

**INFLUENCE OF SELECTED SCHOOL MANAGEMENT PRACTICES ON  
UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY IN  
TEACHING ACTIVITIES IN PUBLIC SECONDARY SCHOOLS IN NAKURU  
EAST SUB-COUNTY, KENYA**

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**A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University  
in Partial Fulfillment of the Requirement for the Award of Master in Education  
(Leadership and Management) Degree**

**KABARAK UNIVERSITY**

**NOVEMBER, 2024**

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## **DEDICATION**

I wish to dedicate this work to my beloved husband Jared Agisa, children: Brian Agisa, Ken Agisa and Milka Agisa for their continuous support. I also dedicate it to my fellow staff members of Upper Hill Mixed School for their patience and support during times of great apprehension and work.

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## ABSTRACT

Utilization of Information Communication Technology (ICT) in teaching activities has attracted the attention of many educators. However, utilization of ICT in education has not been successfully implemented in schools in Kenya. The purpose of this study was to investigate utilization of ICT in teaching activities in secondary schools in Nakuru East Sub-County, Kenya. This study was guided by the following objectives: to establish the influence of teacher motivation practices, teacher training practices, resource allocation practices and school policies on utilization of ICT in secondary schools in Nakuru East Sub-County, Kenya. The theoretical framework for this study was the Model of Acceptance with Peer Support (MAPS) developed by Skykes and Unified Theory of Acceptance and Use of Technology. Descriptive Survey Design was used for this study. The target population of the study was 469 teachers, 19 principals in 19 secondary schools in Nakuru East Sub-County, Kenya. Census sampling was used. 2 principals and 46 teachers were selected in the piloting of the instrument. Sample size was 423 teachers and 17 principals. Closed-ended questionnaires were employed for data collection, initially piloted in Nakuru East Sub-County, and subsequently validated by field supervisors and subject matter experts. Reliability was assessed using the test-retest method, and the constructs measured were to a great extent. The data analysis encompassed both descriptive (percentages and means) and inferential statistics, resulting in correlation and regression coefficients. The findings show a moderate positive relationship between teacher motivation practices and ICT utilization in teaching activities ( $r=0.58$ ;  $p<0.05$ ). A statistically significant relationship exists between teacher training practices and ICT use in teaching activities ( $r=0.59$ ;  $p<0.01$ ). Similarly, ICT Resource Allocation Practices correlate significantly with ICT application in teaching ( $r=0.622$ ;  $p<0.05$ ), as do school policies ( $r=0.359$ ;  $p<0.05$ ). The study recommends that to enhance ICT utilization in teaching, motivating teachers with ICT certificates and skill development is vital, alongside strengthening teacher training through seminars. Allocating ICT resources such as laptops and e-learning accessories further supports ICT use. School management should support teachers, encourage ICT resource utilization, and explore effective training methods. Providing ICT resources to teachers and schools enhances teaching activities. Developing ICT policies can reinforce teacher ICT use. This study informs school boards on improving ICT utilization, potentially enhancing teacher productivity, as well this study adhered to ethical provisions.

**Keywords:** *Teacher Motivation Practices , Teacher Training Practices, Utilization of Information, Communication Technology, Public Secondary Schools*

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

ANOVA	Analysis of Variance
CFSK	Computers for Schools in Kenya
CPD	Continuing Professional Development
G.O.K	Government of Kenya
ICT	Information and Communication Technology
ILO	International Labour Organizations
ITIL	Information Technology Infrastructure Library
KESSP	Kenya Education Sector Support Programme
MAPS	Model of Acceptance with Peer Support
MoE	Ministry of Education
NACOSTI	National Commission for Science, Technology and Innovation
OECD	Organisation for Economic Co-operation and Development
QTL	Quality Training and Learning
SPSS	Statistical Package for Social Sciences
TSC	Teachers service commission
UAEs	User Acceptance Enablers
UNESCO	United Nations Educational Scientific and Cultural Organizations
UTAUT	Unified Theory of Acceptance and Use of Technology

## **OPERATIONAL DEFINITION OF KEY TERMS**

**Education Managers:** Teachers who are the heads of Public secondary schools in Nakuru East Sub-County, Kenya.

**ICT Resources:** Computers, printers, laptops and projectors used in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**ICT Resources:** Computers, printers, laptops and projectors used in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**ICT Maintenance Practices:** Any care undertaken to avoid damage to ICT resources used in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**Public Secondary:** Secondary schools within Nakuru East Sub-County and obtain ICT resources from the Ministry of Education

**Selected School Management Practices:** Teacher motivation practices, teacher training practices, ICT resources allocation and school ICT policies in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**Teacher Motivation Practices:** Practices meant to support teachers make use of ICT resources in their schools in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**Teacher Training Practices:** Organized learning sessions for teachers that impart knowledge and skills in handling ICT resources in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**ICT Resource Allocation Practices:** How various ICT resources are provided to teachers for use in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**School ICT Policies:** Relatively permanent decisions by school management on use of ICT Resources in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya

**Utilization of ICT:** Use of Information Communication Technology resources by teachers in teaching in public secondary schools in Nakuru East Sub-County, Kenya

**Utilization of ICT:** Refers to the use of Information Communication Technology resources by teachers in teaching in public secondary schools in Nakuru East Sub-County, Kenya

# CHAPTER ONE

## INTRODUCTION

### 1.1 Overview of the Study

This chapter covers the background to the study, statement of the problem, purpose of the study, research objectives, research hypotheses and significance of the study, scope of the study, limitations and assumptions of the study.

