A SCQASO stated that during BOM meetings printed financial statements such as trial balances, creditors and creditors were presented in spreadsheets. A school captain confirmed that students easily checked their fee balances from student potholes whenever necessary.

5.3 Conclusions of the study

From the study findings, it was concluded that there was:

1. Significant positive relationship between use of ICT in management of school internal communication and administrative quality of principals. Therefore, use of ICT in the management of internal communication determined administrative quality of principals in secondary schools.
2. Significant relationship between ICT usage in management of school record keeping and administrative quality of principals in Homabay. According to deputy principals and ICT teachers, ICT platform was pronounced in management of student's admission, registration, and examination result analysis. Further that use of ICT in record keeping determined administrative quality of principals in pubic secondary schools.

3 Significant relationship between ICT usage in human resource management and administrative quality of principals in secondary schools in Homabay. For each of five sub-themes, significant positive relationship between ICT usage and administrative quality of principals. Use of ICT on human resource management determined administrative quality of principals.

4 Significant positive relationship between ICT usage in financial resource management and administrative quality of principals in secondary schools in Homabay. And that ICT usage in management of financial resources determined administrative quality of principals. Further, it was concluded that variations in levels of ICT usage in management of various aspect of financial resources reflected in variability in administrative quality of principals.

5.4 Recommendations of the study

The following recommendations were made:

1. School management to enhance use of ICT in internal communication. They could accomplish that by establishing functional ICT department fully equipped with relevant tools, equipment and infrastructure.
2. School management should entrench staff development orientation and training process through regular seminars and workshops for integration of ICT in record keeping management especially for principals, deputy principals and teachers who were in managerial positions.
3. The school management to entrench motivational aspects to principals, deputy head teachers, both teaching and non-teaching staff as well as students in order to embrace importance of using ICT in management of human resource. This could be

accomplished by enhancing staff development orientation programs- insets, seminars and workshops on importance of infusing ICT in the administration and management of human resources.

4. All principals should be information technology (IT) savvy and use technologys effectively and efficiently to manage financial resources. To achieve this, the Ministry of Basic Education should organize training programs and refresher courses for principals and staff in the accounts department on how to use ICT to manage school financial resources.

5.5 Suggestions for Further Research

1. Investigate the characteristics of human resources that make it difficult to infuse ICT in the management of human resources.
2. Investigate financial practices that hinder process of incorporating ICT into management of financial resources in secondary schools.
3. Other researchers in area of ICT in administration could replicate this study in other geographical and institutional setup.

REFERENCES

Abdul, R., &Zohora, F. (2012). ***ICT*** *utilization among school Teachers and Principals in Malaysia:* International Journal of Academic Research in Progressive Education and Development, Vol.1, No. 4 ISSN: 2226-6348

Abid, A. (2004). *'Information Literacy for Lifelong Learning.'* A paper presented at the 70th IFLA General Conference and council of the World Library and Information in Council, Buenos- Aires- Agentina, and UNESCO.

Abu, E., Raed A. I. (2011). *The Impact of Automation of human resources departments in Palestinian Universities on quality of work from the point of view for its employees and mechanism of development.* Master's Thesis, Hebron University, Palestine.

Adeyemi, T. O., & Olaleye, F. O. (2010). Information and Communication Technology (ICT), for the effective management of secondary schools' administrators' effectiveness in Cross River State. Nigeria. Un published PhD Dissertation. Faculty of Education, University of Calabar, Nigeria

Amanize, B. (2000). *Contemporary issues in school organizations*. Port Harcourt Spring Filed Publishers.

Anamuah, & Mensah, J. (2009). '*The Impact upon Local Development and Digital Inclusion for Small and Medium Business'* in connect world ICT magazine Article, pp.5-17. Available also at: http://www.Prof.Jophus, Anamuah, Mensah htm [accessed in Oyo, Nigeria: 24 August 2009.]

Andoh, A. A. (2012). An explanation of teachers' skills, perceptions and practices of ICT in teaching and learning in Ghanaian second cycle schools. *Contemporary Education Technology,3(1), 36-49.*

Armstrong, M. (2001). *A handbook for Human resource management practice:* London: Kogan page.

Ashrafi, & Murtaza, M. (2008). Use of ICT on MSEs in Oman, *Electronic Journal of Business and Management Information System and Evaluation,* 10: 125-138

Atallah, A. &Atallah (2016). *'The impact of Electronic HRM (e-HRM) on organizational Development of URRWA in Gaza Strip.'* Master's Thesis, The Islamic University Gaza, Faculty of Commerce, Depertment of Business Administration.

Attom, E. B. (2012). The Impact of ICT ON business Growth Strategies of MSEs in AwutuSena East Municipality of Central Region of Ghana, *Asian Journal of Business and Management Science,* 3(2): 13-28.

Atsu, A. A. (2014*). Provision, Utilization of Information and communication technology (ICT) resources and secondary schools' administrators' effectiveness in Cross River State.Nigeria*. Unpublished PhD Dissertation, Faculty of Education, University of Calabar, Calabar. Nigeria.

Baokyee&Banini, (2008). *Teacher ICT readiness in Ghana*

Bassey, S. U., Okodoko, D. &Akpanumoh, U. D. (2009). *'Information and Communication Technologies in Management of Education for Sustainable Development in Africa.'* In African Research Review, 3(3), pp. 414-428.

Bebell, Russell &O'Dweyer, (2004). *Measuring teachers' Technology uses:* Why multiple measures are more rewarding. Boston, MA: Technology and Assessment Study Collaborations, Boston College.

Best, J. A. & Khan, V. J. (2011*). Research in education*. Boston: Ally al Bacon.

Boakye, K. &Banini, D. A. (2007). *"Teacher ICT readiness in Ghana."* In K. Toure, TMS. Tchombe& T. Karsenti (eds). ICT and Change Mindset in Education. Also accessed at: http://www.Repenser.I'education. aI'aide. TIC mht [accessed in Oyo, Nigeria: 24 August 2009]

Bryman, A., & Cramer, D. (2009). *Quantitative data analysis with SPSS for windows: A guide for social scientists.* London Routledge.

Cohen, L., & Manjon, L. (2006). *Research Methods in Education. London*: Croom Helm LTD.

