INFLUENCE OF HEADTEACHERS' LEADERSHIP ON IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN PUBLIC PRIMARY SCHOOLS IN RABAI SUB-COUNTY IN KILIFI COUNTY - KENYA

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DECLARATIONS

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

study program in any university

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DEDICATION

I dedicate this thesis to Almighty God, my late Husband Evans Mnemba and our four children:

Ruth, Edith, Stephen and Sharon for encouragement.

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ABSTRACT

Information and communication Technology (ICT) has become the principal driver of economy all over the world, and its role in education sector cannot be down-played. Kenyan government inclusive, has invested heavily in ICT to align education with vision 2030.The schools have been mandated through the head teachers' leadership, to spearhead the implementation of ICT policies in the school. Despite the heavy government's investments on infrastructure and capacity building, the ICT policy implementation in Rabai Sub County is still dismal raising question on the influence of leadership on ICT implementation. This study investigated the influence head teachers' communication skills, coordination skills, quality supervision skills and motivation skill on ICT implementation in public primary schools in Rabai Sub County in Kilifi County -Kenya. This study was anchored on Diffusion of Innovations Theories by Everett M. Rodgers and Herzberg's Motivation-Hygiene theory by Frederick Herzberg. The study used descriptive survey research design to gather qualitative and quantitative data which was analyzed to describe systematically the situation of ICT implementation in Rabai Sub County in Kilifi County- Kenya. The target population was 44 public primary schools and Census technique was used. 88 respondents were obtained using purposive sampling where all 44 head teachers and 44 ICT champion teachers were sampled. The researcher used interview schedule for the head teachers and closed ended questionnaires for the ICT champion teachers. The qualitative data from the head teachers was organized and coded according to themes and the Likert Scale of 1-5 was used to measure the respondents' level of agreement on the questionnaires. The responses from both tools was organized according to the objectives and presented qualitatively and quantitatively. Pre-testing was done in Kaloleni Sub County whereby a reliability coefficient of above 0.07 and 0.05% level of significance was achieved and it was considered reliable. The validity of the instrument was determined through consultations with specialists in the study area. The data was collected after obtaining a letter of authority from Kenya Methodist University (KeMU), National Commission for Science, Technology and Innovation (NACOSTI), Kilifi County Commissioner Office, Kilifi County Education Office and Rabai Sub-county Education Office. The data collected was analyzed using Descriptive Statistics Package for Social Scientist (SPSS) program and final results displayed using percentages, and graphs. The study found out that the head teachers had adequate communication skill with mean of 2.53716 and std 1.200452. Coordination skills, was deficient with (moderate mean of 3.30288 and the std of 1.051966). The quality supervision skill of the head teachers 'was deficient, mean moderate of 3.5085 and the std 1.144732, and the motivation skills of the head teacher was deficient, mean moderate 3.93142 and the std 1.983578. From the analysis, the researcher concluded that coordination skills, quality supervisions kills and motivation skills of head teachers were lacking. This negatively affected implementation of ICT since there was a strong correlations between effective leadership in terms of communication, coordination, quality supervision and motivation, and implementation of ICT policy in the public primary schools. Capacity building on these core leadership skills to empower head teachers is recommended. The researcher recommended that further research should be done on quality supervision and coordination as these were very critical to the successful implementation of any ICT strategy in schools.

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ABBREVIATIONS AND ACCRONYMNS

CCTV   Closed Circuit Television

CEMASTEA   Centre for Mathematics Science and Technology

DSWR   Digital School Wireless Routers

GOK   Government of Kenya

ICT   information and Communication Technology

KeMU   Kenya Methodist University

KNEC   Kenya National Examination Council

KICD   Kenya Institute of Curriculum Development

MICT   Ministry of Information Technology

MoEST   Ministry of Education Science and Technology

NACOSTI   National Commission for Science, Technology and Innovation

NEMIS   National Education management information System

TDD   Teacher Digital Device

TMIS   Teacher Management Information System

TSC   Teacher Service Commission

UK   United Kingdom

UNCSI   Uganda National Council of Science and Technology

UNESCO   United   Nations   Educational,   Scientific   and   Cultural   Organizati

CHAPTER ONE

INTRODUCTION

1.1 Back ground to the study.

Implementation is the process of starting to use something, putting a plan into effect or executing a decision into action once a decision has been made. It involves making something active or effective. Implementation involves a plan of a set of activities that have been designed towards adopting an innovation. The plan is put into effect immediately the decision for adoption has been made and it ends when the use of innovation becomes routine practice (Signe', 2017; Farrell & Isaacs, 2015). According to Buabeng-Andoh (2012) implementation also refers to all the processes and decisions people make whenever they contemplate adopting an innovation. This process begins from the time when they hear about that innovation to finally adopting it and routinely making use of it. Information and communication technology (ICT) is an innovation, a new way of capturing, displaying and retrieving information through telecommunication digital devices such as projectors, smart phones, computers, videos, audiovisual among others (United Nations Educational Scientific and Cultural Organization [UNESCO] 2021). Implementation of ICT in schools, therefore, refers to the extent to which teachers and other school stakeholders adhere to using ICT to carry out various school activities. These school activities include, but not limited to registering candidates for national and managing based examinations, managing school data base, school security by using closed circuit television (CCTV). Other activities that can be done using ICT include remote learning methodologies, flipped classrooms where learners watch lectures on-line, managing school resources, and preparation of professional

records. Using white boards and projectors, e-readers, accessing relevant digital teaching and learning materials as well as integrating digital learning sessions is part of ICT implementation (UNESCO, 2021). Implementing these activities in a school requires sound school leadership (Laaria, 2013).

Implementation of ICT has many benefits which include but not limited to making school management easier and learning more interesting and realistic. Accessing of e-learning resources as well as enabling learners to acquire the 21st century digital skills is another additional benefit. Despite the accrued benefits, government policy in place and heavy investments, implementation of ICT in schools has not been fully embraced (Van Laar et al., 2020). In many countries, educational institutions were closed down during out-break of covid-19 virus so as to avoid the spread of the deadly virus and this led to learning being halted. This challenge resulted to academic calendars being disrupted since teachers are still using the traditional methods of curriculum delivery as well as making professional records using pen and paper instead of digital devices (Cordiero, 2020; Sangra & Gonzales, 2016).

Leadership is defined as the process of impacting, influencing or affecting the activities of an organization either positively or negatively towards the achievement of organizational goal (Yukl, 2010). Leadership is also defined by Ganta and Manukonda (2014) as that power which influences a change of values, beliefs, behaviors and attitudes in other people. Therefore, the influence of the head teachers' leadership on implementation of ICT refers to the extent in which the head teacher influences the running of the school activities by changing the attitudes, beliefs and behaviors of the teachers either positively or negatively towards ICT implementation. The influence is generated through communicating the school ICT policy, coordinating the laid down ICT strategies and infrastructure, supervising various activities such as teaching using projectors,

remote learning and endorsing teachers digital made professional records as well as recognizing and motivating teachers who actively implement ICT (Mbera, 2015). According to Teachers Service commission (TSC, 2015), implementation of ICT innovations, virtual learning and other educational policies in schools are directly linked to the leadership of a head teacher. The head teacher is mandated to spear-head implementation of government policies at school level by communicating, planning, organizing, resource mobilizing, supervising, monitoring as well as coordinating all school activities (TSC, 2015). Effectiveness of implementing government policies in the schools, calls for sound leadership of the head teacher (Laaria, 2013). Despite the mandate the head teachers have been given on implementation of ICT in education at school level, many schools all over the world are still struggling and lagging behind with the reality of realizing digitalization of the education sector (Dei, 2018; Ministry of Information Technology [MITC], 2016; Farrell & Isaacs, 2015).

Implementation of ICT policies has been met with many challenges as exposed by the advent of the covid-19 virus which prohibited face to face curriculum delivery in order to observe ministry of health protocol to inhibit the spread of the virus. The presidential directive to close down school was done in order to prevent the spreading of the virus. Schools which had digital mechanism in place were able to continue with curriculum delivery. But many schools had challenges leading to many learners not accessing education because of the closure of schools (Cordiero, 2020).

 A Research which was done in Ireland as well as in Canada by Austin and Hunter (2013) and Kozma (2005) explain that many countries have developed policies and increased the investment on ICT in education. Great investments were done to improve the standards of education and equip youth with skills on world economy based on digital knowledge. Despite the huge

investments on infrastructure and capacity building, the study pointed out that successful implementation of ICT was illusive. The factors of infrastructure and developing teachers' skills could not translate to effective usage of ICT in the school without the school leadership. In Arabia, a study by Mofarreh (2016) concluded that strong school leadership in terms of coordination, management, supervision and assessing the actual usage of ICT had an important role to play on ICT implementation. Therefore, for the ICT policies that the governments develop to be implemented, the head teachers play very vital roles in creating awareness and influence to the school community. This influence is through effective communication, coordination of resources, supervision and motivation of teachers to influence them to carry out their daily school activities using ICT (Abdul K. Mpaata & Zaid Mpaata, 2018).

In the United Kingdom (UK), a study by Tearle P.(2004) asserts that educational stakeholders developed national guidelines that were aimed at increasing the use of ICT as a tool for enhancing equity in providing educational opportunities for all learners, access, inclusivity and equipping staff in all learning institutions. But Waller (2011) asserts that despite this great UK policy on education, incorporation of ICT in classrooms has been difficult for education system in some regions in the UK. Research conducted by Laaria (2013) and Tearle (2010) reported that other factors such as a whole schools' characteristics, individual attitudes, availability and accessible resources, supporting and training were some of the processes which increase implementation of ICT in the school. Under whole school's characteristics, the researchers cited lack of motivation which was caused by head teachers' ineffective communication and sensitization of the ICT goal and expected learning benefits to the teachers (Tearle, 2004). In New Zealand a study by Cardino (2013) further asserts that the head teachers have to perform diverse roles such as handling lessons, attending frequent meetings and attending to parents and

other administrative duties causing them to have a wide workload hindering them from performing effective supervision.

African countries are also striving to implement ICT in education. They have come up with policies to integrate ICT in their education system to empower the young generation with 21st century skills for the global economy (Farrell & Isaacs, 2015). However, studies in Nigeria and in Ghana by Damkor et al (2015) concluded that implementation of ICT was still lagging behind due to inadequate clinical supervision by head teachers which is a leadership responsibility. Likewise, head teachers had failed to motivate teachers to implement ICT strategies by not involving them in decision-making when formulating these strategies, hence failing to create ownership of the said strategies. According to Hohener (2017) lack of motivation can cause resistance to change. In a school set up, lack of motivation can make the teachers resist change and thus not embrace or be unwilling to implementation ICT. Furthermore, the multiple roles such as meetings and other administrative duties played by the school head teachers made it difficult for them to carry out effective coordination and supervision for effective ICT implementation in the schools. This has led to dismal performance in ICT implementation (Jonyo & Jonyo, 2019). A further study by Shonubi and Akintaro (2016) asserts that effective communication guaranteed success of organizational goals. In this case a school is an organization with a vision, goals and strategies (Okumbe, 2016). The head teacher should make clear the following: school ICT policy, goals, the ICT vision, ICT resources available, various professional records that should be prepared using digital devices and the time frame for records preparation. The head teacher should also create time to listen to the teachers' challenges during staff meetings. This aspect of effective leadership was lacking leading to failure for ICT strategies being formulated and fully implemented.

In East African countries ICT policies have steadily been put in place. In Uganda, the process of developing the National ICT policy was initiated in 1998 by The Uganda National council of Science and technology (UNCSI). Tanzania initiated its ICT Education policy in 2007 for basic education, while Rwanda initiated its ICT Education policy in 2000 (Farrell & Isaacs, 2015). Studies have shown that despite candid policies and heavy investments in education, their implementation has met with challenges. For example in Uganda, the ICT policy was geared towards empowering citizens with ICT skills for development and lifelong education (Farrell & Isaacs, 2015). Despite the ICT policy in place, a study by Markon (2013) concluded that teachers were not able to implement ICT because they were neither aware nor familiar with the ICT resources available in the institution. This was contributed by the head teachers' failure to effectively communicate the availability of resources and secondly, the teachers lacked the prerequisite skills of how to use the digital devices. Failure by the leadership to coordinate trainings created barriers to ICT implementation.

In Kenya, the ICT sector has been growing steadily from mid-1990 amid challenges (MICT-2016). By 2015 the Kenyan government had totally upheld ICT role to spear-head socio-economic growth. The government has put up agencies such as Huduma Centres all over Kenya. These centres were geared towards mainstreaming e-government as a tool for governance and give service to the nation's citizens (Mureithi, 2017). The Kenyan government in 2016 put in place National ICT policy and ICT master plan. It also invested over 40 billion for digital learning program targeting all learners in all public primary schools. This decision was borne out of vision 2030 and the context that technology defines our world. Technology also prepares the young people for today's realities in job market worldwide (Barasa, 2021; MICT, 2016; Ministry of Education Science and Technology [MOEST], 2016). The government also

increased financial support for capacity development and strengthened Kenya Education Management Institute (KEMI). On the other hand Centre for Mathematics, Science and Technology Education in Africa (CEMASTEA) has been offering various training to leaders at various levels. For instance, 200 ICT champions for each constituency have been trained and in turn 20,000 teachers also trained on ICT implementation in education through a cascade model. On top of this, the government has provided laptops and projectors, WIFI gadgets, rural electrification and improved internet connectivity in Schools. In addition to this, CEMASTEA has trained 1500 district master trainers while KICD through ELIMIKA platform has oriented over 200 teachers on new curricular changes. Further efforts have been put up by KICD through radio program. Kenya institute of curriculum development has digitalized learning content of various subjects and deployed various ICT infrastructures to schools among other initiatives, (Information and communication technology authority,[ICTA], 2021); MOEST, 2016). Despite the effort of the government to ensure ICT policy is implemented in public primary schools, a survey by MICT (2019) and Tonui et al (2016) report that there has been minimal implemention of ICT in public primary schools. Teachers still use text books, chalk and chalk boards, prepare professional records manually and make use of cyber cafés to upload data. In some schools, the devices that were distributed by the government are still in the boxes and have not been used. In other schools some of these gadgets are reported by local news to have been stolen (Standard, 2019; Muyela, 2018). This creates a discord between the infrastructure and resources available in the schools and the actual usage of the devices which call for investigation of the leadership influence. According to Laaria (2013) strong leadership forms the basis for effective implementation of any strategies in a school.

The situation in Rabai Sub-county, in Kilifi County is worse. The information from Rabai Sub-county office on Performance Contract and Teachers Performance and Appraisal (TPAD) report 2020 (Rabai, 2020) indicates that the 44 public primary schools have received a total of 2987 learners' digital devices (LDD) and 131 teacher digital devices (TDD). The sub county received 40 digital school wireless routers (DSWR) and 40 projectors. A majority of 35 schools out of 44 schools (making 79.54% of the schools) have electricity connectivity. There are 245 out of 515 teachers (making 51.57%) teachers who are ICT compliant. Despite the availability of this infrastructure and man-power, the monitoring report reveals that on ICT implementation in Rabai Sub County is very minimal. The report has revealed that teachers hardly use computers to make schemes, progress records, teaching notes or professional record. Teachers hardly project lessons while teaching instead, they use chalk and talk and text books (Rabai, 2020). Access to relevant video teaching materials is hardly done. Installation and monitoring school security using Closed Circuit Television (CCTV) is not there in the schools. Head teachers are still using hard covered books to maintain admission records. Timetabling is made manually. The devices such as laptops and projectors are gathering dust in the stores in other schools they have been stolen. Furthermore, the head teachers make use of cyber café to upload TPAD and NEMIS as well as KNEC registration. Using cyber for uploading data is very risky as it exposes the schools' passwords to unauthorized persons. The schools do not have school level ICT policy in place which implies that there are no concrete strategies which are guiding these schools towards implementation of ICT. The school leadership has not purposely put measures in place to implement ICT. Literature reveals that implementation of ICT in school or any other strategy will be successful if the head of educational institution actively influences it through effective communication, motivating the staff by acknowledging their effort, coordinating professional development, supporting the staff members by addressing any challenges, and supervising the

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process of change (Simi et al., 2013; Laaria, 2013). Against the foregone background, this study aims to investigate the influence of the head teachers' leadership on implementation of ICT in public primary schools in Rabai sub-county, in Kenya.