### 1.2 Background of the Study

Understanding the crucial role of information and communication technology (ICT) in today's global economy is essential as societies navigate rapid changes. While ICT has transformed communication globally, many developing nations struggle with effective integration. In the US, education prioritizes ICT, adopting technologies like interactive whiteboards and online platforms to enhance learning (Gelacio & Comighud, 2019). Similarly, the UK emphasizes ICT in education through programs like "Computing at School," promoting digital literacy and collaborative learning (Saini, 2020). These efforts reflect a commitment to leveraging technology for educational improvement, vital for navigating the complexities of the modern world.

In China, ICT integration in education is a government priority, evident in initiatives like the "Internet Plus Education" plan, focusing on smart campus development and digital learning tools. India's National Education Policy 2020 similarly emphasizes the role of technology in expanding educational access, fostering equity, and enhancing learning quality. In India, high schools rapidly adopt ICT through initiatives like the "Digital India" campaign, facilitating digital literacy. However, challenges remain, including infrastructure gaps and the ongoing need for teacher capacity building. These efforts highlight the global recognition of ICT's transformative potential in education, despite

persistent implementation hurdles (Ministry of Education of the People's Republic of China, 2018; Government of India, Ministry of Education, 2020; Comighud & Arevalo, 2020).

The integration of ICT in education has been widely studied yet there remains no consensus on how it directly affects student performance. However, understanding the factors that influence students' use of ICT for educational purposes is crucial. A study by Silva, Rodrigues, and Miguéis (2023) explored this by analyzing data from the Program for International Student Assessment (PISA) and using a decision tree model. They found that ICT for entertainment and access to ICT at school and home significantly predict ICT use for educational purposes. Surprisingly, variables related to teaching best practices of Internet utilization at school were not significant predictors. These findings emphasize the need for context-specific measures to enhance ICT adoption in each country. It is evident that the UK prioritizes ICT integration. Policies, funding and teacher training play a crucial role. However, challenges persist, such as ensuring equitable access and addressing the digital divide.

The use of Information Communication Technology (ICT) in the school systems has greatly led to the improvement of many school activities such as in teaching methodology, their access, quality and efficiency (Singh, 2019). ICT consists of the hardware, software and media for collection, storage, processing, transmission and presentation of information and related services (Karoline & Celine, 2016). However, it emerges that in many schools and universities, classroom teaching is still dominated by traditional education that is characterized by textbooks, blackboards and chalk as well as too much talk because most teachers still do not use ICT in classroom teaching and sometimes even when the subject they teach is closely related to computer science

Dostal, Wang & Nuangchalerm, 2017).

In Asia and Pacific, Ra Chin and Lim (2016) reports that teachers do not access ICT easily in schools because these resources are very limited and unreliable to the teachers. They also attributed the cause to lack of proper school policies in use of ICT in teaching in schools. According to Olofsson, Lindberg and Fransson (2017), teachers do not have clarity on how ICT is used in teaching. They further noted that some teachers have positive attitude towards use of ICT in teaching but they refrain from using it due to low self-efficacy. These studies basically show that there is a problem in utilization of ICT resources in teaching activities in schools.

In Saudi Arabia, the learning process is greatly enhanced by making use of electronic tools and availability of other teaching resources (Tatweer, 2015). Over a quarter of the entire country's budget has been geared towards teaching and learning in education (Ministry of Finance, 2015). However, in spite of this huge investment towards education, Saudi Arabia still lags behind in use of ICT in teaching (Ageel, 2011). Al-harbi (2014) stated that the government of Saudi Arabia has to develop a working strategy that can be used specifically in teaching the use of ICT in schools. There is still a clear gap in Saudi Arabian schools between the availability and utilization of ICT in which this study tries to focus on.

In Africa, Michura (2019) pointed out that ICT improves access, quality and equity in education. Qureshi (2014) added that there is poor allocation of ICT resources to teachers because of the rising number of teachers in schools. Soe-Lin, Hecht, Schweitzer, Thomas and Kim (2014) agree that there is often a problem in utilization of ICT by teachers because these resources are very scarce compared to the teaching staff. These researchers also lamented that across Africa, teachers lack self confidence in utilization

of ICT. This could be attributed to lack of well trained teachers and low levels of teachers' competence in ICT skill and knowledge which has been recognized as major obstacle in utilization of ICT in schools. This implies that there is a problem of poor allocation of ICT resources in teaching in Africa.

Numerous studies underscore the critical influence of school management practices on the effective utilization of Information Communication Technology (ICT) in teaching activities within the Kenyan context. Contrary to conventional factors like teaching quality and class size, school management practices emerge as paramount in shaping educational outcomes (Muiruri, 2019). Crucial aspects like incentive and personnel management, leadership, supervision, and resource distribution greatly influence academic achievements, emphasizing the significance of these elements in enhancing the integration and utilization of ICT within educational contexts. Specifically, the allocation of ICT resources serves as a determinant for their utilization in teaching (Otieno, Oboko, & Kimwele, 2019). Moreover, teacher characteristics and the leadership within schools play pivotal roles in integrating ICT effectively in public secondary education (Bungey, 2016). These insights underscore the necessity for deeper exploration into the precise ways in which distinct school management practices influence the incorporation of ICT into teaching methodologies within Kenyan secondary schools.