Cole, G. (2003). *Management Theory and Practice.,*

Cheryl, H. W. (2005*). Educational Technologists in Higher Educational Institutions in South Africa.* Moving beyond random acts of progress.355-361.

Clifton, H. D. (2007*). Business data systems*. Prentice Hall, Englewood-Cliffs.

Cresswel, J. W. (2014). *Research Design: Quantitative, Qualitative and Mixed*

Methods Approach (3rd. Ed.). London. Sage Publishers.

David, B., & Resnick, J.D. (2011). *What is Ethics in Research and why is it important*? National Institute of Environmental Health Sciences.

www.niehs.mh.gov/reseach/resources/bioethic/what is /Retrieve 17th

August,2014.

Dawo, J. I. (2016). Relationship between Teacher Work-place Conditions and Teacher Transfer Intentions in public secondary schools in Mbita and Suba Sub-Counties, Kenya. Unpublished PhD Thesis. Maseno University.

Dawo-Okwiri, J. I., Kawasonga, M. A., &Gogo, J. O. (2015). School Leadership as Determinant of Teacher Transfer Intention in Public secondary schools in Mbitaabd Suba Sub-Counties, Kenya. IOSR Journal of Humanities and Social Sciences (IOSR-JHSS) Vol.20, Issue9.

Edem, E. A. (2005). *Principals' personal characteristics and organizational effectiveness of secondary schools in Southern Senatorial District of Cross River State, Nigeria.* Unpublished M.Ed. Thesis, University of Calabar, Calabar, Nigeria.

Erick T., Ken B., & Fred E., (1951). *Human Relations*; Feb 1951, vol.4 issue 1, p3-38,

36.

Ekpe, E. E. (2009). *Application of Information and Communication Technology ICT*

in the administration of secondary schools in Southern Senatorial District of

Cross River State. Unpublished M.Ed. Thesis.University of Calabar. Calabar,

Nigeria.

Etudor-Eyo, E., An nte, H. A., &Emah, E. I. (2011*). Use of ICT and communication effectiveness among secondary school Administrators.* Journal of Education and Sociology, Vol. 2 No.1.

Fraenkel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in education.* New York: McGraw- Hill.

Freud, W. L., & Simon, J. D. (2000). *Educational research: Competencies for analysis and application (6th.ed.).* Upper Saddle, N. J.: Charles Merrill Publishing Company.

Gachoki, T. N., (2006). *An Investigation into the causes of male students' dropouts in public secondary schools in Kipipiri Division Nyandarua District.* Unpublished Doctoral Dissertation, Michigan: Western Michigan University.

Gadamsetty, S. A. (2013). *Understanding Financial Inclusion in India and role of ICT*. International Journal of Innovative Research and Development, 2(12): 198-201.

Gail, M. S. &Artino, R. A. Jr. (2013). *Analyzing and Interpreting Data from Likert type scales*. Journal of Graduate Medical Education: Dec.2013, Vol.5, No.4 pp 541-542.

Garbarino, S. & Holland, J. (2009). *Quantitative and Qualitative Methods in Impact Evaluation and Measuring Results:* Governance and Social Development Resource Centre. www.gsrdc.or.

Gay, L. R. (2006). Educational Research: *Competencies for Analysis and Application*. London: Merrill Publication.

Giuri, P. Torris, S. &Zinovyeva, N. (2008). *ICT skills and Organizational Change: Evidence from Italian Manufacturing Firms.* Chicago:Oxford University Press.

Government of India (GOI), (2012). "Key issues and Constraints" in implementing the RTI Act. Available at: http://rti.gov.in/rti corner/study by pec / key issues.pdf (accessed on 02/01 2012).

Government of Kenya (GOK) (2006). National Population Census. Nairobi.

Government Printers.

Grey, C. J. (2005). Knowledge management practices for sustainable construction: Political tensions in emerging ICT knowledge tools in private and public sectors, *information, knowledge and management:* re assessing the role of ICTs in public and private organizations, Rome superior schools of public administration, ESRC, the University of Manchester, UMIST and the University of Press.

Hennessey, S. (2010). *Developing the use of information and communication technology, to enhance teaching and learning in East African schools:* Review of the Literature. Aga Khan University, Nairobi Kenya.

Idowu, M. B. (2006). *Communication and Intuitional stability*, Paper presented at the National Conference on Information and Communication Technology in service of Education. University of Nigeria. Nsukka, may 15-18.

Integrated Development Plan (2013-2017). Homabay County.

International Journal of Information Science and Systems, (2015), 4(1): 1-14. *Impact of ICT on Effective Financial Management.* Florida, USA.

International Journal of Management, IT and Engineering. http://www.ijmra.us.

Kavangi, L. (2010*). Computers in Schools*. Nairobi: Jomo Kenyatta Foundation.

Karl, W. (2000). *Computers, Obsolescence, and Productivity.* FEDS Working Paper no.2000 – 06.

Kennewell, S. Parkinson, J. & Tanner, H. (2007). *Developing the ICT Capable School*. London Routledge Books, p. 11-15. Also available at: http://www.mht/google Books. [accessed in Oyo, Nigeria: 24 August 2009]

KESI, (2011). *Diploma in Education Management for Primary schools*. Kenya Beurre of Literature.

Kiumi, J. K., (2008). *Relationship between principals' management approaches and level of students' discipline in public secondary schools in Nyandarua and Laikipia Districts, Kenya.* Unpublished PhD Thesis, Egerton University.

Kombo, (2013). *Tremendous advances in computer technology and the evolution of internet have led to new approaches in learning and training.* www.hrpub.org/download/20131107/wjcat4-13701425.pdf

Khashman, A., Al-Ryalat, H. (2015). *The Impact of Electronic HRM (e-HRM) PRACTICES ON Business performance in Jordan Telecommunication Sector:* "The Employee Perspective." Vol.7, No.3.

Laaria, M. (2013). *Leadership Challenges in the implementation of ICT in public secondary schools, Kenya*, Journal of Education Learning 2(1), 32-43. Htt;//dx.org/105539/jel.v2n1p.32.

Leonard, K. M. (2009). *Examining Media Effectiveness across National Borders: A review and multilevel frame work:* International journal of Cross-Cultural Management.

Mangal, S. K. & Mangal U. M. A. (2009). *Essentials of Educational Technology*. New Delhi: PHIL Learning Private Limited.