1.2 Statement of the problem

The Kenyan government has developed and put in place ICT policy and ICT framework of operation that is spearheading the implementation of ICT in public primary schools. The main agenda is to provide a level ground for all learners from all walks of life to acquire digital literacy. The government has invested over 40 billion for ICT infrastructure, capacity building, content developing, mobilization framework for e-education and harmonization and sensitization of ICT implementation.

Despite the government rigorous effort on ICT implementation initiatives in schools, ICT survey report by MICT (2019) and Tonui et al. (2016), report that there has been minimal implemention of ICT in schools. The situation in Rabai Sub County on ICT implementation is very dismal. A report from Rabai sub county TSC office, Rabai (2020) reveals that many schools are lagging behind in ICT implementation. Usage of digital resources from classroom to management of office activities is hardly done. Accessing information online and digital lesson delivery is not done. Professional records such as timetables, lesson plans and progress records are done manually. Administrative work such as filling data in Teacher Management Information System (TMIS), registration of children for Kenya National Examination Council (KNEC) exams, National Education management Information System (NEMIS) and even uploading of TPAD is still being done at the cyber cafés (Rabai, 2020). According to Laaria (2013), head teachers are catalysts of change. This is echoed by Mofarreh (2016) who concluded that leadership influence regarding coordination, management and supervision were

critical in ICT implementation. A. K. Mpaata and Z. Mpaata (2018) aver that communicating information on ICT policy and motivating teachers could encourage them to utilize ICT in their daily activity. Therefore, this research study sought to investigate the influence of head teachers' leadership in terms of communication, coordination, quality supervision and motivation on implementation of ICT policy in public primary schools in Rabai Sub County in Kilfi county- Kenya.

1.3 The purpose of the study

This research investigated the influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai Sub-County in Kilfi county- Kenya. To be exact, it investigated the influence of head teachers' communication skills, coordination skills, quality supervision skills and motivation on implementation of information and communication technology policy in public primary schools in Rabai Subcounty in Kilifi County- Kenya.

1.4 Research objective

The following objectives guided this research:

i.   To determine the influence of the head teachers' communication skills on the implementation of ICT policy in public primary schools in Rabai Sub county of Kilifi county.

ii. To investigate the influence of head teachers' coordination skills on the implementation of ICT policy in public primary schools in Rabai Sub-County of Kilifi County.

iii. To examine the influence of the head teachers' quality supervision skills on the implementation of ICT policy in the public primary schools in Rabai Sub county of Kilifi county.

iv.   To assess the influence of the head teachers' motivation skills on the implementation of ICT policy in public primary schools in Rabai sub county of kilifi County.

1.5 The research questions

The following were research questions for this research:

i.   How does head teachers' communication skill influence the implementation of ICT policy in public primary schools in Rabai Sub-county of Kilifi County?

ii.   How does the head teachers' coordination skill influence the implementation of ICT policy in the public primary schools in Rabai Sub-county of Kilifi County?

iii.   In what ways does the head teacher's quality supervision skill influence the implementation of ICT policy in public primary schools in Rabai Sub-county ofKilifi County?

iv.   In what ways does the head teachers' motivation skill influence ICT implementation in public primary schools in Rabai Sub-county of Kilifi County?

1.6 Significance of Study.

The Policy Makers in Rabai Sub-County would find the data provided in this study useful as it would enable them to plan for programs to enforce the ICT policy implementation in the schools. The finding would enable the sub-county teacher management office organize for induction courses for empowering the head teachers on effective ICT implementation in the public primary schools The study would also benefit the Ministry of Education as it would provide sufficient information to assist in decision-making regarding ways ICT education needs to be planned and implemented in public primary schools. The findings of the study would enable the Teachers Service Commission (TSC) to prioritize ICT literacy during recruitment of teachers. The

findings of the study will also inform the human resource management director in TSC on making ICT literacy a key factor on promotion of administrators of schools.

1.7 Limitation and Delimitation

Limitations of the Study

The study limited itself only to the head of institutions and ICT champion teachers in public primary schools which are found in Rabai Sub-county. This was due to large number of teachers in the sub county and might not be a fair representation for the sub county. Some ICT teachers took too long to fill in the questionnaires which delayed the data collection and data analysis. The study limited itself to only four variables: communication, coordination, quality supervision, and motivation, leaving other aspects of leadership influence.

Delimitation of the Study

This research confined itself to a descriptive survey research design to investigate the influence of head teachers' leadership on implementation of ICT in public primary schools in Rabai Sub-County since data was collected on existing conditions. It restricted itself to public primary schools because these schools had similar demographic structures and the government had provided ICT resources and infrastructure. The study involved the head teachers and ICT Champion teachers of public primary schools since they were directly linked to ICT implementation at the school level. Finally, the research confined itself to the public primary schools because the schools set-up was the same, based on the guidelines laid down by the policies from the Ministry of Education.

1.8 Assumptions of the Study

This study was guided by the following assumptions**:**

i. All the respondents were honest in giving accurate data upon which the study findings and recommendations were anchored.

ii. All the respondents were knowledgeable on issues of ICT policy implementation in schools.

iii. Data collected from the sampled population represented the information of the entire population in Rabai Sub-County

1.9 Definition of the terminology.

Communication: This refers to effectively creating awareness to the teachers about the ICT policy, goals, vision, the strategies as well as resources available through staff meetings and internal memos and in return, the teachers share their challenges about ICT implementation.

Coordination: This refers to planning of ICT activities, staff training programs, and providing resources on time, timetabling as well as and evaluating ICT implementation strategies

Head teacher: A teacher (man or woman) who is in charge of a school. This person is in charge of implementing government policies in terms planning, organizing, supervising, monitoring, resource mobilization and coordinating all the school activities

ICT Champion teacher: A teacher in the institution who is in charge of ICT activities and programs.

ICT policy: This refers to an official document or a program put in place which has a vision, goal, mission, strategies, actors and expected outcome to guide the school organization to attain ICT implementation in the school.

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Information and communication technology: These are hardware and soft ware that are used for retrieving, transmitting, storing, creating and sharing information. Examples are the computers, laptops, the learners' digital devices, teachers' digital devices that can be used to enhance learning experiences as well as store information.

Implementation of ICT: The refers to the organizational process of introducing ICT initiatives for adoption by teachers and learners in the school which includes teachers using digitally prepared professionally record, recording data digitally, ICT integrated lessons, CCTV security monitoring, filling NEMIS , TMIS and TPAD at the school.

Motivation: The activities that the head teachers put in place to stimulate the teachers' desire to continuously be interested and committed to using ICT. This could be in form of giving rewards, incentives, promotion, praise, creating a positive working environment, the availability of ICT infrastructure, and recognition of teachers' efforts

Public School: Institution of learning managed by the community and supported or aided by the government.

Supervision: This refers to regular and organized checking and endorsing of teacher professional records, observing teachers teaching using ICT, checking for NEMIS and TMIS data, evidence of ICT material being used and identifying training needs

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Chapter two highlighted theoretical literature and empirical literature which other researchers had written on implementation of ICT in Kenya and other parts of the world. The first section dealt with theoretical review. Under theoretical review, the Diffusion of innovation theories by Everett Rodgers and Herzberg's motivation-Hygiene theory by Fredrick Herzberg were discussed in relation to the study. The second section discussed the empirical literature review. Four research variables: communication, coordination, supervision and motivation were discussed in line with the research objectives.

2.1 Theoretical Framework

Diffusion of Innovations Theory

This theory of Diffusion of Innovation was developed in 1962 by Everett Rodgers (2005). The diffusion of innovation theory tries to establish the process in which a new idea spreads. It tries to analyze the means, the reasons and the speed at which a novel idea, innovation or technology spreads. Rodgers (2005) further argues that for diffusion of innovation to occur, the innovation has to be communicated over time among people within a given social system or organization. The application of the new idea, use of a product or innovation or change of behavior of the people in a given social system is considered as the end result of diffusion. Adoption is said to have taken place when a person does something differently than they previously did, for example, using technology as opposed to manual. The most important consideration to note in

adoption process is that the idea, innovation or behavior must be perceived as new or innovative by a person. Diffusion occurs through this way. The theorist likewise proposes four factors namely: innovation itself, communication channels used to share information, time and the society to whom the innovation has been introduced. The process relies on human capital.

The innovation factor could be an idea, new knowledge, practice or invention that is considered as new by a person and can be categorized as an innovation to be studied (Rodgers 2005). The communication modes are patterns that are purposefully designed to allow for transfer of information from one unit of an organization to another. Communication is the means in which individuals share information with one another about the innovation or idea in order to sensitize one another and diffusion takes place among people or an organization in this way. So communication channels within an organization must purposefully be put in place to create awareness about the new idea or invention for the diffusion of innovation to occur.

Another factor is time. Time is essential factor for people to adopt an innovation. The time factor is necessary because innovations are not instantly adopted by everyone. The process covers time before the use of the new innovation becomes natural practice.

The fourth factor or element is the society. According to LaMorte (2019), the social system could be internal or external influence in form of rules, guidelines, work culture or policies which an organization has to follow. The society plays many roles and their combination represents the total influence of potential adopters. It determines the people to whom the diffusion process will occur. This gives the boundary. The society is affected by norms, and the degree to which individuals can influence one another and organizational working environment (Rodgers, 2005).

In a social system, the adoption of a new idea, behavior or innovation does not happen to all people at same rate. The rate of adoption states that adoption of the innovation within a society will start and progress slowly from the beginning then grow rapidly for some time, then slow down again and become stable and finally decline (Botha & Atkins, 2005). It is a process where some people will adopt the innovation or ideas much faster compared to other people. People in a society have different characteristics and it affects the rate at which they adopt an innovation. Understanding the characteristics that hinder adoption of an innovation in the target population will greatly help when promoting adoption of an innovation (LaMorte, 2019).

In this regards, the theorist proposes that there are five categories of adopters. The majority category of the adopters tends to be at the middle of the curve. Understanding the various traits of the target population will help in developing strategies that will appeal to the different categories. According to LaMorte (2019) and (Yates 2001) there are five categories within the target population which are the innovators, early adopters, early majority, late Majority and the laggards. The first category is the Innovators which form 2.5% of the target group. This category refers to a group of people who lead in trying innovation. They are adventurous and are excited in trying out new ideas. This category of people is often the first cohort to try the new ideas because they are risk takers. This category of people does not need a lot of persuasion for them to try the new idea or innovation. This group is followed by the next category which is the early adopters. They form 13.5% of the adopters. This category is formed by opinion leaders. This category of people appreciate being leaders and easily accept ideas that bring changes. They have an insight about the need for change in the society and feel comfortable in adopting the new idea which will be a catalyst for the change. Various modalities that captivate this category of people towards the new idea comprise of the information on applicability of the ideas or how to use the innovation. They are ready to change and therefore this category of people does not need

more convincing. They are evidence based and that they have to see that the innovation works before they become willing to adopt it.

The third group is the early majority category. They also form 34% of the target group. This category adopts new idea faster than the average person although they are rarely in leadership position. This category is attracted by the strategy that shows evidence of effectiveness of the innovation and success story.

The fourth category is the late majority which forms 34% of the adopters. This category will adopt the change brought about by the innovation after majority of the population has adopted and tried it because they are very skeptical of any change. Providing information and data on how many people have successfully adopted and tried the innovation, will greatly appeal to this population. The fifth category is the laggards which forms 16% of the targeted group. The Laggards refers to a group of people who are traditionally minded and slow to change. These people are hesitant to accept new ideas and are difficult to change and bring to the team. Strategies that appeal to this category include statistics, being coerced, and fear of being redundant and consequences or receiving pressure from people who have already adopted the innovation (LaMorte, 2019).

This study applied the attributes that affect both individual adoption and organization diffusion of an innovation as identified by (Rodgers, 2005). The tenets in the theory provided an anchor which helped in getting deeper understanding why some teachers easily adopt ICT in carrying out their administrative and professional tasks while other teachers still use the traditional way of doing things. This study used this theory in explaining, predicting and accounting for factors that hasten up or restrict the use of ICT in administration of primary schools. The theory helped the researcher to identify qualities that will make the use of ICT in the administration of schools more appealing to potential users.

In relation to this study the diffusion of innovation theory helped to identify some variables which impacted the implementation of ICT in public primary school. It helped to explain why some teachers are enthusiastic about the new technology and adopt easily and early while some teachers are rigid in adopting technology. The theory also helped in identifying the strategies the head teachers have to adopt for the different categories of teachers in the institution in order to ensure that the use of technology becomes normal practice.

In this study, the communication channel category, the society and adopter categories from the theory was applied to explain how the various tenets are applied. Diffusion of innovation takes place among the teacher and therefore, communication channels which have been put in place within the school to facilitate flow of information from one department to another (Honsberger, 2016).

In a school set up, the head teacher should create clear communication patterns which are well established among teachers for implementation of ICT to occur. The head teacher has to establish communication channels within the school organizations to facilitate diffusion of ICT. The head teacher should sensitize the whole school society about the ICT policy through effective communication and sensitization. Adequate information should be given to the whole school society about the new technology. The head teacher should outline the benefits of embracing ICT policy in order to make the teachers be willing to adopt it. After sensitization, the teachers who are in innovators and early adopters' category will be enthusiastic and try the use of the technology. The head teacher would have to communicate to all the teachers the various strategies that have been set to ensure ICT is implemented at the school. The benefits of using the new technology should be shared through open communication, during staff meeting for the whole school society to make even the conservative and teachers who like using traditional methods in teaching (the laggards) to desire using the new technology. This will encourage the

late majority, that is, the teachers who wait until they see others benefitting from using ICT to get encouraged. Through communication, the school society will be made aware of the ICT resources available, such as computers, internet and relevant software. The head teachers will also give leadership roles to the teachers who are early adopters to be in charge of the ICT resources by delegation. The head teacher should communicate to all members of staff the availability of resources in good time and also be assisted by the ICT teachers in charge. The availability of resources will help to create conducive working environment and interest to the individual teachers since they shall have an opportunity to use computers for preparation of their records. There should be timelines when the teachers should produce professional record made specifically made using ICT devices such as schemes of work and the same should be communicate the same as to when the teachers should make those documents. By setting deadlines and being specific on preparing document using computers, the laggards will feel compelled to embrace technology. These deadlines should be communicated to the whole school society on-time so as to encourage the teachers to hasten in using the new technology without procrastinating. The head teacher should from time to time remind the teachers on the strategies to be used since diffusion of strategies cannot be acquired at a snap of the fingers but it happens over time. In case of challenges, the head teacher should give teachers time during staff meetings to share their challenges in a free and open communication mode. The challenges discussed will be considered as gaps which will be addressed to enable the teachers be competent in using ICT in their every day school life.

 The school is a society. Every society has its norms and culture. As a school society, it has rules and policies which should be followed. The school leadership should set the expected behavior of the teachers as far as using digital devices is concerned. The school policy will form the benchmark in which the teachers will behave as far as ICT is concerned. In this way, the head

teacher will influence how the school society operates as far as using ICT is concerned by reminding the teachers through effective communication. And over time, the teachers and the whole school at large will adopt using ICT in doing their day to day activities such as accessing digital content, meeting deadlines on developing professional records and other educational resources. So, communication skills of the head teacher can influence the implementation of ICT in school by changing the attitudes of teachers towards the use of technology. Therefore, the theory of diffusion of innovation was used to explain the influence of head teachers' communication skills on the implementation of ICT policy in public primary schools.

The adopters' category will be represented by the various characteristics of the teachers. In a school society there are head teachers will have teachers of varied characteristics. In order to implement the ICT policy, the head teacher will have to employ different strategies that will appeal to the varied characteristics. For the teachers who fall under Innovators category, the head teacher will communicate the information to them and these teachers will be willing to try the new technology. They will be willing to risk using the computers available in the school without fear. They shall be like the pacesetters of ICT implementation in the school.

For teachers who fall under early adopters' category, the head teacher will give them responsibility and will propel others to change their opinion towards the innovation. They are enthusiastic when given responsibilities and they easily accept change opportunities. They will help to advocate for change since they are already aware of the need for change and can readily encourage others to embrace change. These teachers will able to help the head teacher in adoption of new ideas and bringing change in the school as far as ICT is concerned. These teachers should be given an opportunity to go for training to be empowered so as to empower others.