In Kenya, the government recognizes the positive effects of ICT in education. Efforts especially by the Computer for Schools Kenya (CFSK) have not reached the intended goal as most schools have not fully integrated ICT in their teaching. The Kenyan Ministry of Education expects ICT to be widely deployed for teaching in secondary schools across Kenya (Quality Education and Training for Vision 2030). Through Sessional paper No 14 of 2012, the government requires all teachers and education

managers to be ICT literate by the year 2015 (GoK, 2014). According to Nyakowa (2014), teachers will feel comfortable in using ICT in teaching only if they are trained in basic ICT skills. Mingaine (2013) reported that secondary school teachers in Kenya do not have sufficient skills on how to integrate ICT in teaching and learning. In connection to this, the influence of school management practices on utilization of ICT in teaching activities has not been fully investigated.

In Nakuru County, Mbugua (2014) observed that the case is not different as ICT has not been effectively implemented in teaching especially in Public Secondary Schools. Education managers in some of the schools in Nakuru County offer little support in sustaining the use of ICT resources but a research done by Nyaga (2014) on integration of ICT in Nakuru North Sub-County, points out that there is lack of school ICT policies. A study by Gitonga (2013) shows that there is a problem in use of ICT resources in secondary schools in Nakuru County. However, Gitonga (2013) and Nyaga (2014) did not carry out their research on school management practices nor did they relate it to utilization of ICT resources.

From the background to this study, it is apparent that there is a problem of poor utilization of ICT by teachers in their teaching activities. While ICT continues to advance in western and Asian countries, African countries still experience a lag in its use (IST- Africa, 2018). ICT is evolving and changing the fields of knowledge very quickly. As a result of this, effective and efficient utilization of ICT is needed. When ICT is well utilized, teachers have a great potential to develop teaching skills and learners could perform extremely well. This study therefore established the influence of school management practices namely; teacher motivation, allocation of ICT resources to teachers, teacher training practices and policies on utilization of ICT.



### **1.3 Statement of the Problem**

In an ideal situation, the use of Information Communication Technology (ICT) in school systems should lead to improvements in teaching methodologies, accessibility, quality, and efficiency of education, as observed in many developed countries (Singh, 2019). While ICT continues to advance globally, there is still a significant lag in its use in African countries like Kenya (IST-Africa, 2016, 2018). Effective utilization of ICT is crucial for enhancing teaching skills, improving learner performance, and ultimately, the quality of education. Understanding how school management practices influence ICT utilization is essential for addressing the persistent problem of underutilization of ICT resources in teaching activities in Nakuru East Sub-County, Kenya, and similar contexts.

The National Education Sector Plan (NESSP) 2018-2022, acknowledges ICT as a priority area to achieve Sustainable Development Goal (SDG) No 4. Information and Communication Technology (ICT) in the education sector has been mainstreamed in both curriculum delivery and education management. The policy on information and communication technology in education and training gives a framework to make ICT have an impact in bridging the digital divide and be used as a tool for curriculum delivery and education management (Ministry of Education, 2021).

However, in Nakuru East Sub- County, Kenya, the utilization of ICT in teaching activities has remained low, this is despite of government efforts to provide ICT policies and resources (Gitonga, 2013). Only 14 out of 19 schools in Nakuru East Sub-County possess ICT resources, but these resources are not effectively utilized, leading to reduced productivity and academic performance (County Director TSC Nakuru, 2019). This deviation from the ideal situation is evident in the limited knowledge and skills of teachers in utilizing ICT for teaching (Mingaine, 2013; Mutwiri, Kafwa & Kyalo, 2017).

Teachers often rely on traditional teaching methods, and the potential benefits of ICT in education remain untapped. Moreover, there is a lack of clarity on how to effectively integrate ICT into teaching activities (Olofsson, Lindberg, & Fransson, 2017), and teachers' self-confidence in utilizing ICT is low due to inadequate training and support (Soe-Lin et al., 2014). The influence of school management practices, such as teacher motivation, ICT resource allocation, teacher training, and school ICT policies, on the utilization of ICT in teaching activities has not been comprehensively investigated in Nakuru East Sub-County. Though some of these studies reveal poor utilisation of ICT, they did not relate it to school management practices hence the need for this study in public secondary schools in Nakuru East Sub-County, Kenya.

#### **1.4 Purpose of the Study**

The purpose of this study was to establish the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

#### **1.5 Research Objectives**

The following objectives guided this study;

- i. To establish the influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.
- ii. To determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-county, Kenya.

- iii. To examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.
- iv. To investigate the influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

### **1.6 Research Hypotheses**

The following hypotheses guided this study

- H<sub>0</sub>1: There is no statistically significant relationship between teacher motivation practices and utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.
- H<sub>0</sub>2: There is no statistically significant relationship between teacher training practices and utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.
- H<sub>0</sub>3: There is no statistically significant relationship between ICT resource allocation practices and utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.
- H<sub>0</sub>4: There is no statistically significant relationship between school ICT policies and utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub- County, Kenya.

### **1.7 Significance of the Study**

This study focused on the selected school management practices influencing the utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. The findings of this study could

enable teachers to improve on utilization of ICT which would enhance their productivity. The educational planners and policy makers could use the findings of this study as a basis for revising the current ICT policies in schools. This study could also add data and literature to the existing body of knowledge on utilization of ICT resources and also make recommendations for other areas of research.