Makewa, Role &Nyamboga (2011). *Teacher evaluation of principals' leadership characteristics related to computer studies implementation in Rongo District Kenya*. (IJEDICT), 2011, Vol.7, issue2, pp.4-14.

Makhonu, E. (2010). *Principals' literacy in ICT towards improving secondary school performance in Kenya.* PhD theses, University of South Africa.

Makhanu&Kamper (2012). *The relationship between principals' access to information and communication technology ICT and school performance in Kenya. https://www.heraldjournals.org/hjegs/archives.htm.* Herald International Research Journal

Manduku, J., Kosgey, A., & Sang, A. (2012*). Adoption and use of ICT in enhancing management of public secondary schools:* Asurvey of Kesses Zone secondary schools in Wareng District of Wasin Gishu County, Kenya.

Medeiros, A. (2012). *Influence of Aging on the Experience of Information and Communication Technology.* Department of Engineering, University of Combodia.

Menaha, S., Amaratunga, R. D., & Haigh, R. (2008*). Employability of women managers in Educational sector: A study on their leadership Role. Research Institute for the built and Human Empowerment.* University of Salford, Salford M54WT. Greater Manchester, UK.

Menjo, D., &Boit, J. (2012). *The challenges of using ICT in school administration in Kenya.* Moi University, Kenya. PMid: 22770986

Mugenda, M., & Mugenda, G. (2003). *Research methods quantitative and qualitative*

approaches. ACTS Press Nairobi.

Mbangwana, M. A. (2007). *"Introduction to ICT in Cameroon*" in K. Toure, T.M.S. Technology and T. Karsenti (eds). ICT and Changing Mind sets in Education. Available at: http://www.Repenser. I'education.aI'aid.TICmht.[accessed in Oyo, Nigeria: 24 August 2009].

Mbatia (2014). *Factors influencing school principals' integration of ICT in administration of public secondary schools.*erepository.uonbi.ac.ke.

Nachmias, D. W., & Nachmias, C. F. (1996). *Research methods in social sciences. (5th. Ed.).* London: Edward Arnold. Nairobi: Lectern Publications Ltd.

NCET (National council for Education Technology). (1994). *Computer for education: report of a working party into the potential application and development of computer-based learning systems*. Worldcart.org>/ccn-n80067189.

O'Brien, J. A. &Marakas, G. M. (2010). *Enterprise Information System.* New York, MCG raw Hill.

Ogechukwu&Oswagwu (2009). *ICT in Education: Achievement so far.* Abuja, Nigeria.

Ogula, P. A. (2005). *Research Methods*. Nairobi: CUEA Publications.

Ogutu J. O. (2008). *The impact of ICT integration in the six Nepad e-schools in Kenya.* In: Thesis. UON Website Search.

Onuma, N. (2007*). Utilization of Information and communication technology in schools: Problems and Suggestions.* in J. B. Babalola, G. O. Akapa, A. O. Ayemi and S. O. Adebeji(eds) Access, Equity and Quality Higher Education 487-496

Orodho, A. J. (2009). *Essentials of Educational and Social Sciences Research Methods.* Nairobi: Masola Publishers.

O'Reilly M, & Parker N. 2010*). Unsatisfactory saturated sample sizes in a critical exploration of the notion of saturated sample sizes.* Qualitative Research. 13(2):190-7.

Owen, S. R. G. &Valesky, T. C. (2011). *Organizational Behavior in Education leadership, and School Reforms.* New Jersey:Person Education, Inc.

Oso, W.Y. &Onen, D. (2009). *A General guide to writing Research Proposal and Project.* Kisumu:Option Printers & Publishers.

Papoioannon, P. & Charalambous, K. (2011). Principals' attitude towards ICT and their perceptions about the factors that facilitate or inhibit ICT integration in primary schools of Cyprus, *journal of information technology education 10(1) 349-369.*

Raby, B. J. W. (2004). *Vows of poverty and the tax collector* https://ssrn.com/abstract=629361

Razae, Z., Elam, R., &Sharbatoghlie, A. (2009*). Continuous Auditing:* Audit of the Future Manage.I Auditing j.*16 (3) 150- 158.*

Republic of Kenya. (2003*). Economic Recovery Strategy of Wealth and Employment Creation*. Nairobi: Government press.

Republic of Kenya. (2005). *Kenya Education Structure Support Program*.

Nairobi: Government press.

Republic of Kenya. (2003). *The computer for schools*. Nairobi: Government press.

Republic of Kenya Ministry of Education. (2006). *National ICT Strategy and Training.* Nairobi. Government Printers.

Republic if Kenya. (2006). *National ICT Policy*. Nairobi, Kenya: Government Press.

Republic of Kenya Vision 2030. (2008). *Integrating Information and Communication Technology in the process of Infrastructure Services.* Nairobi, Kenya: Government Printers.

Republic of Kenya, National Econo

mic and Social Council of Kenya. (2007). *Kenya*

vision 2030

http://www.investment Kenya.com/Document/Publication/Vision.

Republic of Kenya. (2002-2008*). Development Plan*. Nairobi, Kenya: Government Printers.

Republic of Kenya. (2010). ICT capacities and capabilities in secondary schools in Kenya 2009/2010, NTC No: 146. Nairobi. Kenya. Government Printers.

Republic of Kenya. (2012). Kenya Bureau of Statistics. Nairobi, Kenya. Government Printers.

Republic of Kenya Ministry of Education, Science and Technology (2006-2011). Strategic Plan. Nairobi, Kenya. Government Printers.

Ritchie, J., Lewis, J., & Elam, G. (2003). *Designing and Selecting Samples*. In Ritchie and Lewis. (Eds.). Qualitative Research practice. A Guide for social science students and Researchers. Thousand Oak, CA: Sage.

Roberts, A. (2010). *A Great Revolutionary Law*. The First Four Years of India's Right to Information Act. Public Administration Review. Vol.70 (6), 925-933.

United Nations, (2003). Press Release Pl/1548 12 December: "E- schools and communities initiative Launch Today at Information Summit' http://www.un.org./news/press/docs/2003/.doc.htm Accessed 7 Dec. 2006.

Telem, W., & Walter, K. (2011). School Administrators' perceptions of trends, issues and responsivities relating to modern educational climate.

Thomas G. (2009). How to do your research Project: A Guide for Students. https://books.google.com/.../How-to-Do-Your-Research-Project.ltmI?id...