Teachers falling under the Early and Late majority category, the head teacher will have to provide evidence of the benefits of using computers, internet, and power-point presentation in implementing ICT in teaching. By exposing these teachers to success stories on effectiveness of using technology through effective communication, these teachers will be convinced to adopt it.

Teachers falling under the Laggards category are rigid, traditionally bound and abhor change. They will only embrace it only when it is absolutely necessary. Most of them are analogous and have technophobia. They are the teachers who have served as teachers for a very long time and are set in their ways. They are hesitant to embrace new ideas and very difficult to bring them to the team of using new innovation. They would prefer to use cyber café's for uploading TPAD, KNEC assessment and updating school data. The head teacher will have to use authoritarian style of leadership by forcing them to use technology in preparation of professional records and accessing materials for teaching and learning from the internet.

Herzberg's Motivation-Hygiene Theory

The Herzberg's theory of motivation was proposed by Fredrick Herzberg, a behavioral scientist in 1959 and it is a two-factor theory or Motivator-Hygiene Theory (Yukl, 2010). The theorist argues that there are some factors that seem to lead to job satisfaction, while others in most cases lead to job dissatisfaction. The factors that lead to job satisfaction according to Herzberg et al. (2011) are called motivators. While those giving rise to job dissatisfaction in a working environment are hygiene factors. Hence, Herzberg et al. (2011) classified these factors into motivational factors category and hygiene factors category. The motivational factors propel employee to superior performance because they initiate a positive satisfaction in them. They provide psychological needs that are perceived as benefits. The most important motivators or

satisfiers as identified by Herzberg et al. (2011) are achievement, recognition, work itself, responsibility and advancement. The motivational factors are directly related to the work itself including the difficulties, interest and the way the worker will respond to the challenges generated by the work itself. For example in a school set up, a teacher may use ICT to produce neat and presentable work which is a motivation in itself.

Herzberg et al. (2011) also categorizes the hygiene factors as factors that are important in creating and sustaining motivation at work place. They are related to the environment of work, which is where the work is being done rather than the work itself. When the workers perceive that these factors meet their requirements, they make the work life easier and comfortable but when these factors are not within the expectations of the employees, they provide grounds for dissatisfaction in the work place. These do not enhance positive satisfaction among employee but when they are not there, they create dissatisfaction among workers. They symbolize physiological needs which individual or employees wanted or expected. The hygiene factors (de-motivators) are: the policies of the company and administration; supervision; rate of pay (salary and wages); interpersonal relationships (with supervisor, peers, subordinates); factors affecting personal life; status; positive work culture, job security and working conditions (Yukl, 2010). All these factors provide some influence in the work environment. For example, within a school institution, school policies, administration and supervision may affect how a teacher will be influenced in using technology

Herzberg's theory can be applied in a company where the administrators must ensure that hygiene factors are considered to avoid employees' dissatisfaction (Yukl, 2010). To motivate the employees, the work must be stimulating and rewarding for them to perform to their best. The theory emphasizes making the job more engaging to employees to enable them to use their skills

and competencies maximally. Motivating environment should be created by the administrators to improve the quality of work (Yukl, 2010).

This theory was used to explain how company policy and administration, quality supervision, responsibility and recognition can be used by the head teacher in implementation of ICT policy in the schools (Yukl, 2010). This theory was applicable in this research on influence of head teacher's leadership on implementation on ICT in public school because the school as organization represents the company, and it has rules, policy and guideline (Okumbe, 2016). The rules are the school ICT policies and ICT strategies which each school stakeholder should follow. These ICT guidelines should be followed under the administration of the head teacher. Under company policy and administration, the researcher explained how coordination and supervision could be applied at school environment to influence implementation of ICT. Responsibility and recognition was used to explain how the head teacher could motivate the staff members to influence them to implement ICT policy (Atalic et al., 2016).

In detail, application of company policy and administration category in a school is represented by the school policies that provide guidelines which give directions for implementation of ICT policy. According to Harry K.Wong and Rosemary T. Wong (2009), policies are important as they assist in reinforcing and clarifying standards expected of teachers and supports the head teacher in administration of staff more effectively. Policies define the school culture by making clear what is acceptable and unacceptable in the school environment. School rules and guidelines provide ground for stability and ensure consistency in decision-making and operational procedures. The policy category also referred to the national and school ICT policies. The ICT policy will guide the head teachers to plan, coordinate the school activities without neglecting interpersonal relationships with the staff (Mwangi, 2015).

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Administration category within the school touches on the head teacher ability in effective coordination and supervision which are elements of leadership. Coordination and supervision ensures clarity of procedures within the school, putting in place resources and ensuring that activities run smoothly without over-lapping. In the coordination category, the head teacher will be expected to make sure that there is an effective timetable of ICT integrated lessons in the school which is well coordinated and followed by the teachers and ICT resources are provided on time. Through effective coordination the head teachers is expected to ensure that there is an effective ICT program in place and staff training needs is done regularly and acted upon effectively.

Quality supervision category involves ensuring that right people are stimulated timely to perform activities with the correct information in order to achieve expected results. Also supervision entails overseeing something, somebody, directing activities or managing. For quality supervision in the school to be felt, the leaders will have to stimulate the teachers to carry out activities using technology in their day to day activities (Balemans (2013). To accomplish this feat, the head teacher being the lead supervisor, should have effective interactive communication skill, ability to delegate and maintaining a positive attitude as well as interpersonal skills. Supervision also involves providing knowledge, organizing tasks, enhancing motivation and monitoring activity and result of activities (Compass point, 2015). In this respect the school leadership should put in place targets for performance, strategies to achieve performance and when to meet the targets in compliance with plans and vision of the school. The head teacher should organize the subject allocation for the teachers and ensures that the staff understands their roles. The head teacher also monitors staff productivity and providing constructive feedback and needs for coaching or staff development. In this case, the head teacher should be in a position to

provide quality supervision by overseeing what the teachers are doing, communicate the right information about ICT at the right time as well as delegate duties and monitor effectively to ensure teachers are using ICT in their day-to-day activities (Lezotte & Snyder, 2016). So, since quality supervision falls under administration category, the head teacher will be expected to carry out regular observation of ICT integrated lessons. The head teacher should stress on and endorse professional records which are made using digital devises.

Monitoring and evaluation is done in education sector to monitor programs (Ndungu et al., 2015). Monitoring should be done without being bossy to maintain interpersonal relationship as well as motivate the teachers to embrace using ICT. Through monitoring, any ICT training needs can be identified to empower the teachers in ICT efficacy.

Motivation skills of the head teacher will be explained in the responsibility and recognition categories. Responsibility category refers to the ability by a person to take ownership of the activities that he has done (Yukl, 2010) In this case the head teachers can motivate teachers and other education stake holders to use ICT by giving them opportunity to be in charge towards using information and communication technology gadgets in the school. The head teacher will influence the teachers to use ICT when they are allowed to assume responsibilities over the outcome of using ICT. The teachers will feel they are in control of their effort which provides motivation to them. Teachers who have mastery of a given skill will be enthusiastic in using it and have a sense of achievement. Therefore, by giving the teachers' freedom to use their skills and be in charge of ICT resources for teaching and learning, recording and retrieving data will make the teachers pro-active towards using ICT. They will desire to control the expected outcome of the technologies in the institutions which will enhance the use of ICT.

Recognition category refers to a response elicited when the employee's good work is appreciated. It is a confirmation that the value of their work is appreciated by others (Andrews, 2011). Appreciating the employees and valuing their work, will make them have a sense of satisfaction and their productivity will rise. This will make them to be motivated leading them to maintain or improve their good work (Andriotis, 2018; Yukl, 2010). In the same way, if the head teacher appreciates the teachers who use ICT, more teachers will be influenced to use technology. Teachers recognition is the The timely, informal or formal appreciation of teachers work that support the school goals and values, and which has clearly been beyond normal expectation (Andriotis, 2018). Praise and recognition are essential for acknowledging out-standing work at work place in this case a school.

Within a school organization, the head teacher can motivate teachers to implement ICT in the school through recognition of teachers work. There are some teachers who always desire to have their work acknowledged. These teachers will need to be recognized whenever they used ICT to do their work. So, the head teacher should recognize those teachers who use ICT in preparing professional records or integrated ICT in teaching by praising them during staff meeting. The head teacher should have a rewarding system to recognize them during staff meetings. This form of recognition will encourage them to use ICT in their school activities. Whenever the teachers prepare their records using ICT or retrieve information or uploaded KNEC assessment for computer bases assessment, the head teacher should offer praise, support in form of air-time, data bundles or training opportunity for them to equip them further. By recognizing their contribution towards implementing ICT in the school, the teachers will be motivated (Andrews, 2011).

2.2 Empirical Review

The influence of communication on implementation of ICT policy

Communication is the process that entails verbal and non-verbal transmission of information where sender sends information through communication channels (Ayusa, 2016). For example in a school situation, the head teacher will sensitize the teacher on the school ICT policy during the staff meetings. The teachers will also contribute on the strategies to be used when carrying out various school activities. She further found out that face to face communication and written communication were most preferred. This mode of communication allowed for interaction which it improves strategy implementation as it allowed ambiguity to be clarified. The speaker is in a position to determine if the audience received the message and understood the intended message. Likewise, dead-line for implantation of strategies can be stressed, which in a school a set up, the teachers will have a clear picture of what is expected of them. This way implementation of ICT can be enhanced.

In another study by Olang (2015) on Role of communication in strategy implementation, a case study of African women in agriculture, posited that communication was a vital component in achieving organizational goals. The study argues that internal communication that is active and functioning is aimed at purposely engaging audience and key holders further the mission of the organization. The study asserts that effective internal communication processes made staff to be highly aware of strategies and policies leading them to have full understanding of the organization. The study recommended strengthening of internal communication, ensuring that all staff members are aware of the objectives of the strategy; and how their key roles contributes towards realization of the mission and goals of the organization. The study further recommends

that information to be disseminated to the audience as a means to update and review the program and identify problematic areas that could affect the sustainability of the strategy.

In Nigeria, a study by Ekeowa (2017) indicates that effective communication is the "life blood" of an organization. The researcher further states that, for an organization to achieve its organizational goals, efficient and effective communication should be put in place since it influences the positivity and the "bottom line" organization (Odero, 2016). This implies there is a relationship between communication and strategy implementation in a school. Through communication, the leader of the organization disseminates information on strategies, objectives, vision of the organization, and time frame for achievement of those goals and objectives as well as expectations to the staff (Ambani & Wanyoike, 2014).A school being an educational organization has both academic and environmental goals and to achieve these goals strategies need to be put in place (Okumbe, 2016). Effective communication should be put in place to implement strategies, just as communication media influences strategic implementation for business growth, so does the use of short messages, internal memos, emails, stakeholders meetings are prerequisite to ICT implementation in schools (Mutisya, 2016). The school leadership should disseminate both the government and school ICT policy through effective communication via relevant channels such as staff and parent meetings. The head teacher should also disclose to the teachers and the learners the resources available for ICT implementation in the school. This will give the teachers the motivation to make use of the available resources.

According to Ayusa (2016), there should be an open channel of communication, both vertically and horizontally, across the departments to enable the whole school fraternity to share their challenges on the use of digital devices. The author adds that internal communication (by using

memo, speeches, and staff meetings) should be active and functioning, aiming at engaging key stakeholders strategically to further the mission of an organization (Olang, 2015).

Through communication the school organization acquires several benefits. According to Businesstopia (2018) the benefits acquired through communication are as follows: building awareness, providing education to the audience, (in this case teachers and learners), generating engagement and commitment from the stakeholders, encouraging participation of teachers in the implementation process and generating enthusiasm, and prompt dissemination of team results to the stakeholders (Andrews, 2011). The head teachers has a vital role to play in creating awareness about the all school strategies, including ICT implementation by ensuring that teachers make use of computers and other digital infrastructure.

The influence of coordination on implementation of ICT policy in public schools

Coordination refers to unifying effort and actions of different individuals in performing various activities as a team. It involves fixing time when activities will be done by individuals in a blended productive team (Akran, 2011). The study further points out that coordination encourages staff to work as a team with a unit of purpose, move towards the same direction, are motivated and utilize resources well towards achievement of organizational objectives (Akran, 2011). The coordination of ICT activities are the endeavors by school leadership to ensure ICT is implemented through planning of ICT activities, training of staff, providing resources and evaluating ICT implementation strategies. It is unity of action among teachers, prudent utilization of resources so as to bring out harmony in the carrying out of different tasks and activities to achieve organizational goal of implementing ICT. According to (TSC, 2015), the

head teacher has a distinct role to play in coordination of school activities. The coordination role is very vital in implementation of school strategies including ICT.

A research carried out by Tondeur et al (2010) in USA concluded that coordinator's duties and the roles played by head of the institution in the complex process of implementing ICT in schools very vital. The study further adds that the support which schools' leadership extended to the ICT coordinators contributed to a great deal to the success of ICT implementation in school. In-born leadership traits of those playing coordination roles and the strategies employed when performing the role affects the level of ICT implementation. This shows that coordination played a very pertinent role in integration of ICT. However, there are some techniques that can be used to make coordination effective. These are direct contact, group meetings, organizational structures and effective communication. Coordination is very important for ICT implementation as lack of it can lead to hindrances to effective implementation. In Saudi Arabia, Mofarreh (2016) identified lack of leadership regarding coordination and management among other factors as a hindrance to ICT implementation in schools.

Effective coordination of school leadership can link the educational institution with other stakeholders. School leaders are encouraged to explore, coordinate and engage with other multiple stakeholders for education technology (The United States Agency for International Development [USAID], 2018). Applying the malt-agency technique in equipping education technological projects can benefit greatly from international and local organization such as donor agencies, NGO's, charitable foundations, private technological firms as well as ministry of education. This is because technological projects are expensive and have technical complexity. For example imlango project in Kenya has provided ICT gadgets to 245 schools benefiting 180,000 learners across 4 counties in Kenya. The objectives of iMlango are to improve education

outcomes in mathematics and literacy &life skills. iMlango accomplishes this by ensuring digital education services and content are available in the schools under this project (imlango, 2020). This initiative has improved ICT implementation in the selected schools.

In South Africa, a study by Isaacs (2007) noted that education institutions such as schools and colleges were expected to show significant improvement on ICT accessibility, empowerment and professional development of teachers and active usage of ICT as a result of measures which had been put in place. However, (Isaac, 2007) adds that that was not forth coming due to major challenges in terms of leadership, co-ordination of various initiatives and the lack of a comprehensive policy on ICTs in education which were stumbling blocks that needed to be addressed.

Influence of supervision on implementation of ICT policy in public primary schools.

Supervision is a leadership skill which entails overseeing something or somebody, directing activities or managing. In an educational institution, the role of supervision lies with the head of the institution (Appiah, 2008). The head teacher oversees the implementation of all school's strategies as well as curriculum delivery. School leaders, the head teachers also have responsibility of supervising implementation of ICT programs in their schools (Laaria, 2013)

A study carried out by Wikinson(2010) in Ghana and Bayar (2016) in Turkey, posit that the head teacher is the chief administrator and maintain that other than doing administrative tasks, the head teacher is in charge other important duties such as supervising students performance, all school activities, attending regular head teachers and parents meetings and above all supervise usage of learning and teaching resources which includes ICT gadgets. According to Wanjiku (2018) there are two categories of supervision whereas one involves supervising the staff and the

other is on instruction. The definition of instructional supervision is made referring to a set of activities which are carried out with the purpose of making the teaching and learning purpose better for the learner. On the other hand personnel supervision involves the supervisor carrying out a set of activities in order to sensitize, to mobilize, and to motivate staff in order to make them to perform their duties to the best of their ability in order to achieve goals and objectives in the education system (Wanjiku, 2018). Personnel supervision ensures that the staff carryout activities in the right way for a better performance which provides ground for improvement. Through supervision, the head teacher can identify training needs which when well mitigated, can improve the speed of ICT implementation in the school.

Influence of motivation on implementation of ICT in public primary schools.