### **1.8 Scope of the Study**

This study only focused on the selected school management practices which could influence the utilization of Information Communication Technology by teachers in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. There are many school management practices but in this study only four were studied because literature showed that they had a great influence on the use of ICT in teaching in schools.

### **1.9 Limitation of the Study**

The study relied heavily on questionnaires as data collection instruments. Questionnaires cannot be explained to respondents and can be misinterpreted by the respondents. The researcher made sure that the questionnaires were well constructed, reliable, and easy to respond to by the respondents. Validation of the instrument was done to ensure its reliability.

### **1.10 Delimitations of the Study**

This study focused specifically on public secondary schools located within Nakuru East Sub-County, Kenya. Therefore, findings and conclusions may not be generalizable to schools in other regions or countries. The data collection and analysis are limited to a specific time frame.

Any changes or developments in teacher motivation practices, training practices, ICT resource allocation practices, and school ICT policies occurring outside this time frame are not considered in the study. The study relies on self-reported data from teachers and school administrators regarding their practices and perceptions related to teacher motivation, training, ICT resource allocation, and school ICT policies. Thus, the findings are subject to potential biases, such as social desirability bias or recall bias, inherent in self-report measures. Additionally, the study's cross-sectional design limits the ability to establish causality between variables.

### **1.11. Assumption of the Study**

It was assumed that:

- i. Teachers in Nakuru East Sub-County secondary schools shall voluntarily give correct and honest information for the purpose of this study. This assumption was based on the belief that the participating teachers would willingly and truthfully share their insights and experiences related to the utilization of ICT in teaching activities, thereby contributing to the validity and reliability of the research findings. It was anticipated that the teachers' willingness to participate and provide genuine responses would help ensure the integrity of the study's data and its subsequent analysis.
- ii. Teacher motivation practices in public secondary schools in Nakuru East Sub-County, Kenya, had a prior influence on the utilization of ICT in teaching activities. This assumption suggested that the level of motivation and incentives provided to teachers in the past may have impacted their willingness and enthusiasm to incorporate ICT in their teaching methods.

- iii. Teacher training practices in public secondary schools in Nakuru East Sub- County, Kenya, had previously influenced the utilization of ICT in teaching activities. This implied that the quality and extent of training provided to teachers in the past might have played a role in their ability and competence to effectively integrate ICT tools and resources into their teaching practices.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This research aimed to find out the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. This chapter presented a review of related literature by different scholars and researchers and their relevance to the study, the theory guiding research and the conceptual framework.

#### **2.2 Theoretical Framework**

##### **2.2.1 Model of Acceptance with Peer Support**

This study adopts the Model of Acceptance with Peer Support (MAPS). This model was developed by Skykes (2009). The model focuses on individuals on social network. The authors proposed that there are two types of social ties. The first social tie is between the teachers obtaining help from each other in terms of using ICT in teaching. They further explained that when this social tie takes place it results in extension of skills and knowledge in handling and using ICT in teaching (Sykes, Venkatesh & Gosain, 2009).

The second kind of tie is between employees and their employers. The employers should provide assistance and help to their employees and deployment of ICT resources in schools. These ties are labelled as "get-help" and "give help" ties meaning that the employers give help to their employees who are the teachers.

The Model of Acceptance with Peer Support (MAPS) provides a valuable framework to support a study on the influence of selected school management practices on the utilization of Information Communication Technology (ICT) in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. MAPS is based on the

premise that individuals are more likely to accept and adopt new technologies when they receive support and encouragement from their peers within a social context. This model aligns well with the study's objectives, particularly in the context of teachers and school management practices related to ICT integration.

With respect to the study's objective to establish the influence of teacher motivation practices on ICT utilization, MAPS can be applied by assessing how peer support networks and motivation practices interact. For instance, the study can explore how teachers who receive peer support and recognition for their ICT integration efforts are more motivated to continue using technology in their teaching. This can help identify effective motivation strategies that involve peer encouragement, such as recognition programs or collaborative ICT training sessions. In relation to determining the influence of teacher training practices on ICT utilization, MAPS can be employed to examine the role of peer support in training initiatives. Teachers who receive training with peer support systems in place may be more likely to apply their newly acquired ICT skills in the classroom. The study investigated whether teachers who have access to peer mentorship or coaching during their training are more successful in integrating ICT into their teaching activities.

The MAPS framework adds depth to the study by highlighting the importance of peer interactions and support in the context of school management practices and ICT utilization. It underscores the significance of creating a supportive social environment within schools to encourage teachers to embrace and effectively implement technology in their teaching activities. By incorporating the MAPS model into the study's design and analysis, it can yield insights into how peer support can enhance the influence of selected school management practices on ICT integration in Nakuru East Sub-County's public



secondary schools.

The Model of Acceptance with Peer Support (MAPS) offers strengths in understanding the influence of teacher motivation practices and teacher training practices on the utilization of ICT in teaching activities. This model emphasizes the role of peer support in facilitating acceptance and adoption of new technologies, such as ICT, within educational settings. Variables addressed by MAPS include teacher motivation practices and teacher training practices, which are crucial determinants of technology acceptance and utilization. By considering the influence of peer support on teachers' attitudes and behaviors towards ICT integration, MAPS provides a comprehensive framework for examining how social interactions and support systems contribute to the effective utilization of ICT in teaching activities. This theoretical approach aligns well with research objectives 1 and 2, as it enables the exploration of factors influencing teachers' motivation and training in relation to ICT utilization in public secondary schools in Nakuru East Sub-County, Kenya.