Tinio, V. L. (2003). *ICT in Education.* e- ASEAN Task Force 3 (10).200,2003.

Ubani& Njoku (2006). *ICT and Nigerian Teachers.* Paper delivered at Teachers Registration Council of Nigeria (TRCN), National Workshop. Abuja: TRCN,17th-21st October 2006.

Ukandu, N., Iwu, C., & Allen- ILE, C. (2014). *Influence of e-HRM in decision making in selected tertiary institutions in SA.*

UNESCO, (2002). *Information and Communication in Education: A Curriculum for teachers' Development.* Paris: UNESCO.

Vernon, R. (2001). *Knowing where you are going; Information System for Agricultural Research management.* The Hauge: International Service for National Agricultural Research.

Wagithimu, M. N., Muthee, J., & Thinguri, R. (2014). Acritical Analysis of School Principals' Competence in Financial Management in Kenya: Accountability in Educational Planning and Management. *Journal of Education and Practice ISSN 2222-1735 (Paper, 5(25). Retrieved from www.liste.org.*

Wango, G. (2009*). School Administration and Management* (Quality Assurance and

Standards in Schools). Nairobi: Jomo Kenyatta Foundations.

Waweru, S. N. (2008). *Organization Behavior*. Kenyatta University: Unpublished

Raw Data

World Bank (2007). *"Knowledge and Skills for the Information Age:* The first meeting

of the Mediterranean Development Forum. Available at: http://www.world

bank bank.org/htm/fdo/technet/indf/objective. Htm. [accessed in Oyo, Nigeria:

9 October 2011]

Yishan, Z.H. &Niklow, C. (2011). *ICT Governance in the United Nations Systems*

Organization. United Nation. Geneva 2011.

APPENDICES

Appendix A: Questionnaire for Principals

This questionnaire was designed to solicit information about the relationship between ICT usage and administrative quality of principals. Do not write your name or the name of your school anywhere on the paper. Please respond by indicating a tick ( ) against the correct option.

SECTION A: BACKGROUND INFORMATION

Part A: Demographic Information

a) What is your gender?

Male ( ) Female ( )

b) What is your highest level of education and professional qualification?

PhD. ( ) MA ( ), M.Ed.( ) B.Ed. ( )

BA/BSc. ( ) Diploma ( )

c) How many years have you worked as a principal?

10 years and below ( ) between 19 – 20 years ( )

Between 21 – 30 years ( ) 31 years and above ( )

SECTION B: ADMINISTRATIVE QUALITY OF PRINCIPALS

1. Do you think that as a school principal you are a consultative administrator? Yes ( ) NO ( )

   Why do you think so…….?

2. Do you think you are a delegative Head teacher? Yes ( ) No ( )

   Give reason why you say so…….

3. Do you think you are available? Yes ( ) No ( )

   Give your reason for you answer……

4. Do you think you are knowledgeable and dependable? Yes ( ) No ( )

   Explain why you think so.....

5. Do you think you are visible? Yes ( ) No ( )

   Give reason for your answer…….

6. Do you think you are assertive and focused? Yes ( ) No ( )

   Why……

7. Do you think you are approachable and accessible? Yes ( ) No ( )

   Explain your answer……

8. Do you think you are objective and open-minded? Yes ( ) No ( )

   Why? .....

9. Which one of the characteristics above is most challenging to show? .....

Why do you say so? .....

10. a) Are you computer literate? Yes ( ) N0 ( )

b.) How does your knowledge of ICT help advance your duties school administrator?

c.) How does this knowledge hinder your duties as a school administrator? .....

SECTION C: Usage of ICT in school communication management

11a). Do you use the following means to communicate? To indicate your response kindly put a tick ( ) appropriately.

4 – Strongly Agree, 3 – Agree, 2- Disagree, 1- Strongly Disagree

Table 3.5 modes of ICT Communication

Means of ICT Communication	Strongly agree	Agree	Disagree	Strongly disagree
Digital projector				
Video				
Website				
E-mail				
SMS				
Twitter				
WhatsApp				
Radio				
TV				
Fax				
Mobile phones/Telephone				
Digital Printer/Scanner				
Instagram				

b. what major challenge do you face when in ICT usage school communication process management? ……

c. How do you attempt to address it? .....

SECTION D: ICT usage in school record keeping management

12a. Do you use ICT to keep records? Tick ( ), appropriately.

Table 3.6 ICT Usage in school record keeping management

Types of Records	Strongly Agree	Agree	Disagree	Strongly Disagree
Admission				
Registration				
Student Attendance				
Personal bio data				
Boarding facilities records				
Safety practices activities records				
Health services records				
Recreation activities records				
Transportation activities records				
Records of work of teachers				
Time tables				
Examination results				
Teaching loads				
Staff attendance				
Staff development				
Promotions				
Staff welfare				
Loans				
Leaves				

b. Do you find usage of ICT in school record keeping management useful?

Yes ( ) No ( )

Give your reasons……

c. What major challenge do you encounter in such usage? .....

d. How do you attempt to address this challenge? .....

SECTION E: I**CT usage in Human resources management**

13a. Do you frequently use ICT in Human Resource Management?

To indicate your response kindly tick ( ) appropriately.

Table 3.7: ICT usage on Human resources management

Personnel management tasks	Strongly Agree	Agree	Disagree	Strongly Disagree	
GENERAL MANAGEMENT TAKS; Recruitment process					
Development and training					
Compensation					
Integration					
Maintenance					
Separation					
B. **Supervisory tasks**					
Staff records					
Staff meetings					
Teacher motivation					
Job satisfaction					
Involvement In decision making					
Need to be valued					
In-school staff development					
Assessment of teacher performance					
C; Managing students					
Communicating school values					

Setting standards/ goals					
Enrolment/Participation Low/High					
Guidance and Counseling					
Management of B.O.M					
Explaining Legal framework for elections					
Explanation of roles /responsibilities					
Development planning					
Fund rising					
Disciplinary matters					
MANAGEMENT OF OTHER STAKEHOLERS					
Working with Education officials/KNUT and others					
Linking school and community: parents, business people, and other institutions					

b. How do you find usage of ICT in management of various personnel in school? .....

c. What major challenge do you face in ICT usage for human resources management? .....

d. How do you attempt to overcome this challenge? .....