Chigona et al., (2014) posit that the desire, the drive or characteristics that compels a person to perform an action in order to achieve result is referred to as motivation. When a person lacks motivation or the desire to do an activity, not much result will be realized, and if any result is got, then it shall be mediocre. On the other hand, where there is some motivation, the individual acquires great accomplishment and success (Pinder, 2014). Motivation or drive is categorized into two i.e. extrinsic motivations and intrinsic motivation. According to Chigona et al., (2014) rewards that surround the job itself (also known as hygiene factors) give rise to extrinsic motivation. Examples of hygiene factors are company policies and administration, supervision and, work environment. On the other hand, Chigona et al., (2014) further explains that intrinsic motivations are rewards that are elicited from the job itself. Examples of such rewards are recognition, responsibility, and advancement. According to Herzberg et al. (2011) intrinsic rewards are more satisfying and motivating than extrinsic motivation. The theorist posited that, the intrinsic motivational factors drive the workers to great accomplishment within the particular

jobs they are doing. These motivational factors strive towards increasing job satisfaction. Likewise, if hygiene factors are not satisfied, workers will not perform optimally within their jobs. Hygiene factors work to decrease job dissatisfaction. Motivational factors have an impact on ICT implementation.

A study byChigona et al., (2014) in South Africa has concluded that educators' motivation to use technology for curriculum delivery could be impacted by satisfaction derived from using the ICT. Individuals 'expectations, sense of responsibility and achievement experienced when using the technologies creates motivation. Thus head teachers who get satisfaction in using ICT will motivate others into using technology. For example when ICT is used for data storage, retrieval of information such as TMIS records, TPAD, as well as national examination registration is easily done and results easily accessed.

The external factors such as rewards include wages and other financial rewards; promotion and appreciation, from both supervisors and colleagues (Gasaymeh et al., 2017). Teachers that are recognized for their effort and are rewarded in terms praise or appreciation for work well-done using of ICT will be encouraged to use ICT in their preparation of records and storage of data. The teachers can be motivated to use ICT by providing the necessary technological infrastructure and administrative support in the school. The teachers need to be given responsibility for their own work. According to Yukl (2010)this will give them ownership and a sense of achievement and be empowered to have self-efficacy in using the technology through short courses and inductions. By building on their skills, activities such as uploading TPAD, registering learners for national examination as well as NEMIS will easily be done. This will be the benefit of using ICT, which will encourage them to adopt technology (Rodgers, 2005)

These findings are in tandem with the study carried out by Omwenga (2016) on Principals'' Staff Motivation and its effect on ICT integration in the teaching of Science in Teacher Training Colleges'' who states that in most work places the workers need to be encouraged and influenced in various ways so that they can work efficiently and optimize their production. The leaders of institutions should be at the forefront in motivating their workers. The researcher farther outlines the initiatives which the principals should take. These initiatives include rewards which could be extrinsic or intrinsic. According to Omwenga (2016), the extrinsic could include tangible rewards such as monitory compensations, less working hours, time off, to have a say in choosing the classes to teach, more status and power. The intrinsic rewards are subjective and focus on feelings of competence, achievements and prestige that contribute to motivated and encourage teachers. Both types of rewards are intended to maintain energized and positive behavior. In an institution, the head teacher should give motivation to the teachers by rewarding them with tangible rewards such as airtime, data bundles or choose the adequate resources they will use shall to teach using ICT. Teachers who show challenges with using ICT should be empowered through training to increase their competency in ICT. Their ability to use ICT will increase their sense of achievement which is a motivation in itself (Omwenga, 2016). It is therefore, vital that the teachers are encouraged and supported in practical and motivating ways. Motivating teachers can be enhanced by creating a conducive learning environment where teachers have easy access to computers for preparation of records and planning. Access to a computer is one of the strongest influences on the success of ICT training and subsequent classroom use and through access to computers teachers can be motivated greatly to succeed in using ICT for their own development and for their students' learning despite numerous challenges (Omwenga, 2016).

Summary:

Based on the empirical literature reviewed several factors impacting implementation of ICT in public primary schools have been investigated. The government has provided infrastructure such as laptops, internet connectivity in terms of broad bands, rural electrification, capacity building and development of digital content which ought to enhance ICT implementation in public primary schools but in vain. However, Leadership influence of coordination, communication, quality supervision and motivation, which ensures that infrastructure and various resources are well utilized in the institutions have not been investigated. This is the gap which that informed this research. Thus, the study investigated the influence of communication, coordination, quality supervision and motivation on implementation of ICT in public primary schools.

2.3: conceptual framework.

The conceptual framework presented the interrelationship among variables in the influence of head teachers' leadership on implementation of ICT in public primary schools in Rabai sub-county. The independent variables were communication, coordination, quality supervision and motivation while the dependent variable was implementation of ICT policy in public primary schools.

Figure: 2.1

Conceptual frameworks

Independent variable   **dependent variable**

Influence of head teachers' leadership   implementation of ICT policy

COMMUNICATION
-Effective ICT policy sensitization
-Setting effective ICT strategies
-Effectively setting dead-lines
- Timely informing teachers on availability
resources
-Regularly sharing on challenges

1. Teachers always Utilize of ICT resources

2. Teachers always prepare Professional records digitally

COORDINATION
-Effective timetabling of ICT integrated lessons
-Timely provision of ICT resources
-Effective Program of ICT activities
-Adequate Staff Training programmes
-Timely evaluation of ICT strategies

3. School Data always digitally maintained

4. Teachers always integrating ICT in teaching

QUALITY SUPERVISION
-Regular Lesson observation
-Regular Endorsing professional records
-Timely identification of teachers ICT training
needs
- Effective ICT supervision program in place
-Timely TPAD, KNEC, and TMIS data capture

5. Timely uploading of TPAD, TMIS, KNEC

MOTIVATION
-Effective Rewarding system
- Timely Praising teachers using ICT
-Frequently recognizing teachers effort
-Always giving Responsibility
-Always providing Conducive ICT working
environment

Source: Researcher, 2021

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter dealt with research design, target and target population, sample and sampling procedure, preparation of data instruments, data collection procedure and methods of data analysis.

3.2. Research Design

According to Kothari (2014), is the set of methods and procedures that a researcher will use to effectively address the research problem. It is a road-map for collecting, measuring and analyzing data. In this study, a descriptive survey was used. According to Olive Mugenda andAbel Mugenda (2015), a descriptive research design is a procedure that aims to accurately and systematically describe a population, situation or phenomena that exist and report the way it is at its geographical location. This was echoed by Kumar (2018) who argued that a descriptive research design enables the researcher to describe the situation or phenomenon or provide information about an issue. The design chosen helped the researcher to gather data to answer the questions that investigate influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai sub-county. This design was chosen because it involved collection of data from the population (head teachers and teachers) views so to understand the distribution, intensity, and the interrelationships between the study variables. The information was collected through interviewing schedule to the head teachers and administering a questionnaire to ICT teachers who had been sampled.

3.3 The study location:

The research was carried out in Rabai Sub County, in Kenya. Rabai Sub County is one of the six Sub Counties constituting Kilifi County, in Coast region. This is the county in Kenya where the first Missionaries of Church Missionary Society (CMS) mission was established. It is seated about 12 miles North West of Mombasa County. It covers 205.90 square kilometers with a population of 120,479, (Government of Kenya [GOK], 2019).Its coordinates are$3^0$55S, 39034E, and 3.931733^0S, 39.571518^0E. Its neighbouring counties are Mombasa County to the south, Kwale County to the west and Kaloleni Sub County to the North. It borders the Indian Ocean to the East. The Raba sub county is divided into two zones: Rabai zone and Ruruma zone. The largest community living in Rabai Sub County is Mijikenda. Other communities such as Kambas, Kikuyus, Swahili, Arabs, and Indians among others also found in this sub county, especially in the main urban area, namely: Mazeras. Rabai Sub County has 44 public primary schools and 26 private schools, but the study will focus only the 44 public schools. The economic activities in the area include Export Processing Zone (EPZ) factories, industries, subsistence farming as well as engagement in small and large scale business.

3.4 Target Population.

A research population is generally a large collection of individuals or objects from which a sample is taken for study (Orodho, 2009). Olive Mugenda andAbel G. Mugenda (2015) define a target population as a whole group of individuals, events or objects which have common observable characteristics. In this study the target population consisted of 44 public primary schools. The respondents from these schools were 44 head teachers and 44 ICT teacher champions of the primary schools, making a total of eighty-eight (88) respondents. These respondents were identified because they played a critical role in ICT policy implementation

school level. The head teachers are responsible for implementation of any educational policy and as lead educators, they have a big role to play to ensure that polices are implemented at school level. Furthermore, they are the accounting officers and oversee any school strategies, including ICT implementation.

The ICT teachers were identified and found suitable for inclusion in the research because they hold a very critical part in ensuring that ICT is implemented at School level. They the one in-charge of ICT infrastructure, helps in organizing ICT programs in the school and, is answerable to the head teacher. They ensure that ICT strategies are implemented and reports to the head of institution.

3.5: Sample and sampling technique.

The study used census technique to get the respondents. According to Mugenda and Mugenda (2015), when the population is small, census is the most preferred method. In census technique, the whole target population is included in the research. In this study, all 44 public primary schools were included since the respondents were drawn from all 44 schools found in Rabai Sub county. From these 44 schools, the researcher used purposive sampling to get 44 head teachers and 44 ICT champion teachers as respondents, making a total of 88 respondents.

Table 3.1

The sample size table

Category	Target population	100% Sample size
Head teachers	44	44
ICT champions	44	44
Total	88	88

3.6 Instrumentation

Questionnaire and interview schedule

Questionnaires for ICT champion teachers and interview schedules for head teacher were used to collect data. The questionnaire was ideal for collecting data as respondents could easily interpret and fill the instruments (O.Mugenda &A. Mugenda, 2015). Another advantage of questionnaires was that they enabled the researcher to collect a lot of data over a large area in a reasonably short time-span. Questionnaire also allowed the researcher to collect data in a standardized way. The questionnaires contained close-ended questions, which had choices for the respondent to choose from. The ICT teachers filled the questionnaires which generated data which was relatively easy to analyze.

The head teachers were subjected to an interview schedule after the researcher made an appointment with them. Interview schedule were ideal for collecting comprehensive data from the head teachers since it enabled the researcher to probe deeper and get a better and clearer

picture of the issues surrounding implementation of ICT in their schools. Likewise, head teachers, as administrators were always very busy and so an interview schedule helped to reduce the chance of the data collecting tools being lost or miss-placed.

Reliability of the instrument

Reliability, as defined by Olive Mugenda and Mugenda (2015) and Kothari (2014), is the level at which instruments used for research produces invariable results each time it is administered to the same group of people or objects after repeated trial. To determine its reliability, the instrument was tested using, test-retest technique. This technique involved administering the same instrument twice to the same group of subjects. Those scores from both testing periods are correlated to determine their reliability using Pearson's Product Moment Correlations Coefficient. The instruments will be reliable for data collection if the coefficient is close to + 1 or − 1. According to Mugenda and Mugenda (2015) coefficients of 0.70 or more indicate high degree of reliability of data.

The piloting for the study was done in Kaloleni Subcounty where 4 schools were selected. From them 4 head teachers and 4 ICT teachers making a total of 8 respondents were sampled. This was 9% of the study population. These respondents did not form part of the study population. The items in the assessment tools were correlated using the Cronbach's Coefficient Alpha reliability test and the outcome revealed as follows: that Communication skill had (α=0.965), Implementation of ICT policy (α=0.958), communication skill, (α=0.965), Coordination skills (α=0.973), Quality supervision skills (α=0.979), and Motivation skills (α=0.948). This demonstrated that all the five (5) variables were reliable as their reliability values exceeded the prescribed threshold of 0.70, which is considered acceptable. According to Cronbach's Alpha

reliability, a coefficient of 0.70 and above is considered "good and acceptable" in most social science research situations (Mugenda & Mugenda, 2015).

Validity of the instrument

The validity of an instrument is defined as the ability of the instrument to measure what it is intended to measure (Kothari 2014). The instrument's validity was established by involving experts in the research department and supervisors who evaluated them. The comments, suggestions and inputs were incorporated into before using the tools.

3.7 Methods of Data Collection and Ethical Consideration

Methods of Data Collection

Data collection is the gathering of information that is pertinent to the research objectives using research instrument (O. Mugenda&A. Mugenda, 2015). To accomplish this task, the researcher got a letter of introduction from Kenya Methodist University to introduce her to the field. The researcher then sought permission from the interior government, Ministry of Education and NACOSTI who also gave her a letter of permission. A copy of the permit granted was then presented to the Sub County education officer at Rabai Sub-county office, who then issued an introduction letter and a list of all the public schools in the sub-county. The researcher booked an appointment with the head teachers on when to visit the schools. On the appointed day, the researcher went to the schools to send the questionnaires to the ICT teacher champions to fill as well as conduct interview with the head teacher.

Ethical consideration

After gathering the data from the respondents, the researcher treated all information received with utmost privacy. The respondents were informed of confidentiality in advance both verbally

and in writing. The respondents were treated respectfully over the period of data collection; with written assurance that the data obtained was not to be used for any purpose except for this study only. The researcher also secured a letter from the NACOSTI ethical review committee which authorized the researcher to proceed with the data collection. The study was thus carried out with high standards of integrity and objectiveness following the guidelines laid down by NACOSTI ethical review committee.

3.8 Methods of Data Analysis

Data analysis is the process of bringing order and meaning to a mass of information collected; (O. Mugenda &A. Mugenda, 2015).The data collected was analyzed using both quantitative and qualitative data analysis approaches. The approaches involved descriptive where the researcher described qualitatively what was found. Both the quantitative data and qualitative data were coded according to the objectives. The Data from questionnaire were coded with the help of Statistical Package for Social Science (SPSS version 27). Inferences were made from the findings. Co relational analysis was made to find out the relationship between the independent and dependent variables. The level of significance was determined using Regression analysis and ANOVA and 5% level of significant were considered as significant. Tables and figures were used to summarize processed data, percentages and frequencies were used for presentation of the findings.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The presentation of the study results and discussions supported by empirical findings is made in this chapter. The flow of investigations was guided by the specific objectives. The research sought to answer the general objective of the study. The general objective of the study sought to investigate the influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai Sub-County, Kenya. Specific objectives were to determine the influence of the head teachers' communication skill on the implementation of ICT policy in public primary schools in Rabai Sub county of Kilifi county, to investigate the influence of head teachers' coordination skills on the implementation of ICT policy in public primary schools in Rabai Sub-County of Kilifi County, to examine the influence of the head teachers' quality supervision skills on the implementation of ICT policy in the public primary schools in Rabai Sub county of Kilifi county and to assess the influence of the head teachers' motivation skills on the implementation of ICT policy in public primary schools in Rabai sub county of Kilifi County.

4.2 Response rate

Table 4.1:
Response rate

Respondents	Frequency	Percentage %
Received Response	70	79.55%
Un-received response	14	20.45%
Expected response	88	100%

The study collected data from 88 respondents derived from the 44 public schools in Rabai Sub County and managed to receive back 70 questionnaires. After the process of editing and cleaning data, the entire collected 70 questionnaires were deemed good for further analysis translating to a response rate of 79.55%. The questionnaires that were not returned were 14 which constituted 20.45%. According to Mugenda and Mugenda (2015), 50% response rate of is considered adequate; 60% response rate of is considered to be good, while any response rate of 70% and above is considered to be very good. Many researchers have assumed that high response rate safeguards the achievement of unbiased estimates (Mugenda & Mugenda, 2015).Therefore, the response rate of 79.55% as per the recommendation of Mugenda and Mugenda, (2015) provided a sound basis for collection of unbiased data for the study.

4.3 Reliability Test

Table 4.2:

Reliability Analysis

Variables	Items tested	Cronchbachs' Alpha
Implementation of ICT policy	5	0.958
Communication skill	5	0.965
Coordination skills	5	0.973
Quality supervision skills	5	0.979
Motivation skills	5	0.948

Cronbach's Coefficient Alpha in table 4.1 revealed the following: Implementation of ICT policy (α=0.958), communication skill, (α=0.965), Coordination skills (α=0.973), Quality supervision skills (α=0.979), and Motivation skills (α=0.948).