However, a weakness of MAPS lies in its limited focus on organizational factors and resource allocation practices, which are also important determinants of ICT utilization in educational settings. For research objectives 3 and 4, which aim to examine the influence of ICT resource allocation practices and school ICT policies on ICT utilization, a broader theoretical framework that incorporates organizational theories may be more appropriate. Additionally, while MAPS emphasizes the role of peer support, it may overlook other contextual factors that influence technology adoption, such as leadership support, infrastructure availability, and policy frameworks. Therefore, researchers employing MAPS should consider complementing it with other theoretical perspectives to ensure a comprehensive understanding of the factors influencing ICT utilization in teaching

activities in public secondary schools in Nakuru East Sub-County, Kenya.

### **2.2.2 Unified Theory of Acceptance and Use of Technology**

Unified Theory of Acceptance and Use of Technology (UTAUT) was formulated by Venkatesh et al (2003). UTAUT has been used and applied by many educational institutions to assess the employee attitudes towards accepting the use of ICT in teaching. Regardless of the level of available ICT resources and support from the administration, there is a concern as to whether teachers are prepared to use ICT in their work. The theory consists of four main concepts. Performance expectancy: This refers to the degree to which an individual believes that using the system will help him or her utilize it. Effort expectancy: This refers to the degree of use of the system. Social influence: it refers to the degree to which an individual perceives that he or she should utilise the new system in teaching. Facilitating conditions: this refers to the technical support given to teachers by the education managers in using ICT resources in teaching.

The theory has been used by Alshehri (2013), in determining factors affecting and use of E-government services in the Kingdom of Saudi Arabia. It has been also used by Marikyan and Papagiannidis (2023) to analyze students ICT adoption. The two theories (Model of Acceptance with Peer Support (MAPS) and UTAUT theories) have been used in this study because the Model of Acceptance with Peer Support (MAPS) theory only shows the deployment, handling and use of ICT in schools. It therefore does not show management practices are utilized using ICT in teaching activities.

Venkatesh (2003) explained that the UTAUT theory enables the employee to accept the use of ICT in teaching and at the same time get support from the school managers. The employee therefore should accept to use ICT resources in teaching because it improves teaching activities. They should also use ICT resources because they get support and

motivation from the administration. This theory is also applied in education basing on the fact that teachers who use ICT in teaching are promoted to various job groups or given other responsibilities within the ministry which are on a higher rank than their previous positions. This theory therefore shows how utilization of ICT in teaching activities is used.

The theory is highly relevant in supporting a study on the influence of selected school management practices on the utilization of Information Communication Technology (ICT) in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. UTAUT provides a comprehensive framework for understanding and predicting individuals' technology acceptance and usage behavior. In this study, UTAUT can help in analyzing and explaining how various school management practices influence teachers' willingness to accept and use ICT in their teaching activities. The objective of establishing the influence of teacher motivation practices aligns with the UTAUT constructs of Performance Expectancy and Effort Expectancy. Performance Expectancy refers to the degree to which an individual believes that using technology will help them perform better, while Effort Expectancy relates to the perceived ease of using technology. UTAUT suggests that if teachers perceive that using ICT will improve their teaching performance (Performance Expectancy) and find it easy to use (Effort Expectancy), they are more likely to accept and utilize ICT in teaching. Therefore, by examining teacher motivation practices, the study can assess how these practices affect teachers' perceptions of the benefits and ease of using ICT in their teaching activities.

The objective of determining the influence of teacher training practices is closely connected to the UTAUT construct of Facilitating Conditions. Facilitating Conditions refer to the extent to which individuals perceive that the necessary reso

urces and support are available for using technology effectively. In this case, teacher training practices can be seen as a facilitating condition. According to UTAUT, if teachers receive adequate training and support, they are more likely to accept and use ICT. Therefore, by investigating teacher training practices, the study can assess how these practices influence teachers' perceptions of the availability of resources and support for ICT utilization, as well as their willingness to integrate ICT into their teaching.

The UTAUT provides a solid theoretical foundation for understanding how school management practices, such as teacher motivation practices and teacher training practices, can impact teachers' acceptance and utilization of ICT in teaching activities in Nakuru East Sub-County, Kenya. The theory helps in identifying key factors that influence technology adoption and can guide the development of strategies and interventions to promote effective ICT integration in education. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a widely used theoretical framework in understanding technology adoption and usage behaviors. One of its strengths lies in its comprehensive nature, as it integrates various determinants of technology acceptance into a single model. UTAUT addresses key variables such as performance expectancy, effort expectancy, social influence, and facilitating conditions, providing a holistic view of factors influencing technology utilization (Venkatesh et al., 2003).

This allows researchers to examine multiple dimensions that may impact the adoption of ICT in teaching activities, offering a robust framework for understanding teacher behavior in relation to technology integration. However, a weakness of UTAUT is its generalizability across different contexts. While the model provides valuable insights into technology adoption, its applicability may vary depending on cultural, organizational, and individual factors. In the context of public secondary schools in

Nakuru East Sub-County, Kenya, cultural and institutional nuances may influence the relevance and effectiveness of UTAUT in predicting teacher behavior towards ICT utilization.