SECTION F: Usage of ICT in Financial resources management

14a. Do you apply ICT in management of school finances?

Indicate your response by ticking ( ) appropriately.

Table 3.8: **ICT usage in school financial management in public secondary schools**

4- Strongly Agree, 3-Agree, 2- Disagree, 1- Strongly Disagree

Aspects of financial management	Strongly Agree	Agree	Disagree	Strongly Disagree	
Preparation of budget estimates					
Presentation of Budget for approval					
Budget implementation					
Reception/raising of funds					
Cost- sharing					
Laying strategies for fund raising					
Expenditure of funds					
Managing emoluments					
Accounting of funds					
Presentation of books for Auditing					

b. How useful do you find ICT usage in financial resources management in your administrative quality of public school? .....

c. What major challenge do you face when using of ICT for management of school finances? .....

d. How do you attempt to overcome it? .....

Appendix B: Deputy principals' Questionnaire

SECTION A. Background Information

1. What is your gender? Male ( ) Female ( )
2. Your highest academic and professional qualification

   PhD. ( ) MA ( ) Med.( ) Bed. ( ), BA/B.Sc. ( )

3. How long have you been as deputy head teacher?

   Below 10 years ( ) Between 10 – 20 years ( ) Between21-30 years ( )

   31 years and above ( )

4a. Indicate your relationship with Principal Very good ( ) Good ( ) Satisfactory ( ) Poor ( )

4b. Support your answer……

SECTION B: Administrative Quality of principals

15a. Kindly, rate the administrative quality of principals, by putting a tick in the correct column.

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree.

Table 3.9. Administrative Quality of principals

Principals Administrative Qualities	Strongly Agree	Agree	Disagree	Strongly Disagree
Consultative				
Delegative				
Available				
Assertive / Focused				
Approachable / Accessible				
visible				
Knowledgeable / Dependable				
Objective / Open-minded				

b. Which characteristics best enhances his relation with people for school overall performance? .....

Support your answer…….

c. Which characteristic most hinders his relations with people for school overall performance hinder good school performance?……. ……

Support your answer…….

SECTION C: ICT usage in school communication management

16a. Rate the following aspects of for ICT communication aspects.

Kindly put a tick ( ) in the correct column.

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree

Table 3.10: ICT usage in school communication management

COMMUNICATION ASPECTS	Strongly Agree	Agree	Disagree	Strongly Disagree
Digital projector				
Video				
E-mail				
SMS				
Twitter				
WhatsApp				
Radio				
TV				
Fax				
Mobile phones/ Telephone				
Digital printer/ Scanner				
Instagram				

b. What major challenge do you face in using ICT for communication in school because of your principal? .....

c. What attempt is made to address this challenge? .....

SECTION D: Usage of ICT in Record keeping management

17a. Rate ICT usage in record keeping aspects in your school

Kindly put a tick ( ) in the correct column

4- Strongly Agree, 3-Agree, 2-Disagree, 1-Strongly Disagree

Table 3.11: Aspects of record keeping

Aspects of record keeping	Strongly Agree	Agree	Disagree	Strongly Disagree
Admission				
Registration				
Student attendance				
Personal Bio Data				
Boarding facilities records				
Safety practices records				
Health services records				
Recreational activities records				
Transport activities records				
Records of work of teachers				
Time Table				
Examination results				
Teaching loads				
Staff attendance/ Development				
Promotions				
Loans				
Leaves				

b) What major challenge do you face in integrating ICT in managing school record because of your principal? .....

c. What attempt has been made to overcome this challenge? .....

SECTION E: ICT usage in human resources management

18a. Rate the following aspects of ICT for personnel management.

Kindly put a tick ( ) in the correct column.

4- Strongly Agree, 3-Agree, 2- Disagree, 1-Strongly Disagree

Table 3.12: Aspects of human resource management

Personnel Management Tasks	Strongly Agree	Agree	Disagree	Strongly Disagree
Recruitment process				
Development and training				
Compensation				
Integration				
Separation				
Supervisory Tasks				
Staff records				
Staff meetings				
Teacher motivation				
Job satisfaction				
Involvement in decision making				
Need to valued				
In- school staff development				
Assessment of teacher performance				
Managing Students				
Communicating schools' values				
Setting standards/goals				
Enrolment/participation low/high				
Guidance and counseling				
Management of BOM				
Explaining legal framework for election				
Explaining of roles/responsibility				
Development planning				
Fund raising				
Disciplinary matters				
Management of other Stakeholders				
Working with Education offices/ KNUT and others				
Linking school and community: parents, business people, and other institutions				

b. How do you find application of ICT in management of various personnel in schools? .....

c. What major challenge do you face in the usage of ICT in the management of personnel? .....

d. How do you attempt to overcome this challenge? ……

SECTION F: ICT usage in financial resource management

19a. Rate the following aspects of ICT for financial resources management.

Kindly put a tick ( ) in the correct column.

Table 3.13: Aspects of financial management

Aspects of financial management	Strongly Agree	Agree	Disagree	Strongly Disagree
Preparation of budget estimates				
Presentation of budget for approval				
Budget implementation				
Reception and receipting of funds				
Cost sharing				
Laying strategies for fund raising				
Expenditure of funds				
Managing emolument				
Accounting of funds				
Presentation of book for auditing				

b. What major challenge do you encounter in the usage of ICT to enhance management of school finances because of your principal? .....

c. What attempt has been made to overcome this challenge? .....

Appendix C: Questionnaire for ICT Usage In-Charge Teachers

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

2. What is your highest level of education and professional qualification?

PhD ( ), Med ( ), MA ( ) Bed ( ) BA/B.Sc. ( )

3. How long have you been ICT in- charge? 10 years and below ( ) Between 10-20 years ( )

Between 21-30 years, 30 years and above ( )

SECTION B Administrative Quality of principals

20a. Kindly, rate the administrative quality of principals by putting a tick in the correct column

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree

Table 3.14: Administrative quality of principals

Principals Administrative Qualities	Strongly Agree	Agree	Disagree	Strongly Disagree
Consultative				
Delegative				
Available				
Assertive / Focused				
Approachable / Accessible				
Visible				
Knowledgeable / Dependable				
Objective / Open-minded				

b. Which characteristic best enhances his relations with people for school overall performance? .....