To determine the reliability of the questionnaires, a pre-test study was carried out. Reliability refers to the consistency of measurements when the test or measure is applied repeatedly (Mugenda & Mugenda, 2015, Kothari, 2014). Reliability analysis was subsequently done using Cronbach's Alpha Reliability coefficient. The Cronbach's Alpha ranges from 0 to 1. When the internal consistence is closer to 1, then, the internal consistence is great. Hence, the reliability test, to measures the internal consistency of items was done to establish whether the items within a scale, measure the same construct. The findings were as summarized in Table 4.2 above

The questionnaires and the interview schedule measured five constructs. These constructs were implementation of ICT in the school which had five items. The internal consistence in the scale was high as determined by Cronbach's Alpha value of 0.958. The second construct was communication skills of the head teacher in relationship to implementation of ICT in the public primary school. It had five questions and had a high internal consistence of Croncbach'sAlpha value of 0.965. The third construct was head teachers coordination skills on implementation of ICT which had five items. There was also a high internal consistence with a Cronchbach's Alpha value of 0.973. The fourth construct was head teachers Quality supervision skills which had five items on the scale, and it revealed a high internal consistency with a Cronchbach's Alpha value of 0.979. The fifth construct was head teachers' Motivation skills which had five items. The outcome of reliability test using cronchbach's Alpha value of 0.948 revealed a very high internal consistency. This was a demonstration that all the five (5) variables were reliable as their reliability values exceeded the prescribed threshold of 0.70, which is considered acceptable.

According to Cronbach's Alpha reliability, a coefficient of 0.70 and above is considered "good and acceptable" in most social science research situations (Mugenda&Mugenda, 2015).

4.4 Results of Demographic characteristics

Analyzing the demographic characteristics of the respondents in a study is very important. It enables the researcher to understand their effects on the study variables. In order to factor this aspect in, the researcher captured some demographic characteristics in relation to gender, age distribution, level of experience, duration in current station and whether the respondent is trained in ICT.

4.4.1 Gender of respondents.

Table 4.3:

Gender of respondents

Gender	Respondents	Frequency	Percent
Male	Head teachers	28	40.00
	ICT Champion teachers	27	38.58
Female	Head teachers	7	10.00
	ICT Champion teachers	8	11.42
Total		**70**	**100**

The male respondents in the study were 55 comprised of 28 head teachers and 27 ICT Champion teachers. This was 40% and 38.58% respectively. The total percentage of male respondents translated to 78.58%of total respondents while the female respondents were 15 (7 head teachers which was 10% and 8 ICT Champions which was 11.42%). which translated to a total of 21.42%. The figures are shown in table 4.2 above. There were more male respondents than female. This was considered as unbalanced gender distribution and assignment as per the 1/3

gender rule as espoused in the Kenya 2010 constitution in relation to gender balance. Female are more capable of multitasking and coordinating projects better than male as revealed in a research by Zippia (2022), where 62.3% of projects in US are being coordinated by female against 37.7% coordinated by male. This un-balanced gender disposition reveal that most schools are being managed by male teachers and that most female teachers in Rabai Subcounty have not been deployed as head teachers. In terms of ICT roles, most of the school's head teachers have assigned male teachers as in charge of ICT activities leaving out the female teachers. This aspect could be having an effect on the implementation of ICT in the public primary schools.

4.4.2 Age distribution of respondents

Figure 4.1:

Age of the respondents
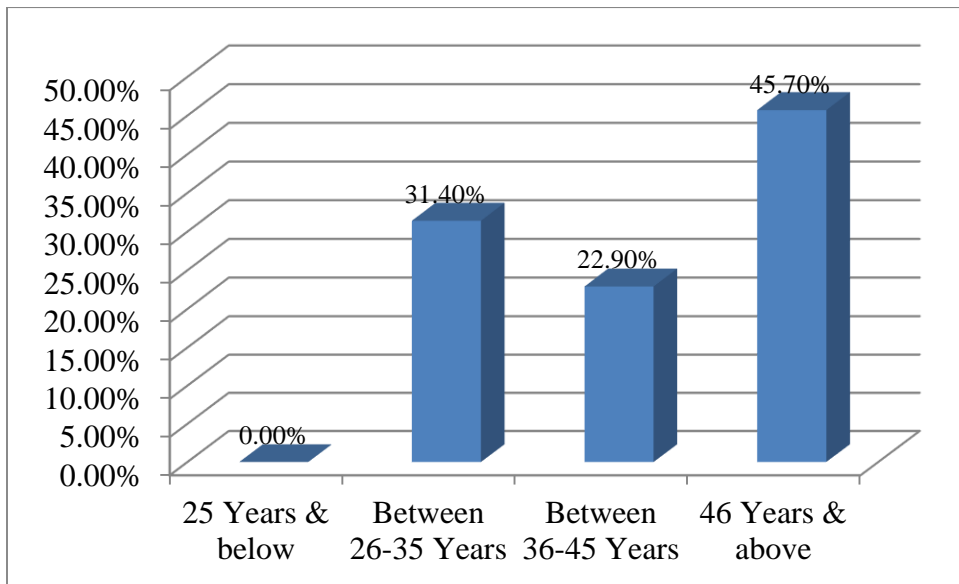
As summarized in the figure 4.2, respondents between 25 years and below age bracket was 0%. Respondents of age bracket between 26-35 years formed 31.40% of total respondents. The third age group of respondents came from 36-45years age which was 22.90%. The second and the third age group constitute personnel who are more productive in any given institution and most of them are pro-active in using ICT in communication. They are therefore referred to as active teaching age brackets and have a great input towards implementation of any school policies, including ICT policy. The fourth group of respondents came from the 46 years and above age group which was 45.70%. This group mostly comprises of school head teachers who are about to retire and their productivity and drive has gone down. They are in the administrative position and decision makers. They are the ones in the leadership position and have the role to allocate resources and spearhead development in the school and propel the implementation of policies in the institution

4.4.3 Experience as ICT champion teacher

Figure 4.2:

Experience as ICT champion teacher
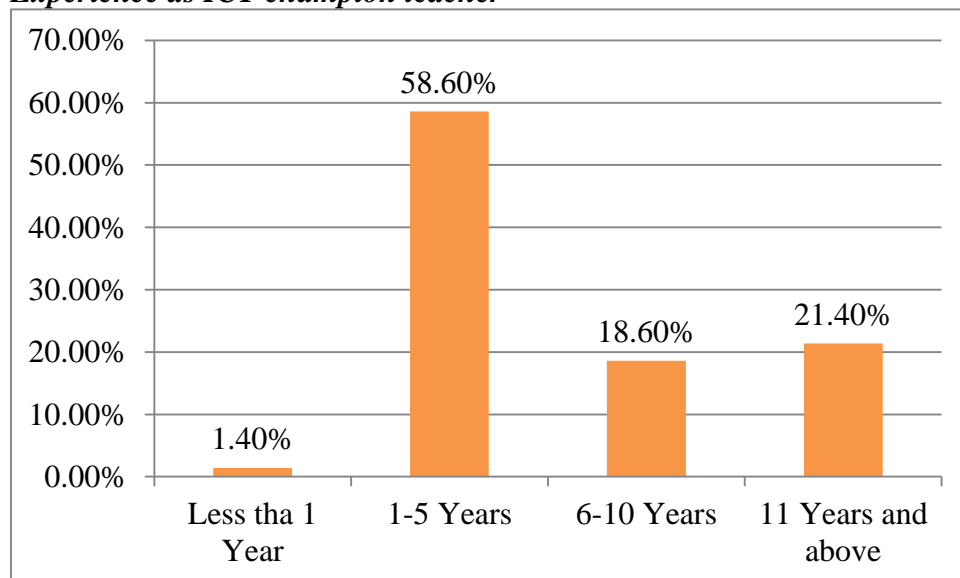
The study also sought from the respondents what was the duration of their experience as ICT champion teachers and the results showed that 1.4% of the respondents had experience less than one year, the percentage of respondents with experience of between 1-5 years was 58.6% while 18.6% of the respondents were between 6-10 years of experience and finally, 21.40% had a working experience of 11 years and above as shown in figure 4.2 above. The results showed that most ICT champion teachers had adequate working experience as ICT champions in the institutions. This working experience made them to be in a position to identify the challenges and successes o ICT implementation in the schools.

4.4.4 Duration of time respondents have been in the current station

Table 4.4:

Duration respondents have been in the current station

Period	Frequency	Percent
Less than 1 Year	2	2.9
1-5 Years	49	70.0
6-10 Years	18	25.7
11 Years and above	1	1.4
Total	**70**	**100.0**

From the table 4.4 above, those who have stayed in the current station for less than 1 year and below was 2.9%, while 70% of the respondents had been in their current station for duration of between 1-5 years. 25.7% of the respondents had stayed within the current station for a period of between 6 to 10 years and finally those who had stayed with the same station for 11 years and above was 1.4% of the respondents. This showed that most of respondents had been in the

current station for a considerable time enabling them to have adequate information concerning ICT implementation in their schools.

4.4.5 Whether trained in ICT

Figure 4.3:

Trained in ICT championship
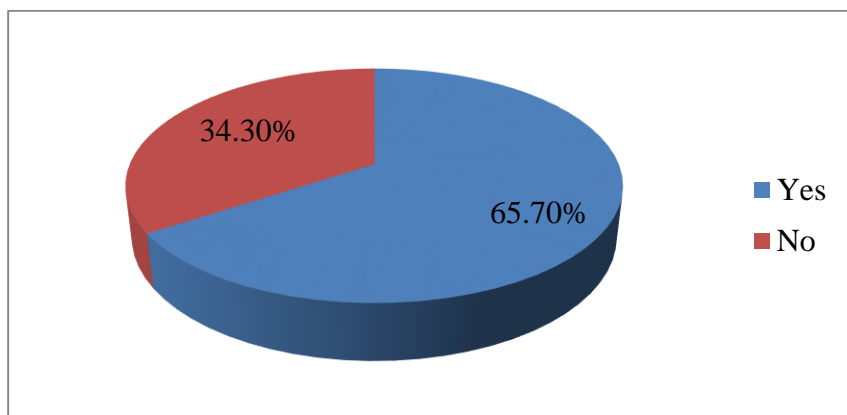
In establishing whether the respondents were trained in ICT, the findings showed that a majority of 65% of the respondents were trained in ICT as shown in figure 4.3 while 34.3% of them indicated that they were the ICT champion teachers yet they had not been trained in ICT. They were learning the technical skills while on the job. They had minimal skill and their role mainly dealt with being responsible of the computer labs and the ICT resources. A person who is well trained in a particular skill can be very instrumental in inducting and empowering others.

4.5. Qualitative analysis

This research study also used a qualitative analysis to get the opinion of the head teachers regarding the extent of implementation ICT policy in the public schools. On communication skills, the study wanted to establish out how often the head teachers sensitized their teachers on ICT policy and majority of head teachers responded that by saying, "I do it quite often", I do it many times", "We do it weekly" "We do it once per term" These responses implied that

sensitization on ICT policy was being done in the schools but the frequency differed from school to schools. This indicated that the government had no policy which mandates the head teachers to sensitize the school stakeholders on ICT policy in a specific number of times in a term. When asked about strategies 'What ICT strategies does your school have? Most of the head teachers answered, "We do not have strategies for ICT implementation." or "We have not yet put ICT strategies in place for ICT." These opinions from most of them confirmed that they lacked school ICT strategies. This implied that the individual schools had no definite strategies which the individual schools implemented. The head teachers responded that they depended on trainings organized by the zone. After the zonal training, the head teachers were expected to organize for the training for teachers through an inset on school based policy to update the teachers, something which most schools had not done. On effectiveness of the strategies on ICT implementation, the head teachers said that it has eased work since the ICT champion teacher helps to upload data and assessment online. Some teachers have shown some interest in using ICT. The number of teachers who are now using ICT has increased though at a very slow rate. When asked about the ICT infrastructure in the school, "what ICT infrastructure does your school have?" Their opinion on the type of ICT infrastructure the schools had was "The school had computer laboratory which was used as a strong room to store pupils tablets, the computers, and projectors". These gadgets were to be used by the teachers in teaching and sourcing for information. When the head teacher was asked whether all the teachers sensitized about the infrastructure and were aware that the schools had such resources and whether he had informed them in good time. The head teacher confirmed that they do inform their teachers about the availability of computer and other resources time. On their opinion on how often they reminded their teachers on deadlines on making professional records using digital devices. The response varied some "I do it often during assembly" others said "I remind them during standing meeting"

I remind them during assembly and in school forums". Still on the same, some head teachers said that they reminded their teachers on using digital to prepare professional records first meeting when schools open for a new term. In other instances, they used the whatsApp walls of their staff to send-short messages (SMS).

When the head teachers were asked about ICT challenges, "what ICT challenges do your teachers have?" Most of them responded, " Computer breakdown, power shortage/blackout, server not effective, Lack of Computer skills , failure of network coverage, among others" The head teachers were then asked as to how often he/she gave their teachers opportunity share these ICT challenges during staff meetings. The response from the majority was that, They share their challenging experiences of using ICT often", "Once per term " and others responded that they shared their challenges weekly. The interpretation of these opinions was that the head teachers communication skills towards sensitizing the teachers on ICT policies, availability of resources, dead-lines to submit professional records made using digital devices is felt but the schools have no concrete strategies communicated to the teachers which positively influence implementation of ICT.

On their opinion on coordination skills, the head teachers were asked whether they had a timetable for ICT lessons which they were coordinating and whether these timetables were followed effectively. The responses from most of them were, "I do not have a timetable for ICT integrated lessons." They had the normal timetable for the regular lessons which. " We have the regular timetable which is strictly followed, but it does not integrate ICT," The few who said that they had ICT lesson timetable were asked whether the timetables were effectively followed by the teachers, but the response was that it was not regularly followed due to classroom work. On coordination of resources, the head teacher were asked mechanism have you put in place to

source for ICT resources. They said that the resources were provided by the government. In some schools, the parent through the board of management had bought a laptop and a printer for the school to add on to what was already available. When the head teachers were asked, what mechanism have you put in place to source for ICT resources? Which ICT resources are adequate in the school? The responses were, "Our school has been provided two computers and tablets for the learners by the government." When asked whether these resources were adequate, the response was, "The resources were inadequate". In some schools which were under imlango project got the ICT infrastructure which they were now using. In other schools, an NGO was frequently visiting their school and assisting them with resources. On coordination of ICT programs in the schools, the head teachers were asked whether they had put ICT programs at school level. The response was that, there were no training programs in place organized by the school but depended on the training programs organized by the zone. When the head teachers were asked about how many teachers were trained in ICT. Majority of them said that they had about three (3) teachers trained, however, these teachers trained in their own initiative and not supported by the schools .On coordination of ICT program of activities, a few of the head teachers said that some teachers take their learners to the computer lab, others use computer to uploading of TPAD, uploading of CBC assessment, preparation of score sheets after assessment, registration of learners for nation examination such as KCPE and registration of learners National Education Management System (NEMIS) among others. These activities are implemented with challenges since most of the head teachers depend on the ICT champion teachers. Even the other teachers in the school depend on the ICT champion teacher for all digital work. This resulted to the Champion teacher being overworked and some of data not being done on time to beat the deadline. So when the head teachers were asked how often they met deadline when registering candidates for KNEC exams, uploading NEMIS data, TMIS and

TPAD was done by the teachers, the head teachers replied that some teachers do not meet dead line, and the head teacher had to take the work to the cyber, even the teacher themselves use the cyber café' for digital work. The responses indicated that coordination skills in terms of coordinating ICT programs were minimally done and only a few schools made use of the computer labs and learners tablets. This indicated that effective coordination of ICT activities was missing in thereby affecting implementation of ICT policy in Rabai Sub County.

On quality supervision skill of head teachers in view of ICT implementation, the head teachers were asked, "How often do you carry out lesson observation of ICT integrated lessons?'' Most head teachers replied, "I carry out lesson observation once per term which is mandatory as per the requirement for the implementation of Teachers performance appraisal development process" when the head teachers were asked whether the integration of ICT was done by teachers in teaching and learning process. Most of them their response was, "No, the teachers were not integrating ICT." Others said "very rarely". In terms of supervision and endorsement of professional documents, the head teachers were asked what they did when a teacher presented professional documents prepared manually for endorsement. Most head teachers said that they endorsed them but advised them to use digital devices. Most of the head teachers also said that most of the records in their schools were prepared manually and in a few cases teachers made attempts to use internet to download schemes of work. The interpretation is that the head teachers were not stressing on their teachers to use ICT in preparation of professional records. This indicated a failure by the school leadership on supervising the implementation of ICT. The head teachers were asked, "How often do you identify the training needs of the teachers? Do you address the gaps". Most of them responded, "Once per term". Others said, "We have never tried to identify training needs." When asked what they did with the identified gaps? Most of

the head teachers replied, "I have not done anything to mitigate the gaps." "The gaps were not effectively addressed". When the head teachers were asked how many classes had ICT programs, the answer was that only two classes (grade 4 and 5) in most of the schools. On evaluation of ICT policy implementation in the schools, most of the head teachers said rarely, once per month, once per term, and others said they had no evaluation program. The responses and opinions of the head teachers on quality supervision skills indicated that the head teachers did not identify gaps, and the few head teachers who identified gaps, they did not address them. Evaluation of ICT policy in the school was not done, yet evaluation is a component of supervision. This deficiency in quality supervision impacted negatively on ICT implementation in public schools in Rabai Sub County.