In the context of the research objectives outlined for this study, UTAUT addresses several relevant variables. Specifically, it provides insights into the influence of teacher motivation practices (effort expectancy), teacher training practices (facilitating conditions), ICT resource allocation practices (facilitating conditions), and school ICT policies (social influence) on the utilization of ICT in teaching activities. By considering these variables within the UTAUT framework, researchers can assess the interplay between individual motivations, external influences, and contextual factors in shaping teacher behavior towards ICT adoption. However, while UTAUT offers a comprehensive framework for understanding technology acceptance, it may overlook certain context-specific variables that could be critical in the educational setting, such as teacher attitudes towards technology, institutional support, and infrastructure readiness. Therefore, while UTAUT provides a valuable starting point for investigating technology adoption in schools, researchers may need to supplement it with additional theories or frameworks to capture the full complexity of ICT utilization in public secondary schools in Nakuru East Sub-County, Kenya.

## **2.3 Empirical Literature Review**

### **2.3.1 Use of Information Communication Technology in Schools**

ICT is used as a synonym for computers and computer networks (Chen, Kapoor, & Bhatia, 2016). It is widely used across the globe with the intention to improve the quality of education (Tosuntas, Karadag & Orhan, 2015). According to Makanda (2015), the use of ICT in teaching by teachers, raises the interest of the learners in the process of

learning. The use of ICT in teaching therefore affects teaching approaches such as collaborative learning and activity learning (Makanda, 2015). According to Kamau (2014), the use of ICT in education improves teaching and learning at all levels of education.

The integration of Information Communication Technology (ICT) in schools has seen significant advancements in Europe. Countries like Finland have been at the forefront of this transformation. The Finnish education system, often regarded as one of the best in the world, has embraced ICT to enhance teaching and learning. Finnish schools utilize digital tools and platforms for personalized learning experiences, and teachers are well- trained in ICT integration (Sahlberg, 2020).

Additionally, countries like Estonia have made ICT literacy a fundamental part of their education curriculum, ensuring that students acquire digital skills early on (Kala & Chaubey, 2022).

Across the Americas, the use of ICT in schools varies but has been on the rise. In the United States, initiatives like the "Digital Promise" aim to enhance the integration of technology in education (Digital Promise, 2020). Similarly, Canada has made substantial investments in ICT infrastructure for schools and has adopted innovative digital learning strategies (Government of Canada, 2019). In Latin America, countries like Uruguay have implemented the "Plan Ceibal," providing laptops and internet access to students, transforming the way education is delivered (Mateu, Cobo & Moravec, 2018).

According to Comi, et al (2017), existing evidence demonstrates that teachers' beliefs about the use of ICT teaching and learning affect the frequency of ICT use in schools more than the availability of school infrastructures. ICT has been widely used to meet the needs of teachers in teaching. ICT helps teachers to be creative in improving the quality

of teaching and lesson presentation (Peeraer & VanPetegem, 2013). The use of ICT in most schools is regarded as a driving force in teaching and learning (Tarus, Gichoya & Muumbo, 2015).

Most educational institutions strive to provide the latest technologies to schools to provide better learning opportunities to learners (Mihai, 2017). Availability of ICT in schools assists in the transformation from traditional way of teaching in education to e-learning (Tobail, Crowe & Arisha, 2016). However ICT has been widely used in teaching, but the influence of it on management has not been discussed. Despite its huge role in teaching, teachers still experience the need for their availability for their purpose to be met effectively.

Countries across Asia have made significant strides in leveraging ICT for education. Singapore, for example, Singapore has been a pioneer in using ICT to enhance teaching and learning. According to Smart Nation Singapore (2019), the "Singapore Smart Nation" initiative includes various programs to equip schools with cutting-edge technology, support digital literacy, and train teachers in ICT integration. In India, the "Digital India" campaign has also led to the integration of ICT in education, with efforts to provide digital resources and connectivity to schools (Government of India, 2019). Additionally, countries like Japan have embraced technology to address challenges in education, such as teacher shortages and rural education access (Iwabuchi, Hodama, Onishi, Miyazaki, Nakae & Suzuki, 2022).

In Bangladesh, the government has emphasized the use of ICT in all sectors including education and this has not been achieved well due to poverty (Major & Francis, 2020). ICT resources are very scarce in many schools in Bangladesh hence many teachers are not able to make appropriate use of them while others are not willing to try because of

anxiety, lack of interest and lack of motivation (Khan & Hasan, 2013). Teacher attitudes, beliefs, adequacy and skills affect successful use of ICT in schools in Bangladesh (Hennessy, 2010). These studies attempt to explain why ICT is rarely used in Bangladesh and is not connected to school management practices.

In many African countries, the adoption of ICT in schools has been steadily increasing. For example, the Department of Basic Education South Africa, (2019) reported that South Africa has made efforts to bridge the digital divide in education by providing connectivity to underserved schools. Similarly, the Rwanda Education Board (2021) revealed that Rwanda has implemented the "Smart Classrooms" program, equipping classrooms with ICT infrastructure and digital content to enhance the quality of education.