Support your answer……..

c. Which characteristic most hinders his relations with people for school overall performance? .....

Support your answer…….

d. What attempt is made to address this challenge? .....

SECTION C: ICT- Usage in school communication

21a. Rate the Usage of communication ICT aspects in your school.

Kindly put a tick ( ) in the correct column.

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree

Table 3.15: ICT Usage in communication management

COMMUNICATION ASPECTS	Strongly Agree	Agree	Disagree	Strongly Disagree
Digital projector				
Video				
E-mail				
SMS				
Twitter				
WhatsApp				
Radio				
TV				
Fax				
Mobile phones/ Telephone				
Digital printer/ Scanner				
Instagram				

b. What major challenge do you face in using ICT in school because of your principal? .....

c. What attempt has been made to overcome this challenge? .....

SECTION D: Usage of ICT in Record keeping Management

22a. Rate ICT Usage in record keeping aspects in your school. To indicate your response kindly put a tick ( ) in the correct column.

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree

Table 3.16: Usage of ICT in Record keeping management

Aspects of record keeping	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**
Admission				
Registration				
Student attendance				
Personal Bio Data				
Boarding facilities records				
Safety practices records				
Health services records				
Recreational activities record				
Transport activities records				
Records of work of teachers				
Time Table				
Examination results				
Teaching loads				
Staff attendance/ Development				
Promotions				
Loans				
Leaves				

b. What major challenge do you face while using ICT in managing the school record because of your principal? ……..

c. What attempt has been made to overcome this challenge? …….

SECTION E: ICT Usage in Human Resource management

23a. Rate the following aspects of ICT for personnel management

Kindly put a tick in the correct column

4-Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly disagree

Table 3.17: Aspects of human resource management

Personnel Management Tasks	Strongly Agree	Agree	Disagree	Strongly Disagree
Recruitment process				
Development and training				
Compensation				
Integration				
Separation				
Supervisory Tasks				
Staff records				
Staff meetings				
Teacher motivation				
Job satisfaction				
Involvement in decision making				
Need to valued				
In- school staff development				
Assessment of teacher performance				
Managing Students				

Communicating schools' values				
Setting standards/goals				
Enrolment/participation low/high				
Guidance and counseling				
Management of BOM				
Explaining legal framework for election				
Explaining of roles/responsibility				
Development planning				
Fund raising				
Disciplinary matters				
Management of other Stakeholders				
Working with Education offices/ KNUT and others				
Linking school and community: parents, business people, and other institutions				

b. What major challenge do you face as you use ICT in management of personnel because of your principal? ……..

c. What attempt has been made to overcome this challenge? ……..

SECTION F: ICT Usage in Financial resources management

24a. Rate the following aspects of ICT for financial resources management.

Kindly put a tick in the correct column.

4-Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree

Table 3.18: Aspects of Financial management

Aspects of financial management	Strongly Agree	Agree	Disagree	Strongly Disagree
Preparation of budget estimates				
Presentation of budget for approval				
Budget implementation				
Reception and receipting of funds				
Cost sharing				
Laying strategies for fund raising				
Expenditure of funds				
Managing emolument				
Accounting of funds				
Presentation of book for auditing				

b. What major challenge do you encounter in the usage of ICT to enhance management of school finances because of your principal? .....

c. What attempts have been made to overcome this challenge? ……

Appendix D: Questionnaire for Teachers who do not teach computer

1. What is your gender? Male ( ) Female ( )
2. Your highest in education and professional qualification PhD ( ) Med. ( ) MA ( ) Bed. ( ) BA/BSc. ( )
3. How long have you been teaching? 10 years and below ( ) Between 10-20 years ( ) Between 21-30 years ( ) 30 years and above ( ).

SECTION A: ADMINISTRATIVE QUALITY OF PRINCIPALS

Kindly rate the principals' administrative quality by putting a tick in the correct column.

4- Strongly Agree, 3- Agree, 2- Disagree, 1- Strongly Disagree.

Table 3.19 Administrative Quality of principals

ADMINIRATIVE QUALITY	Strongly Agree	Agree	Disagree	Strongly Disagree
Consultative				
Delegative				
Available				
Assertive / focused				
Approachable/ accessible				
Visible				
Knowledgeable /Dependable				
Objective / open minded				

b. Which characteristics best enhances your principals' relationship with people for school's good performance?

Support your answer……..

SECTION B: ADMINISTRATIVE QUALITIES OF PRINCIPALS.

Kindly respond by ticking Yes ( ) or No ( ); then give justification for your answer.

1. Do you think your principal is consultative? Yes ( ) No ( )
   Give reason for your answer……..
2. Is your principal delegative Yes ( ) No ( )
   Why do you say so? .....
3. Do you think your principal is always available? Yes ( ) No ( ).
   Give reasons for your answer…….
4. Is your principal knowledgeable and dependable? Yes ( ) No ( )
   Why do you say so? .....
5. Do you think your principal is visible? Yes ( ) No ( ).
   Explain why you think so ……
6. Is your principal assertive and focused? Yes ( ) No ( )
   Explain your reason for this…….
7. Is the principal approachable and accessible? Yes ( ) No ( )
   Provide reasons for your answer……..
8. Was the principal objective and open minded? Yes ( ) No ( )
   Why do you think so ?.....

Appendix E: School Principals' Interview Schedule

1. How does ICT usage enhance your communication skills for the overall school performance?
2. Which is the best way/mode of keeping school records?
3. What challenges do you meet in the process of integrating ICT in school record keeping management?
4. How do you use ICT to enhance your administration of the Board of Management and non-teaching staff?
5. In which areas do use ICT to manage your teaching staff, students, and other stakeholders?
6. How useful is ICT usage in the preparation of school budget estimates?
7. How does ICT usage ease your work in managing school finances?

Appendix F: Interview Schedule for Deputy principals

1. How does Usage of ICT improve principal's communication skills for the overall school performance?
2. What challenges do you meet while using ICT for effective communication because of your principal?
3. Which difficulties do you meet when using ICT in record keeping management because of you principal?
4. How do you gauge use of ICT in the management of personnel for overall school performance?
5. Which are the challenges that may arise in the process of ICT-Usage because of your principal?
6. In which ways does ICT- usage enhance management of school financial resource?
7. What difficulties do you encounter while using ICT for financial resource management because of your principal?