In terms of motivation skills used by the head teacher towards implementation of ICT, the head teachers were asked whether they had a system to reward those who were using ICT. "What system do you use to reward teachers who use SICT as a way of motivation" Most of the head teachers there response was," There is no definite rewarding system," "We rarely award the teachers," A few said, "I motivate them using tokens, air time, praising them". A few head teachers said that they motivated teachers who used ICT by offering tokens such airtime, congratulating them in front of others. When asked whether congratulating them during staff meeting had any effect towards implementing ICT. The response was that, system of congratulating the teachers only had very minimal effect on implementation of ICT but they said giving them laptops, providing WIFI, bundles and monetary motivation did the trick. On how often they recognized the effort of teachers for using ICT in preparing professional record during staff meeting. Some head teachers said Twice per term and others said once per term. When asked whether they gave incentives to the teachers as recognition for using ICT. "Do you give

incentives to teachers who use ICT" Most of them said, "No, I do not give any incentives", others said they gave them present like quire books, airtime, keep on praising them through mentoring them in various contexts. On how often they gave responsibilities to teachers using ICT as an encouragement. The response from most of the head teachers was that they gave the teachers who use ICT responsibility "quite often, weekly and every time ICT work needed to be done". On motivating teachers to use ICT by creating a conducive school environment and freedom to use ICT gadgets, the head teachers said that they did that by ensuring that electricity power was available throughout and that there was no internet interference and ensuring that WIFI was available and free to use when necessary. From the responses of the head teachers, it is evident that the level of motivation of teachers towards implementation of ICT is very low. According to Chigona et al (2014) Individuals' expectations, sense of responsibility and achievement experienced when using the technologies creates motivation. Thus head teachers who recognize their teachers who use ICT will motivate them into using technology. The opinions in this study indicate that the level of motivation by head teachers towards implementation of ICT is low. This results into minimal implementation of ICT policy in Rabai Sub County.

As far as implementation of ICT in the school was concerned, the head teachers were asked in their opinion, what effect motivation strategy had on effective utilization of resources in the school. Majority of them said, "Motivation increased the teachers' interest in using the ICT resources, "Motivation also encouraged teachers to volunteer and that it helped in that work will be done with ease. The respondents were also asked to share their opinion on whether effective digital preparation of professional record by teachers was dependent on the quality of supervision of ICT programs by school leadership. Most of them responded as follows, "Using

digital devices to make professional records was dependent on quality supervision of the head teacher," Through quality supervision by the head teachers, gaps were identified and the teachers were strongly advised to use ICT devices to do their professional records. The head teachers were asked in their opinion "Is maintenance of digital school data dependent on effective coordination of strategies by school leadership". The response from most of them was in affirmative and that, through coordination strategies, maintenances of school data were well maintained and easy to access.

The head teachers were asked whether integration of ICT in teaching by teachers was dependent on head teachers' motivation through training. There response was, "Yes, ICT integration was dependent on motivating teachers through training. Training encouraged teachers to be skilled in infusing ICT in their teaching .they said if motivation through training was done well; it enabled teachers to become resourceful in their teaching sprees. When the head teachers were asked, "Is timely uploading of TPAD, TMIS and KNEC data dependent on effective communication of the dead line by the head teacher?" Most of them their response was, "Yes, all school programs were timely met through the good communication," and enhanced by the digital literacy. "Effective communication of deadline of uploading TPAD TMIS and KNEC data was dependent on effective communication of dead-line." From the opinions of the head teachers on implementation of ICT in Rabai Sub county, it was evident that leadership qualities of head teacher in terms of Communication, coordination, quality supervision of school programs and motivation have an impact on ICT implementation of ICT in public primary school which is in agreement with study findings by (Jonyo & Jonyo, 2019; Mofarreh, 2016; Laaria, 2013).

4.6 Descriptive statistics

This research investigated the influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai Sub-County- Kenya, with independent variables being communication skills, coordination skills, quality supervision skills and motivation skills. Dependent variable was ICT implementation. Descriptive statistics were tested and result given in form of mean and standard deviation (std).

4.6.1 Communication skills

 Table 4.5

Communication skills

Statement	N	Mean	Std Dev.
The head teacher effectively sensitizes teachers on ICT policy.	70	2.6000	1.33284
The school has effective ICT strategies.	70	3.3429	1.16171
Head teacher always informs teachers on availability of ICT materials on time	70	2.0000	.80440
Head teacher always reminds teachers on deadlines on making professional records using digital devices.	70	2.5429	1.37932
Head teacher always gives teachers opportunity to share ICT challenges during staff meetings.	70	2.2000	1.32399
Average	**70**	**2.53716**	**1.200452**

The first objective of this study was determining the influence of the head teachers' communication skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. To help answer this objective, the study used a likert scale where 1-2.9 represented agreed, 3-3.9 represented moderate while 4-5 represented disagreed and the result is shown in table 4.5. On whether the head teacher sensitizes teachers on ICT policy, the result

showed that some of the respondent agreed that the head teacher effectively sensitizes teachers on ICT policy with a mean score of 2.60000 and standard deviation of 1.33284. On whether the school had effective ICT strategies, the results showed that majority of respondent indicated a moderate mean of 3.3429 and a standard deviation of 1.16171 implying that they were not sure whether the school had effective ICT strategies. They also agreed with a mean of 2.0000 and standard deviation of 0.80440 that head teacher always informs teachers on availability of ICT materials on time. On reminding teachers on dead-lines, the results showed that it was true with a mean of 2.5429and standard deviation of 1.37932 that head teachers always reminded teachers on deadlines on making professional records using digital devices. On the side of whether head teacher always gave teachers opportunity to share ICT challenges, the respondents agreed with a mean of 2.2000 and standard deviation of 1.32395. Overall/average the respondents agreed with a mean of 2.53716 and standard deviation of 1.200452 that the head teachers in public primary schools in Rabai Sub County of Kilifi County have adequate communication skill on the implementation of ICT policy. According to the findings in the table above, head teachers' communication skills have a significant effect on the implementation of ICT. This finding is in tandem with a study conducted by Andrew (2011) that effective communication skills by head teacher assist in generating engagement and commitment from the stakeholders, encouraging participation of teachers in the implementation process and generating enthusiasm, and prompting dissemination of team results to the stakeholder. To some extent, the head teachers' communication skills have created awareness on ICT policy in that public primary schools in Rabai Sub County.

4.6.2 Coordination skills

Table 4.6:

Coordination skills

Statement	N	Mean	Std Dev.
The school has effective timetable for ICT integrated lessons	70	3.8286	.95442
The head teacher has adequately sourced for ICT resources	70	2.9429	1.28207
The school has effective training program for teachers	70	3.7429	.85209
The school has effective ICT program of activities.	70	3.6286	1.03144
The head teacher always ensures filling of online data: KNEC, NEMIS, TMIS and TPAD are done on time by the teachers	70	2.3714	1.13981
Average	**70**	**3.30288**	**1.051966**

The second objective of this study was determining the influence of the head teachers' coordination skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. To help answer this objective, the study used a likert scale where 1-2.9 represented agreed, 3-3.9 represented moderate while 4-5 represented disagreed and the result in table 4.6 showed that majority of the respondent were not sure with a moderate mean of 3.8286 and standard deviation of 0.95442 whether the school has effective timetable for ICT integrated lessons. On ICT resources the respondents also agreed with a mean of 2.9429 and standard deviation of 1.28207 that the head teacher has adequately sourced for ICT resources. On training programs, the teachers were not sure with a mean of 3.7429 and standard deviation of 0.85209 as to whether the school has effective training program for teachers. On ICT programs the results was teachers were indifferent with a mean of 3.6286 and a standard deviation of 1.03144 as to whether the school has effective ICT program of activities. On timely filling of data online, the

teachers were in agreement with a mean of 2.3714and standard deviation of 1.13981 with the sentiment that the head teacher always ensures filling of online data: KNEC, NEMIS, TMIS and TPAD are done on time by the teachers. The overall opinion was a moderate mean of 3.30288 and standard deviation of 1.051966 which is a clear demonstration that the head teachers in public primary schools in Rabai Sub County of Kilifi County do not exhibit effective coordination skill on the implementation of ICT policy.These results indicate that coordination skills of the head teachers have a significant effect on ICT implementation.

4.6.3 Quality supervision skills

Table 4.7:

Quality supervision skills

Quality supervision	N	Mean	Std Dev.
The head teacher carries effective lesson observation of ICT integrated lessons.	70	3.4857	1.14716
The head teacher effectively endorses digitally made professional records.	70	3.1429	1.24009
The head teacher effectively identifies training needs.	70	3.4286	1.19523
The ICT supervision program is effectively followed in all classes	70	3.6000	1.06274
The school has an effective ICT policy evaluation program in place.	70	3.8857	1.07844
Average	**70**	**3.50858**	**1.144732**

The third objective of this study was determining the influence of the head teachers' quality supervision skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. To help answer this objective, the study used a likert scale where 1-2.9 represented agreed, 3-3.9 represented moderate while 4-5 represented disagreed and the result in

table 4.7 on effective lesson observation showed that the respondents not sure with moderate mean of 3.4857 and standard deviation of 1.14716 on whether the head teacher carries effective lesson observation of ICT integrated lessons or not. The respondent were also not sure on endorsing of digital records with mean of 3.1429 standard deviation of 1.24009 on whether the head teacher effectively endorses digitally made professional records or not. On identification of training needs, the respondents also indicated that they were in dilemma with a mean of 3.4286 and standard deviation of 1.19523 on the question whether the head teacher effectively identifies training needs. Similarly, the respondents were indifferent with a mean of 3.6000 and standard deviation of 1.06274 as to whether the ICT supervision program is effectively followed in all classes or not. On policy evaluation, the respondent were not sure with a mean of 3.8857 standard deviation of 1.07844 whether the school has an effective ICT policy evaluation program in place or not. The overall mean of respondents was moderate of mean 3.50858 and deviation of 1.144732 a clear confirmation that the head teachers' quality supervision skill was not effectively done and it was significantly affecting the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County.

4.6.4 Motivation skills

Table 4.8:

Motivation skills

Motivation skills	N	Mean	Std Dev.
The school has an effective rewarding system for those using ICT.	70	4.2857	.82503
The head teacher always praises the teachers who use ICT in preparing professional record in a staff meeting.	70	2.7714	1.08697
The head teacher recognizes the effort of teachers by giving teachers incentives.	70	3.4286	1.24347
The head teacher frequently encourages teachers using ICT by giving them responsibility.	70	2.0857	.78108
The head teacher always encourages teachers to use ICTby providing a conducive ICT working environment and freedom to use ICT gadgets.	70	2.0857	.78108
Average	**70**	**3.93142**	**1.983578**

The fourth objective of this study was determining the influence of the head teachers' motivation skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. To help answer this objective, the study used a likert scale where 1-2.9 represented agreed, 3-3.9 represented moderate while 4-5 represented disagreed and the result in table 4.8 shows that the respondents disagreed that the school has an effective rewarding system for those using ICT with a mean 4.2857 and a standard deviation of 0.82503. On whether the head teachers praised teachers, the teachers agreed with a mean of 2.7714 and standard deviation of 1.08697 that the head teacher always praises the teachers who use ICT in preparing

professional record in a staff meeting. On whether the head teacher recognized teachers' effort, the respondents disagreed with a mean of 3.4286 and standard deviation of 1.24347 thatimplied that the head teacher recognized the effort of teachers by giving teachers incentives because they have never witnessed such recognition. On the aspect of whether the head teacher frequently encourages teachers using ICT by giving them responsibility the result was that the respondents agreed with a mean of 2.0857and standard deviation of 0.78108. On whether the head teacher always encourages teachers to use ICT by providing a conducive ICT working environment and freedom to use ICT gadgets, in both aspects, the respondents agreed with a mean of 2.0857 and standard deviation of 0.98134. Overall, the respondents were in dilemma with a mean of 3.93142 and standard deviation of 1.98358 as to whether the head teachers' motivation skill is on course or not. This implied that motivation on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County was not felt in the schools yet it was significant for implementation of any strategy in an institution.

4.6.5 ICT Implementation

Table 4.9:

ICT Implementation

ICT Implementation	N	Mean	Std Dev.
Effective utilization of ICT resources in public school is dependent on head teachers effective motivation strategies	70	1.6286	.73106
Effective digital preparation of professional record by teachers is dependent on quality supervision of ICT programs by head teacher.	70	1.8286	.89066
Maintenance of school data digitally is dependent on effective coordination of strategies of the head teacher.	70	1.5714	.77784
Integration of ICT in teaching by teachers is dependent on motivation of head teachers through training.	70	1.6857	.83213
Timely uploading of TPAD, TMIS and KNEC data is dependent on effective communication of the dead line by the head teacher.	70	1.3714	.54695
Average	**70**	**1.61714**	**.755728**

The dependent variable of this study was to investigate how the head teachers' leadership influence the implementation of ICT policy in public primary schools in Rabai Sub-County, Kenya. To help find out how this variable is affected by influence of head teachers' leadership, the study used a likert scale where 1-2.9 represented agreed3-3.9 represented moderate while 4-5 represented disagreed and the result in table 4.9shows the responses from the respondents. The respondents agreed with a mean of 1.6286 and standard deviation of 0.73106 that effective utilization of ICT resources in public school is dependent on head teachers' effective motivation

strategies. On whether effective digital preparation of professional record by teachers is dependent on quality supervision of ICT programs by head teacher the respondents agreed with a mean of 1.8286 and standard deviation of 0.89066. This means that, with quality supervision of the head teacher, teachers in Rabai sub-county will be effective in preparing professional records using digital devices, and therefore improving ICT implementation. On whether maintenance of school data digitally is dependent on effective coordination of strategies of the head teacher the respondents agreed with a mean of 1.5714 and standard deviation of 0.77784. On whether Integration of ICT in teaching by teachers is dependent on motivation of head teachers through training the respondents agreed with mean of 1.6857 and standard deviation of 0.83213. This implies that, motivating teachers through training, will improve implementation of ICT in Rabai zone. On whether Timely uploading of TPAD, TMIS and KNEC data is dependent on effective communication of the dead line by the head teacher the mean was 1.3714 and standard deviation of 0.54695. Teachers will be able to meet dead-lines on uploading data when the head teacher communicates to the teachers in good time. The overall average mean was 1.61714 in agreement and the standard deviation of 0.755728. The interpretation of these findings is that, the leadership qualities of the head teacher, influence implementation of ICT in public primary schools in Rabai sub county. To be specific, improved communication skills, coordination skills, quality supervision skills and motivation skills of the head teachers' influence the implementation of ICT in public primary schools in Rabai Sub County.

4.7 Coefficient correlation

Table 4.10:

Coefficient correlation

Variables		ICT Implementation
ICT Implementation	Pearson Correlation	1
	Sig. (2-tailed)	
	N	70
Communication skills	Pearson Correlation	.938[**]
	Sig. (2-tailed)	.000
	N	70
Coordination skills	Pearson Correlation	.949[**]
	Sig. (2-tailed)	.000
	N	70
Quality supervision skills	Pearson Correlation	.888[**]
	Sig. (2-tailed)	.000
	N	70
Motivation skills	Pearson Correlation	.905[**]
	Sig. (2-tailed)	.000
	N	70

This study sought to establish the link between the independent variable (Communication skills, Coordination skills, Quality supervision skills and Motivation skills) and dependent variable (ICT implementation) and the outcome in table 4.10 reveal that there is a very strong significant

relationship (r=0.938, sig=0.000) between Communication skills of the head teacher and ICT implementation in public schools. There is also a very strong significant relationship (r=0.949, sig=0.000) between coordination skills of the head teacher and implementation of ICT in public schools. There is equally a very strong significant relationship (r=0.888, sig=0.000) between quality supervision skills of head teacher and implementation of ICT and finally, there is a really strong significant relationship (r=0.905, sig=0.000) between motivation skills of the head teacher and ICT implementation in public primary schools. This implies that with improved communication skills, coordination skills, quality supervision skills and motivation skills of the head of the educational institutions, the implementation of ICT in Rabai Sub County are improved. This implies that there is an urgent need for programs to capacity build the competence of the head teachers on leadership skills.