In Liberia, Chigona, & Davids (2014), posits that ICT enables collaboration and sharing of power between teachers and head teachers. In South Africa, the government continues to invest in ICT in education despite a very slow pace in uptake of ICT (Tiba et al, 2016). Wells (2012), reports that teachers who have knowledge in ICT are able to carry out school activities effectively. In Namibia, Dzidonu (2010) established that teachers report higher class attendance as a result of ICT programs. The researcher further says that the effective use of ICT requires its availability and proper maintenance. However, in order to improve and make optimal use of ICT, there had to be ICT integration in teacher training which also accompanied by teacher motivation practices (Flanagan & Jacobsen, 2013). It can be pointed out that ICT are very useful in schools but their usefulness are not related to their utilization in management.

The Ministry of Education, Science and Technology Kenya (2021) revealed that, initiatives like the "Digital Literacy Program" have aimed to provide laptops to primary



school students and train teachers in ICT skills. In Kenya, Mbugua, Kiboss & Tanui (2015) assert that the use of ICT resources results in improvement of academic performance in schools. Some teachers find the use of ICT a wishful thinking because of the gap between the positive impact in the use of ICT in education and the reality. Thomas (2010) argues that some schools are well equipped with ICT resources but have very little impact on teaching and learning. It is clear that some schools have ICT resources but do not utilize them in teaching.

In Nakuru County, ICT has played a central role in improving teaching and learning in light of educational reforms (Njoroge, Ngugi & Kinzi, 2017). However, lack of competence has contributed to difficulty in use of ICT by the teachers. But when teachers use ICT in teaching, presentations became visual and auditory in addition to using software programs like power point (Al-Faki & Khamis, 2014). It is clear that teachers use ICT in teaching but these studies did not connect utilization of ICT to teacher management practices. This study focuses on the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

### **2.3.2 Role of Education Managers in Enhancing use of ICT in schools**

According to Eurydice (2020), the European network for education, education systems across Europe have been emphasizing the importance of digital skills and digital literacy in the curriculum. Education managers are responsible for implementing policies that integrate ICT into teaching and learning (Eurydice, 2020). They also oversee the allocation of resources for technology infrastructure and teacher training (European Commission, 2018). This emphasis on ICT integration has been particularly important in European countries to ensure that students are prepared for the digital age.

The European Commission's Digital Education Action Plan 2021-2027 outlines strategies for digital education, including the role of education managers in promoting digital literacy, teacher training, and the integration of ICT in curricula (European Commission, 2020). Education managers in countries like Finland have been recognized for their efforts to create a supportive environment for ICT integration by providing teachers with freedom, independence, self-governance and resources (Manninen, Sointu, & Olakivi, 2019). These initiatives highlight the ongoing commitment to leveraging technology for education in European countries.

In the United States, education managers have been actively promoting the use of ICT in schools. The U.S. Department of Education has outlined a National Education Technology Plan that emphasizes the role of education managers in ensuring that technology is integrated into classrooms to enhance teaching and learning (U.S. Department of Education, 2017). Education managers are responsible for implementing policies and initiatives aimed at improving digital access, equity, and inclusion in American schools (Shah, Sclafani, & Horgen, 2019). Educational managers work to provide resources, professional development, and support for teachers to effectively use ICT tools in their teaching practices.

In Singapore, the Ministry of Education has been actively promoting the use of technology in classrooms through initiatives such as the "Teach Less, Learn More" program (Ministry of Education Singapore, 2019). Education managers in countries like South Korea and Japan have also been investing in infrastructure and teacher training to enhance ICT use in schools (Kang & Rha, 2018; Nii, 2018). Their efforts reflect a commitment to preparing students for a technology-driven future.

According to Zuckerberg (2021), the COVID-19 pandemic highlighted the need for such

efforts, with education managers working to provide devices and internet access to underserved communities. Initiatives like the Federal Communication Commission's Emergency Broadband Benefit Program underscore the role of education managers in addressing connectivity issues (Federal Communications Commission, 2021). Education managers are also exploring innovative solutions, such as mobile learning and digital content, to enhance the impact of ICT in American schools (Hodges et al., 2020).

According to a survey by Wang & Huang (2020) In China, education managers have been expanding the use of online platforms for remote learning, especially during the COVID-19 pandemic. Japan has been emphasizing the use of ICT to foster creativity and critical thinking skills in students (Organization for Economic Co-operation and Development (OECD), 2019). Education managers in India are working on initiatives like the National Education Policy 2020, which envisions a technology-enabled education system (Government of India, 2020). The role of education managers in promoting ICT- driven education remains crucial across Asia.

According to Sarkar (2012), education managers support the use of ICT in schools by providing ICT resources to teachers. Education managers also provide ways of implementing, evaluating processes and tools that enhances learning (Trucano, 2017). In addition, they encourage and give advice to teachers who are using ICT. Ssekakubo, Suleman & Marsden (2011) reports that this supporting and encouraging role is a key source of advice to the school in making decisions related to ICT use in schools. A successful ICT use is related to actions taken at the school level, such as the development of an ICT plan, ICT support, and ICT training (Tondeur, Van Keer, Valcke & van Braak, 2012). The role of education mangers in supporting teachers to use ICT in teaching and learning is therefore very important (Price Waterhouse Coopers, 2010). Rebecca &

Marshall (2012) added that the major role of education managers is to initiate and implement school change. Education managers also take the right decisions to support ICT integration into pedagogical practices (Tedla, 2012).