Appendix G: Interview Schedule for ICT –Usage In-Charge Teachers

1. How does ICT- Usage in communication enhance principal's communication skills for the school's overall performance?
2. Is there a challenge in using ICT for communication because of your principal?
3. In which aspects of record keeping ICT- Usage has improved management of school records?
4. Which aspects of personnel management is ICT used frequently for the overall school performance?
5. In which aspects of financial resource management is ICT-Usage significantly seen to have improved principals' financial management skills for the overall school performance?
6. What difficulties are met when using ICT in financial resource management because of your principal?

Appendix H: Sub County Quality Assurance and Standards Officer's Interview Schedule

1. What was the relationship between use of ICT in school communication process management and principals' administrative quality of public secondary schools?
2. What impact can ICT usage in communication management put on administrative quality of principals on communication procedures?
3. Was there relationship between use of ICT in record keeping and administrative quality of principals?
4. Which school record could suitably be managed by use of ICT?
5. Was there relationship between use of ICT on human resource management and administrative quality of principals in public secondary schools?
6. Which aspects of human resource management could ICT be used suitably in secondary schools?
7. What was the relationship between ICT usage in financial resources management and administrative quality of principals?
8. How does ICT usage in financial resources management enhance principals' administrative skills in management of school finances?

Appendix I: Interview Schedule for School Captains

1. Which characteristic enhances the principal's interaction with you as a school captain for the overall school performance?
2. Which characteristic hinders the principals' interaction with the students for the overall school performance?
3. Does ICT-Usage in record keeping benefit principal's administration of school records? Explain.
4. In which aspects of record keeping management do you find ICT-Usage beneficial to the overall school performance. Why do you say so?
5. In which aspects of human resource management do you find ICT usage beneficial to the overall school performance?
6. Is ICT effectively used in the management of human resource for the overall school performance?
7. How do students receive information about school fee balances and other levies from the administration?
8. Does ICT Usage enable fast and efficient communication of financial issues from administration to students and parents? Why do say so?

Appendix J: Interview Schedule for School Non-Teaching Staff Supervisor

1. Which administrative qualities of your principal enhance his interaction with the support staff for the overall school performance?
2. What bad qualities of your principal hinder his interaction with the support staff for the overall school performance?
3. How do you receive information from the administration and pass information to the administration?
4. Is ICT effectively used by principal for communication in school? Why?
5. Is ICT properly used in the management of human resource for the overall school performance? Why do you say so?
6. Does ICT-Usage enhance the management of records? How is this?
7. Is ICT-Usage useful in the management of school financial resources? Explain.
8. What challenges could be realized in the process of using ICT for general school administration

Appendix K: Document Analysis

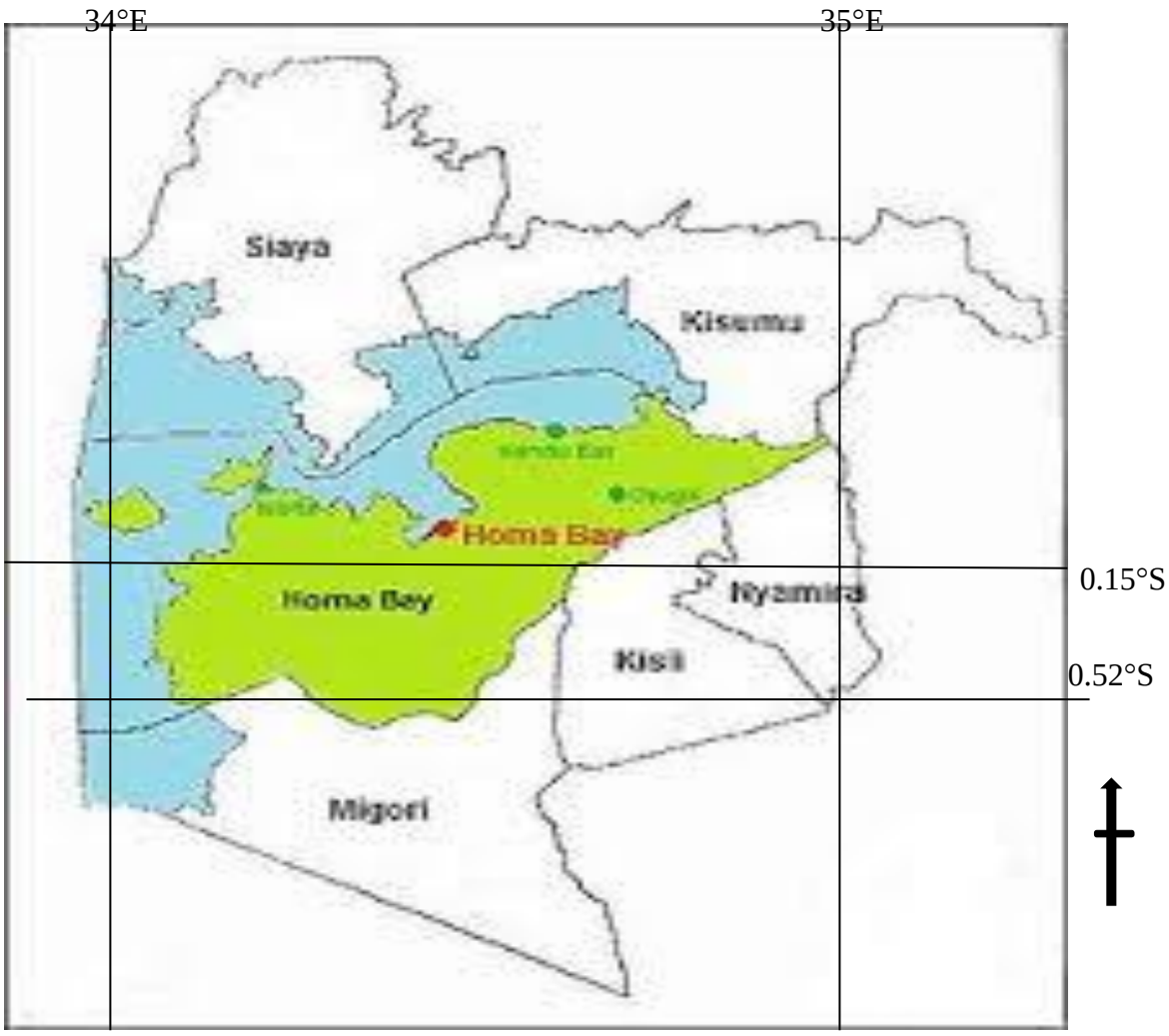
The following documents will be analyzed:

1. KCSE and internal examination analysis documents
2. Students' on-line KCSE registration documents
3. Enrolment Information System records/files (EMIS)
4. Teacher Information Management system records/ files (TIMS)
5. Downloaded information records.