4.8 Regression analysis

Further, the study administered regression analysis to determine the R square, model validity and coefficient of determinants.

4.8.1 Model summary

Table 4.11:

Model summary

Model Summary			
Model R	R Square	Adjusted R Square	Std. Error of the Estimate
1 .975ᵃ	.951	.948	.37334

The outcomes in the model summary reveals that there is a very strong relationship (r=0.975) and that the variance of ICT implementation policy in Rabai Sub County has been explained to

the extent of 95.1% meaning that the remaining balance 4.9% can be explained by other variables apart from those variables studied.

4.8.2 Model validity

Table 4.12:

Analysis of variances (ANOVA[a])

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	174.872	4	43.718	313.649	.000[b]
	Residual	9.060	65	.139		
	Total	183.932	69			

The study applied   regression analysis to determine the   validity of the model and thereafter the result revealed that the model was acceptable prediction as shown with (F=313.649, Sig. =0.000) in table 4.12 above.

4.8.3 Coefficient

Table 4.13

Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	.004	.062		.063	.950
Communication skills	1.218	.151	1.249	8.052	.000
Coordination skills	.307	.102	.324	3.006	.004
Quality supervision skills	1.095	.167	1.189	6.566	.000
Motivation skills	.533	.121	.583	4.415	.000

For the coefficient of determination the study established that 1 unit rise in communication skills improves ICT implementation policy by 1.218 units, a rise in 1 unit of coordination skills significantly (sig=0.000) improves ICT implementation policy by 0.307 units, 1 unit rise of quality supervision skills significantly improves ICT implementation policy by 1.095 units while I unit rise of motivation skills significantly improves ICT implementation by 0.583 units as shown in table 4.13 above.

4.9 Discussion

The study findings in table 4.12 indicate that the influence of head teachers leadership skills have statistical significance on implementation of ICT in the public primary schools in Rabai sub county in Kilifi county – Kenya. In as far as head teachers communication skills is concerned, the findings are concurring with a study by Ekeowa (2017) in Nigeria that stated that, for an organization to achieve its organizational goals, efficient and effective communication should be

put in place since it influences the positivity and the "bottom line" organization and implementation of strategies. The findings also concur with a study by Olang (2015) on Role of communication in strategy implementation that asserts that effective internal communication processes made staff to be highly aware of strategies and policies leading them to have full understanding of the organization. The study recommended strengthening of internal communication, ensuring that all staff members are aware of the objectives of the strategy; and how their key roles contributes towards realization of the mission and goals of the organization..

The study findings in table 4.12 above indicate that the coordination skills of the head teachers have a significant influence on implementation of ICT in public primary schools. This is in tandem to the study by (Isaac, 2007) that indicates major challenges concerning co-ordination of various initiatives and the lack of a comprehensive policy on ICTs in educational institution were stumbling blocks that needed to be addressed. The findings are also achoed by Akran (2011) who refers to Coordination as unifying effort and actions of different individuals in performing various activities as a team, fixing time when activities will be done by individuals in a blended productive team. This enabled staff to work as a team with a unit of purpose. The study further points out that coordination encourages staff to work as a team with a unit of purpose, move towards the same direction, are motivated and utilize resources well towards achievement of organizational objectives. Improving coordination skills of the head teacher will significantly improve the implementation of ICT policy as per table 4.12 above.

The study findings in table 4.12 indicate that there was deficiency in quality supervision skills of head teachers in ICT programs which has a significant affected on implementation of ICT in public primary schools in Rabai Sub County. The findings concur with a study carried out by Wanjiku (2018) that quality supervision of personnel carried out by the supervisor help to

sensitize, mobilize and motivate staff in the school towards performing their duties optimally towards achievement of the stated aims and objectives of the education institution. The study further states that quality supervision ensures that the staff carryout activities in the right way for a better performance which provides ground for improvement.

The study findings in table 4.12 also indicate that motivation skills of head teachers significantly affect the implementation of ICT policy in public primary schools. The findings concur with the study carried out by Chigona et al., (2014), that motivation urges or compels an individual to act, perform actions to achieve results. When an individual lacks motivation or lacks the desire to do an activity then no results will be realized. The study further indicated that external factors such as rewards include wages and other financial rewards; promotion and appreciation, from both supervisors and colleagues (Gasaymeh et al., 2017). The lack of motivation by the school leadership has negatively influenced implementation of ICT in Rabai Sub County in KIlifi County.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

A descriptive survey of 70 respondents was conducted to investigate the influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai Sub-County, Kenya. Factors influencing ICT implementation were measured using four variables: communication skills, coordination skills, quality supervision skills and motivation skills. The summary of findings, conclusions and recommendations are presented in this chapter and areas for further study are suggested.

5.2 Summary

This research investigated the influence of head teachers' leadership on implementation of ICT policy in public primary schools in Rabai Sub-County, Kenya. Specifically, to determine the influence of the head teachers' communication skill on the implementation of ICT policy in public primary schools in Rabai Sub county in Kilifi county, to investigate the influence of head teachers' coordination skills on the implementation of ICT policy in public primary schools in Rabai Sub-County in Kilifi County, to examine the influence of the head teachers' quality supervision skills on the implementation of ICT policy in the public primary schools in Rabai Sub county in Kilifi county and to assess the influence of the head teachers' motivation skills on the implementation of ICT policy in public primary schools in Rabai sub county in kilifi County.

Based on the outcome of this study, the average result regarding communication skills showed that majority of the respondent agreed that the head teacher communicates with the teachers with a mean score of 2.53716 since the head teacher effectively sensitizes teachers on ICT policy, availability of resources, reminding teachers on deadlines and sharing challenges. However, the respondents disagreed on effective strategies with respondent indicating a moderate of 3.3429 which implied that they were not sure whether the school has effective ICT strategies. The overall findings of the indicated that communication skills had r=0.938 which connotes a very strong relationship between communication skills and implementation of ICT in the public primary school. Failure to communicate concrete ICT Strategies and training program implies that the head teachers' communication skills were wanting.

On coordination skills the overall result was a mean moderate 3.30288 which showed that the majority of the respondent was not experiencing the coordination skill of the head teacher. Majority of them (moderate=3.8286) opined that the school did not have effective timetable for ICT integrated lessons or effective training program for teachers (mean 3.7429). However, the respondents also agreed (mean=2.9429) that the head teacher has adequately sourced for ICT resources. This implied that resources in the school were available, but coordination of ICT integrated lessons, ICT program of activity and ICT training programs were not being well done. Yet the study revealed the overall findings to be r=0.949 which connotes a very strong relationship between coordination skills of the head teachers' skills and implementation of ICT in the public primary school. This signifies that coordination skills of head teachers in Rabai Sub County are low which has contributed to negative implementation of ICT in the Sub County.

Further, regarding quality supervision skills the overall results showed a moderate mean of 3.50858 which showed that head teachers supervision in skills on ICT implementation was not

felt. On effective lesson observation of ICT integrated lessons, that the respondents were not sure (moderate=3.4857), of whether the head teacher carries or not. They were also not sure (mean=3.1429) whether the head teacher effectively endorses digitally made professional records or not. This was an indication that quality supervision of head teacher was wanting in Rabai Sub County.   This study revealed r=0.888 which connotes that there is a strong relationship between quality supervision and implementation of ICT in public primary school. This is a reflection of what is happening in Rabai Sub county public primary schools. The opinions of the respondents showed that supervision by the head teacher towards implementation of ICT was minimal resulting to deficit in effectively propelling ICT implementation in the schools.

Finally on the motivation skills, the study results shows an overall mean of 3.9314 as respondents were not being motivated by the head teachers. This result shows that the head teachers have shortcomings on motivation skills because the schools had no effective rewarding system with a disagreed (mean = 4), no incentive or recognition (mean = 3.4286). However, they agreed (mean=2.7714) that the head teacher always praises the teachers who use ICT in preparing professional record in a staff meeting. There was more that need to be done to motivate teachers because the study finding showed very strong significant relationship of r=0.905 between motivation skills and implementation of ICT. Motivation of teachers in terms of comprehensive rewarding system and offering incentives should be put in place in Rabai Sub County in order to improve the motivation of teachers towards implementation of ICT in the public schools.

5.3 Conclusion

5.3.1Communication skills

The first objective of the study was to determine the influence of the head teachers' communication skill on the implementation of ICT policy in public primary schools in Rabai Sub county in Kilifi- County. The study results showed that majority of the respondent agreed that the head teacher effectively sensitizes teachers on ICT policy with a score mean of 2.60000, respondent indicated (moderate=3.3429) implying that they were not sure whether the school has effective ICT strategies. They also agreed (mean=2.0000) that head teacher always informs teachers on availability of ICT materials on time and that it was true (mean=2.5429) that head teacher always reminds teachers on deadlines on making professional records using digital devices, but most teachers did not use the devices. This showed that, although the head teacher communicated to the teachers about the resources and dead-lines of record preparation using digital devises, but there was no stress on the teachers making use of digital devises. This aspect led to minimal implementation of ICT policy. This confirms the study findings that there is a very strong significant relationship between head teachers communication skills and implementation of ICT policy in public primary schools. An improvement in head teachers' communication skills will lead to an improvement in the implementation of ICT in public schools in Rabai Sub County.

5.3.2 Coordination skills

The second objective of the study was to determine the influence of the head teachers' coordination skill on the implementation of ICT policy in public primary schools in Rabai Sub county of Kilifi - county. The study result showed that majority of the respondent were not sure

(moderate=3.8286) whether the school has effective timetable for ICT integrated lessons. The respondents also agreed (mean=2.9429) that the head teacher has adequately sourced for ICT resources and that there were indifference (mean =3.7429) as to whether the school has effective training program for teachers. They were also indifference (mean=3.6286) as to whether the school has effective ICT program of activities. They were in agreement (mean=2.3714) with the sentiment that the head teacher always ensured filling of online data: KNEC, NEMIS, TMIS and TPAD are done on time by the ICT teacher. This implied that the schools had no concrete coordination strategies for all teachers put in place to implement the ICT policies. There Coordination of ICT in the school was wanting. The head teachers relied on the ICT teacher and the Cybers for ICT data. The findings confirm that there is a very strong significant relationship between head teachers coordination skills and implementation of ICT policy in public primary schools. An improvement in the head teachers coordination skills will lead to an improvement on implementation of ICT policy in public schools.

5.3.3 Quality supervision skills

The third objective of the study was to investigate the influence of the head teachers' quality supervision skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. The result showed that the respondents not sure (moderate=3.4857) of whether the head teacher carries effective lesson observation of ICT integrated lessons or not. They also not sure (mean=3.1429) whether the head teacher effectively endorses digitally made professional records or not. The respondents also indicated that they were in dilemma (mean=3.4286) when it comes to the question of whether the head teacher effectively identifies training needs. Similarly, the respondents were indifference (mean=3.6000) as to whether the ICT supervision program is effectively followed in all classes or not and that they were not sure

(mean=3.8857) whether the school has an effective ICT policy evaluation program in place or not. This implied that the teachers in the schools were not feeling the head teachers quality supervision skills or training needs identified. There was need for the head teachers to improve on their supervision skills. This is confirmed by the study findings that there is a very strong significant relationship between quality supervision and implementation of ICT in public primary schools. An improvement of head teachers' supervision skills will lead to an improvement on implementation of ICT policy in public primary schools.

5.3.4 Motivation skills

The last and final objective of the study was to determine the influence of the head teachers' motivation skill on the implementation of ICT policy in public primary schools in Rabai Sub County of Kilifi County. The study results show that the respondents agreed that the school has an effective rewarding system for those using ICT. They also agreed (mean=2.7714) that the head teacher always praises the teachers who use ICT in preparing professional record in a staff meeting but that they were not able (mean=3.4286) to say that the head teacher recognizes the effort of teachers by giving teachers incentives because they have never witnessed such recognition. On the aspect of whether the head teacher frequently encourages teachers using ICT by giving them responsibility and whether the head teacher always encourages teachers to use ICT by providing a conducive ICT working environment and freedom to use ICT gadgets, in both aspects, the respondents agreed in average, the head teachers needed to improve on the motivation skills on implementation of ICT in the public schools. This was very important because there is a very strong significant relationship between motivation skills of head teacher and implementation of ICT policy in public primary schools. An improvement in the head

teachers' motivation skills will lead to an improvement in the implementation of ICT policy in Public primary schools.

5.4. Recommendation

With regard to head teachers communication skills where majority of the respondent agreed that the head teacher effectively sensitizes teachers on ICT policy, but they were not sure of whether the school has effective ICT strategies, this study recommends to the school leadership should formulate effective ICT strategies or programs which should be effectively communicated to all the teachers.

The head teachers should coordinate ICT strategies and programs to all teachers for effective ICT implementation policy.

The head teachers should ensure to practice quality supervision for all ICT activities and teachers ICT training gap are identified and addressed thoroughly in order to improve the implementation of ICT in the public schools. They should also delegate the same where need be to their deputy head teachers to ensure personnel supervision is done continuously.

Motivation skills of the head teachers towards implementation of ICT should be improved to ensure that teachers are engaged in using ICT devices in teaching and learning sessions.

The ministry of education and TSC should organize for training for the head teachers on effective communication skills, coordination skills, quality supervision and motivation skills for them to effectively influence implementation of ICT policy in public primary school.

The ministry education should also organize training for head teachers on their roles in influencing ICT policy implementation in public primary schools.

The Teachers Service Commission should create a recognizable leadership position as ICT champion amongst the school administrators in public primary schools.

5.5 Area of further study

This study sought to answer the general objective of the study which sought to investigate the influence of head teachers' leadership (communication skill, coordination skills, quality supervision skills and motivation skills) on implementation of ICT policy in public primary schools in Rabai Sub-County, Kenya.

1. This study recommends further study aiming to investigate coordination factors on implementation of ICT policy in public primary schools in the entire Kilifi County.

2. Studies can also be done on factors of motivation skills on implementation of ICT in public primary schools.

3. Studies should also be done on Quality supervision skills on implementation of ICT policy in public schools.

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RESEARCH INSTRUMENT

QUESTIONNAIRE FOR ICT CHAMPION TEACHERS

SECTION A. Demographic

Generalinformation: May you please put a **tick**where applicable

1. What is your gender of the respondent? a. Male [   ]   b. Female [   ]

2. What is your age bracket?

i.   25 years and below   [ ]

ii.   Between 26 - 35 years   [ ]

iii.   Between 36 - 45 years   [ ]

iv.   46 years and above   [ ]

3. What is your experience as ICT champion teacher?

i.   Less than one year   [ ]

ii.   Between 1-5 years   [ ]

iii.   Between 6-10 years   [ ]

iv.   11 years and above   [ ]

4. For how long have you been in the current station?

i.   Less than a year   [ ]

ii.   Between 1-5 years   [ ]

iii.   Between 6-10 years   [ ]

iv.   11 years and above   [ ]

5. Have you ever trained in ICT champion?   a [YES]   b [NO]

SECTION B: Influence of communication on implementation of ICT policy in Public schools.

By use of a tick, indicate your level of agreement against the statement regarding influence of communication on implementation of ICT policy in Public primary schools using the provided scale 1-5 for guidance**: 1-Strongly Agree (SA),2- Agree (A), 3-Moderate (M), 4-Disagree, 5-StronglyDisagree (SD)**

s/n	COMMUNICATION	1	2	3	4	5
6	The head teacher effectively sensitizes teachers on ICT policy.					
7	The school has effective ICT strategies.					
8	Head teacher always informs teachers on availability of ICT materials on time					
9	Head teacher always reminds teachers on deadlines on making professional records using digital devices.					
10	Head teacher always gives teachers opportunity to share ICT challenges during staff meetings.					