-Other school records managed by ICT

-Circulars issued to teachers

Appendix L: Map of Homabay County and her Neighbors



Appendix M: Consent Form

I understand the overview given to me on the study on 'Relationship between ICT- Usage and principals' administrative quality of public secondary schools in Homabay County.

It is my understanding:

That study focused on the Relationship between ICT-Usage and administrative quality of principals in Homabay.

My identity would remain confidential and my name or the name of my institution will not be used in the study or in reporting of its findings at any point.

The purpose of the study is not to judge me or my institution on the issues or type of responses I give during the study.

I hold the right to stop participating in the study at any given time; and I shall be audio recorded when being interviewed.

I express willingness to participate in the study by signing this form.

Name…….

Signature…….

Appendix N: Proposal Approval from School of Graduate Studies.

MASENO UNIVERSITY
SCHOOL OF GRADUATE STUDIES
Office of the Dean

Our Ref: PG/PHD/6003/2013

Private Bag, MASENO, KENYA
Tel:(057)351 22/351008/351011
FAX: 254-057-351153/351221
Email: sgs@maseno.ac.ke

Date: 23rd April, 2019

TO WHOM IT MAY CONCERN

RE: PROPOSAL APPROVAL FOR GILBERT OBUODA MICHAEL OMOLO PG/PHD/6003/13

The above named is registered in the Doctor of Philosophy in the School of Education, Maseno University. This is to confirm that his research proposal titled ***"Information Communication Technology Usage and Principals' Administrative Quality of Public Secondary Schools in Homabay County, Kenya"*** has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.

MASENO UNIVERSITY 23 APR 2019

Prof. J.O. Agure
DEAN, SCHOOL OF GRADUATE STUDIES

Appendix O: Approval by Maseno University Ethics Review Committee (MUERC)

MASENO UNIVERSITY ETHICS REVIEW COMMITTEE

Tel: +254 057 351 622 Ext: 3050
Fax: +254 057 351 221
Private Bag – 40105, Maseno, Kenya
Email: muerc-secretariate@maseno.ac.ke

FROM: Secretary - MUERC

DATE: 4th November, 2019

TO: Gilbert Obuoda Michael Omolo
PG/PHD/06003/2013
Department of Educational Management and Foundations
School of Education
Maseno University
P. O. Box, Private Bag, Maseno, Kenya

REF: MSU/DRPI/MUERC/00750/19

RE: Information Communication Technology Usage and Principals' Administrative Quality of Public Secondary Schools in Homabay County, Kenya. Proposal Reference Number MSU/DRPI/MUERC/00750/19

This is to inform you that the Maseno University Ethics Review Committee (MUERC) determined that the ethics issues raised at the initial review were adequately addressed in the revised proposal. Consequently, the study is granted approval for implementation effective this 4th day of November, 2019 for a period of one (1) year. This is subject to getting approvals from NACOSTI and other relevant authorities.

Please note that authorization to conduct this study will automatically expire on 3rd November, 2020. If you plan to continue with the study beyond this date, please submit an application for continuation approval to the MUERC Secretariat by 15th October, 2020.

Approval for continuation of the study will be subject to successful submission of an annual progress report that is to reach the MUERC Secretariat by 15th October, 2020.

Please note that any unanticipated problems resulting from the conduct of this study must be reported to MUERC. You are required to submit any proposed changes to this study to MUERC for review and approval prior to initiation. Please advice MUERC when the study is completed or discontinued.

Thank you.

MASENO UNIVERSITY SECRETARY 04 NOV 2019 ETHICS REVIEW COMMITTEE

Dr. Bernard Guyah
Ag. Secretary,
Maseno University Ethics Review Committee.

Cc: Chairman,
Maseno University Ethics Review Committee.

MASENO UNIVERSITY IS ISO 9001:2008 CERTIFIED

Appendix P: Letter of Approval for Research from Homabay County.

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Telegrams: "SCHOOLING" Homa Bay
Telephone
When replying please quote
cdehomabay@gmail.com

COUNTY DIRECTOR OF EDUCATION
HOMA BAY COUNTY
P.O BOX 710
HOMA BAY
DATE: 26TH MAY, 2020

REF: MOEST/CDE/HBC/ADM/11/VOL.2/54

MR. GILBERT OBUODA OMOLO
MASENO UNIVERSITY

RE: RESEARCH AUTHORIZATION.

Following your application for authority to carry out research on ***"INFORMATION COMMUNICATION TECHNOLOGY USAGE AND PRINCIPALS' ADMINISTRATIVE QUALITY OF SECONDARY SCHOOLS IN HOMA BAY COUNTY, KENYA,"*** I am pleased to inform you that you have been authorized to undertake research Homa Bay County for the period ending **15th May, 2021.**

Please submit a copy of your findings both in soft and hard copies to this office.

Kindly accord him necessary assistance and note that all ethical practices should be observed.

Thank you in advance.

COUNTY DIRECTOR OF EDUCATION
HOMA BAY COUNTY
P.O. BOX 710-40300, HOMA BAY
Email: cdehomabay@gmail.com

SHEM OMBONYO
FOR: COUNTY DIRECTOR OF EDUCATION
Cc.

1. **County Commissioner**
   Homa Bay County.

Appendix Q: Letter of Approval from National Commission for Science, Technology and Innovation.

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **546845**

Date of Issue: **15/May/2020**

RESEARCH LICENSE

This is to Certify that Mr.. Gilbert Obuoda Omolo of Maseno University, has been licensed to conduct research in Homabay on the topic: INFORMATION COMMUNICATION TECHNOLOGY USAGE AND PRINCIPALS' ADMINISTRATIVE QUALITY OF PUBLIC SECONDARY SCHOOLS IN HOMABAY COUNTY, KENYA. for the period ending : 15/May/2021.

License No: **NACOSTI/P/20/4990**

546845

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.