SECTION C: Influence of coordination on implementation of ICT policy in Public schools

By use of a tick, indicate your level of agreement against the statement regarding influence of coordination on implementation of ICT policy in Public schools using the provided scale 1-5 for guidance**: 1-Strongly Agree (SA), 2- Agree (A), 3-Moderate (M), 4-Disagree, 5-Strongly Disagree (SD)**

s/n	Coordination	SA	A	M	D	SD
11	The school has effective timetable for ICT integrated lessons					
12	The head teacher has adequately sourced for ICT resources					
13	The school has effective training program for teachers					
14	The school has effective ICT program of activities.					
15	The head teacher always ensures filling of online data: KNEC, NEMIS, TMIS and TPAD are done on time by the teachers					

SECTION D: Influence of supervision on implementation of ICT policy in Public schools.

By use of a tick, indicate your level of agreement against the statement regarding influence of supervision on implementation of ICT policy in Public schools by using the provided scale 1-5 for guidance: **1-Strongly Agree (SA), 2- Agree (A), 3-Moderate (M), 4-Disagree, 5-Strongly Disagree (SD)**

s/n	QUALITY SUPERVISION	1	2	3	4	5
16	The head teacher carries effective lesson observation of ICT integrated lessons.					
17	The head teacher effectively endorses digitally made professional records.					
18	The head teacher effectively identifies training needs.					
19	The ICT supervision program is effectively followed in all classes					
20	The school has an effective ICT policy evaluation program in					

s/n		SA	A	M	D	SD
	place.					

By use of a tick, indicate your level of agreement against the statement regarding influence of motivation on implementation of ICT policy in Public schools using the provided scale 1-5 for guidance**: 1-Strongly Agree (SA), 2- Agree (A), 3-Moderate (M), 4-Disagree, 5-Strongly Disagree (SD)**

s/n	MOTIVATION	SA	A	M	D	SD
21	The school has an effective rewarding system for those using ICT.					
22	The head teacher always praises the teachers who use ICT in preparing professional record in a staff meeting.					
23	The head teacher recognizes the effort of teachers by giving teachers incentives.					
24	The head teacher frequently encourages teachers using ICT by giving them responsibility.					
25	The head teacher always encourages teachers to use ICTby providing a conducive ICT working environment and freedom to use ICT gadgets.					

SECTION F: Implementation of ICT policy in Public schools.

By use of a tick, indicate your level of agreement against the statement regarding implementation of ICT policy in Public schools using the scale 1-5 for guidance**: 1-Strongly Agree (SA), 2-Agree (A), 3-Moderate (M), 4-Disagree, 5-Strongly Disagree (SD)**

s/n	IMPLEMENTATION OF ICT	SA	A	M	D	SD
26	Effective utilization of ICT resources in public school is dependent on head teachers effective motivation strategies					
27	Effective digital preparation of professional record by teachers is dependent on quality supervision of ICT programs by head teacher.					
28	Maintenance of school data digitally is dependent on effective coordination of strategies of the head teacher.					
29	Integration of ICT in teaching by teachers is dependent on motivation of head teachers through training.					
30	Timely uploading of TPAD, TMIS and KNEC data is dependent on effective communication of the dead line by the head teacher.					

Appendix 1b

INTERVIEW SCHEDULE FOR HEAD TEACHERS

General information: May you please put a **tick** where applicable

1. What is your gender? a. Male [   ]   b. Female   [   ]

2. What is your age bracket?

v.   25 years and below   [ ]

vi.   Between 26 - 35 years   [ ]

vii.   Between 36 - 45 years   [ ]

viii.   46 years and above   [ ]

3. What is your experience as head teacher?

v.   Less than one year   [ ]

vi.   Between 1-5 years   [ ]

vii.   Between 6-10 years   [ ]

viii.   11 years and above   [ ]

4. For how long have you been in the current station?

v.   Less than a year   [ ]

vi.   Between 1-5 years   [ ]

vii.   Between 6-10 years   [ ]

viii.   11 years and above   [ ]

5. Have you ever trained in ICT?   [YES]   b [NO]

6. How often do you sensitize your teachers on ICT policy?

7. What ICT strategies does your school have? How effectively have they helped in ICT implementation?

8. What ICT infrastructure does your school have? Did you inform all your teachers on their availability of ICT on time?

9. How often do you remind your teachers on deadlines on making professional records using digital devices?

10. What ICT challenges do your teachers have? If so, how often do you give your teachers opportunity to share ICT challenges during staff meetings?

11. How effectively do the teachers follow the timetable for ICT lessons?

12. What mechanism have you put in place to source for ICT resources? Which ICT resources are adequate in the school?

13. What ICT training programs have you put in place? How many have trained in ICT so far?

14. What ICT programs of activities do we have in the school? How effectively are they being implemented?

15. How often do you and your teachers meet deadlines inIs the filling of online data: KNEC, NEMIS, TMIS and TPAD done by teachers?

16. How oftendo you carry out lesson observation of ICT integrated lessons?

17. When endorsing professional records, what do you do when a teacher gives you records which have not been prepared using digital devices?

18. How often in a term do you identify ICT training needs of the teachers? How effectively have you addressed the gap**?**

19. How many classes have ICT programs? How often are these programs supervised to ensure that they are followed in all classes?

20. How often do you evaluate ICT policy implementation in the school?

21. In terms of motivation, what system you do have in the school to reward those teachers using ICT? How effectively has the system in influenced ICT policy implementation?

22. How often do you recognize the effort of teachers for using ICT in preparing professional record during staff meeting?

23. What incentives do you give to teachers in recognition of their effort in using ICT and how often?

24. How often do you give responsibilities to teachers using ICT as an encouragement?

25. **How** have you made the school environment conducive and given freedom for the teachers to use ICT gadgets?

26. **As** far as implementation of ICT in the school is concerned, In your opinion, what effect does motivation strategy have on effective utilization of resources in the school?

27. In your opinion how is effective digital preparation of professional record by teachers dependent on the qualityof supervision of ICT programs by school leadership?

28. In your how does maintenance of digital school data dependent on effective coordination of strategies by school leadership?

29. **How** does Integration of ICT in teaching by teachers dependent on head teachers motivation through training?

30. How does timely uploading of TPAD, TMIS and KNEC data dependent on effective communication of the dead line by the head teacher?

Appendix ii

LIST OF SCHOOLS IN RABAI SUB COUNTY

SCHOOL NAME	M	F	T	No of head teachers	No of ICT teacher champions
BOYANI PRY	5	5	10	1	1
BWAGAMOYO	7	5	12	1	1
GANDANI	7	2	9	1	1
MAERENI	3	4	7	1	1
JEURI	8	0	8	1	1
BUNI	3	6	9	1	1
RIBE	4	5	9	1	1
CHIFERI	7	4	11	1	1
MITSAJENI	5	2	7	1	1
KANGAKAMO	1	5	6	1	1
BEDIDA	3	7	10	1	1
KAJIWE	8	18	26	1	1
MWANGUTWA	3	21	24	1	1
KAWALA	7	7	14	1	1
KINUNGUNA	6	1	7	1	1
MAKANZANI	3	6	9	1	1
PANGANI	3	4	8	1	1
MIKOMANI	7	5	14	1	1
KAILO	3	7	10	1	1

MBWAKA	2	3	5	1	1
MAKOBENI	2	5	7	1	1
MASAANI	5	3	8	1	1
TIMBONI	4	3	8	1	1
MWANDODO	3	43	16	1	1
MULEJI	4	4	8	1	1
MWANJAMA	6	3	9	1	1
MWATSAMA	9	3	12	1	1
MBUNGONI	3	6	9	1	1
BOFU	6	15	21	1	1
JIMBA	7	1	8	1	1
MALAU	1	7	8	1	1
ZIRO	4	4	8	1	1
KASIDI	7	9	16	1	1
MWELE	1	4	5	1	1
LUGWE	4	16	20	1	1
BENYOKA	5	21	26	1	1
BOHEKA	3	4	7	1	1
CHONYI	5	7	12	1	1
CHANGOMBE	5	16	21	1	1
ISAAC NYONDO	8	15	23	1	1
KANYUMBUNI	6	3	9	1	1
KAOYENI	4	4	8	1	1
VIFANJONI	6	2	8	1	1

KALIANGOMBE	9	14	23	1	1
TOTAL	**212**	**329**	**515**	**44**	**44**

Map of RabaiSubCounty, In context of Kilifi County
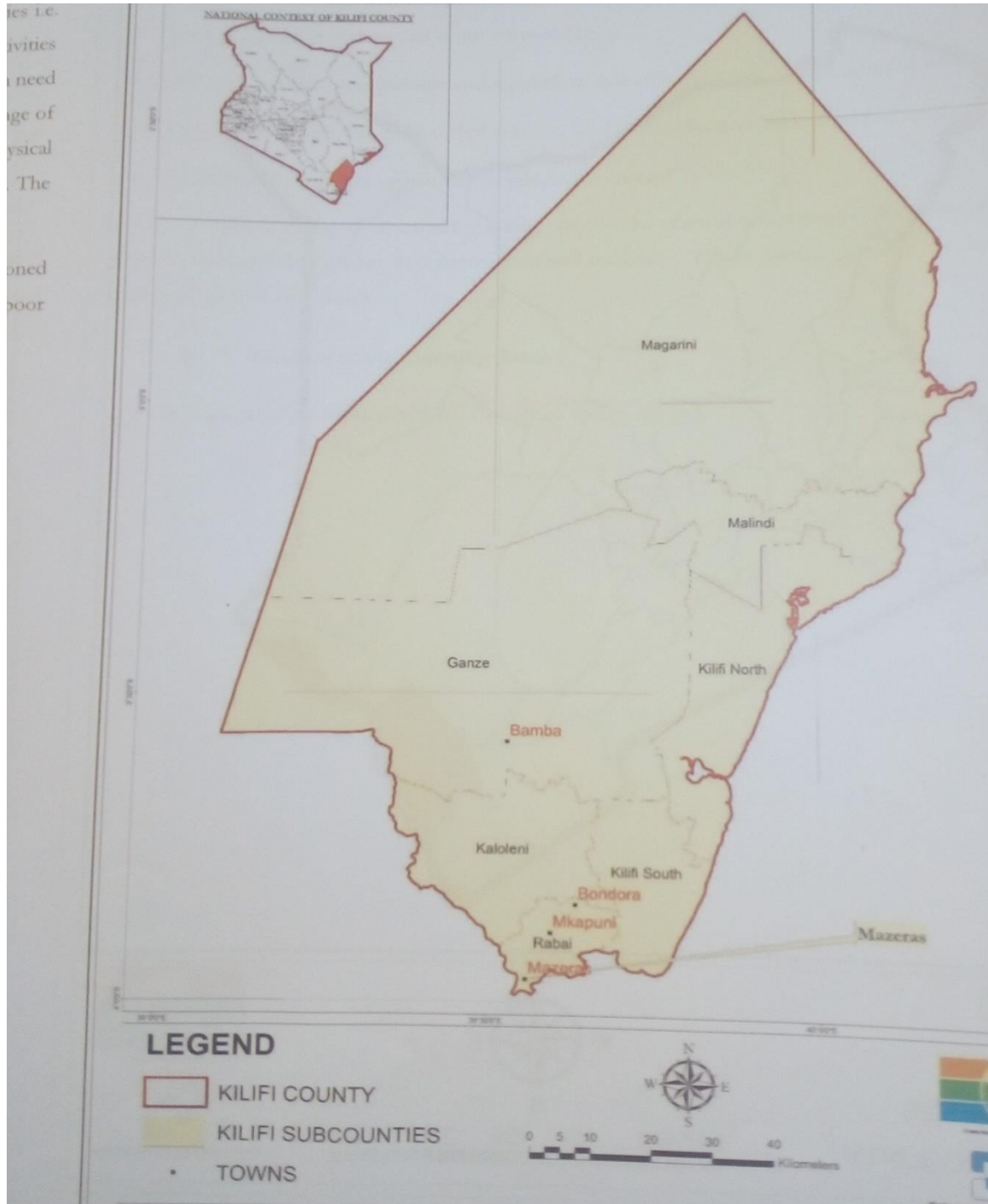
MINISTRY OF EDUCATION

State Department of Early Learning and Basic Education

KILIFI COUNTY

Telephone 041-7522432
EMAIL:cdekilificounty@yahoo.com
Fax no. 7522432
When replying/telephoning quote

County Education Office
P O Box 42 -80108
KILIFI

Ref: KLF/CDE/G10/3/ 64

21st February, 2022

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION - MWANAMOMO MWAJIRA MNEMBA

As the above subject concerns, this is to confirm to you that the above named person from Methodist University has been authorised to conduct a research on the topic the *"Influence of Head Teachers' Leadership on implementation of Information and Communication Technology in Public Primary Schools in Rabai Sub County in Kilifi County Kenya"* for the period ending *14th February, 2023.*

The authority hereby granted is to allow the Principal researcher or her assistant to access institutions of basic learning in Kilifi County for the purpose of data collection.

Any assistance accorded to her will be highly appreciated.

2 1 FEB 2022

WASAI ISAAC
FOR: COUNTY DIRECTOR OF EDUCATION
KILIFI
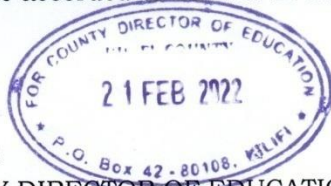
MINISTRY OF EDUCATION
(State Department of Basic Education)
RABAI SUB-COUNTY

Telegram: "EDUCATION" RABAI.
Telephone: 0723523715
Fax: 041-02000412
Email: rabaieducation@yahoo.com.
When replying please quote

Sub-County Education Office
P.O. BOX 138,
MAZERAS

Date 21ˢᵗ February, 2022

To
All Head Teachers

Dear Sir/Madam

RE: RESEARCH AUTHORIZATION- MWANAMOMO MWAJIRA MNEMBA

The above mentioned person from Methodist University has been authorized to conduct a research on the topic the *" Influence of Head teacher' Leardership on implementation of information and communication Technology in Public Primary Schools in Rabai Sub-County Kilifi County Kenya"* for the period ending **14ᵗʰ Februaury, 2023.**

The authority hereby granted is to allow the principal researcher or her assistant to access institutions basic learning in Kilifi County for the purpose of data collection.

Any assistance accorded to her will be highly appreciated.

MARIAM D. NGOME
SUB-COUNTY DIRECTOR OF EDUCATION
RABAI SUB-COUNTY

KENYA METHODIST UNIVERSITY
MOMBASA CAMPUS

P.O. Box 89983-80100, Mombasa, Kenya   Fax: 041 2495946
Tel. 0748414998   Email: services.mombasa@kemu.ac.ke

1ST February 2022

TO WHOM IT MAY CONCERN

Reg. No: EDU-3-7418-3/2013

Name: MWANAMOMO M. MNEMBA

This is to confirm that the above named person is a bona fide student of this University pursuing a **Master of Education in Educational Leadership and Management**, as part of the degree requirements the student is required to undertake research and write a thesis in the area of specialization.

The student is undertaking research on "*Influence of head teachers' leadership on implementation of information and communication technology in public primary schools in Rabai sub-county in Kilifi county - Kenya*" and is currently proceeding to collect field data.

Any assistance given towards attaining this goal will be highly appreciated.

Thank you.

Dr. Kirigia Mwenda, PhD
For Coordinator, Postgraduate Studies
Paul.kirigia@kemu.ac.ke
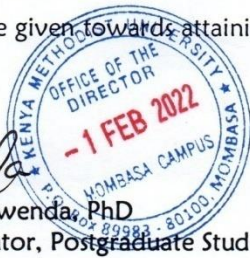
REPUBLIC OF KENYA

**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: 727342

Date of Issue: **14/February/2022**

RESEARCH LICENSE

This is to Certify that Miss.. **MWANAMOMO MWAJIRA MNEMBA** of Kenya Methodist University, has been licensed to conduct research in Kilifi on the topic: **INFLUENCE OF HEAD TEACHERS LEADERSHIP ON IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN PUBLIC PRIMARY SCHOOLS IN RABAI SUB-COUNTY IN KILIFI COUNTY - KENYA** for the period ending : **14/February/2023.**

License No: **NACOSTI/P/22/15661**

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