The African Union's Digital Transformation Strategy for Africa underscores the importance of education managers in implementing ICT initiatives (African Union, 2020). Research by Alaba and Oyekanmi (2020) revealed that Education managers in Nigeria have been involved in efforts to provide tablets to teachers and students in some states. Collaboration with international partners and organizations, such as the World Bank, continues to play a significant role in supporting ICT initiatives in African education (World Bank, 2018). Education managers in Africa are actively seeking solutions to bridge the digital divide and enhance ICT utilization in schools.

The African Union's Agenda 2063 emphasizes the role of technology in achieving quality education (African Union, 2015). Education managers in countries like Kenya have been working to develop policies and strategies for ICT integration in schools (Ministry of Education Kenya, 2018). They are also collaborating with international organizations to secure funding and resources for technology infrastructure (UNESCO, 2018). Education managers in Africa are increasingly aware of the potential of ICT to bridge educational gaps and improve learning outcomes on the continent.

Kundi & Nawaz (2014) infer that education managers encourage principals to know how ICT are used in schools. They added that knowledge about the different stages that teachers go through in the implementation of ICT in education is very important. Kipsoi, Changach & Sang (2013) says that being aware of the process helps education managers develop the right strategies to support teachers. Khan (2012) mentioned that the best practices on use of ICT must be shared regularly to encourage more and more teachers to

integrate ICT in their lessons. It is clear that education managers support and encourage use of ICT in schools and especially in teaching but do not further their roles to ICT utilization in schools hence the need for this research.

## **2.4 Teacher Motivation Practices and Utilization of Information Communication Technology**

Krasniqi and Kastrati (2018) in Kosovo found that teacher motivation, including recognition and rewards for integrating ICT positively influenced the use of technology in classrooms. Additionally, a study in Hungary by Bako, Veress, and Fulop (2019) indicated that teachers who received proper incentives and support were more likely to incorporate ICT effectively in their teaching. However, challenges related to the motivation of teachers to adopt ICT in education persist in some European countries, as reported by Zainaddin, Acilar, and Rezai (2020) in their study in Turkey, where motivational factors varied among teachers and influenced their ICT integration differently.

Research in India by Sultana and Hussain (2020) found that teacher motivation, especially through rewards and recognition, played a significant role in encouraging teachers to incorporate ICT tools in their teaching practices. Similarly, a study in Malaysia by Awan and Yusof (2018) highlighted the positive influence of teacher motivation on the adoption of e-learning technologies in higher education. However, challenges related to teacher motivation and ICT utilization have been reported in countries like Pakistan, where a lack of incentives and support hindered effective integration (Bhatti & Naseer, 2019). Research in India (Sultana & Hussain, 2020) and Malaysia (Awan & Yusof, 2018) underscores the significant role of teacher motivation, particularly through rewards and recognition, in encouraging the use of ICT tools in

teaching. Nonetheless, challenges concerning teacher motivation and ICT utilization have been reported in countries such as Pakistan, where a lack of incentives and support hampers effective integration (Bhatti & Naseer, 2019).

Motivation is an important factor that influences teachers to use ICT in teaching. Teachers play a crucial role in teaching yet in most parts of the world they are poorly motivated (Afshari, Bakar, Luan, Samah & Fooi, 2017). Al-Faki & Khamis (2014) observed that the salaries of teachers in United States are generally lower than those offered to other college graduates. The motivational factors related to the use of ICT are the availability of ICT resources in schools and whether teachers perceive its usage as positive.

These strategies are effective for providing support to teachers in using ICT in their schools. Secondary school teachers are poorly motivated in Sub-Saharan Africa (Chen et al, 2016). A wider success among teachers may be achieved if ample support and time to learn the technology are provided to them. An academic and provision of good working conditions should exist in order to encourage teachers have a positive attitude towards use of ICT. In Nigeria, Adomi and Kpangban (2018) found that teacher motivation through incentives and professional development positively influenced the integration of ICT in higher education institutions. However, challenges persist in some African nations, such as Ghana, where inadequate resources and support for teachers have hindered effective ICT utilization in schools (Dzandza, 2019).

A study conducted in Kenya by Otieno, Oboko, and Kimwele (2019) emphasized the importance of teacher motivation, including training opportunities and recognition, in enhancing the use of ICT in secondary schools. Laaria (2013) reports that teachers need to be motivated so that they can actively use ICT in teaching. The principals should also

provide support to teachers for them to feel confident in using ICT. According to Mbugua et al (2015), motivational practices include, offering teachers professional support such as training, teacher guide books and resource books. It is clear that teachers are motivated when they use ICT but these studies did not relate teacher motivation practices to utilization of ICT.

Mbugua et al (2015) reported that in Nakuru County, teachers expect financial and non-financial rewards when they use ICT in teaching. In the absence of equitable pay and recognition, teachers get dissatisfied and do not perform to the standards from what they have done. He added that this is attributed to the knowledge and skills that teachers have and performance they exhibit. Teachers are also motivated according to the quality of teaching and learning they offer to students. This involves the knowledge and skills teachers have pertaining ICT, what students are learning and at what rate they are making progress. From these studies motivation of teachers is the key factor to use of ICT in schools. On the other hand, the unavailability of ICT resources limits teachers to be motivated. This study intended to relate utilization of ICT to motivation as a school management practice which has not been captured and discussed fully by the researchers above.

#### **2.4.1 Role of Education Managers in Motivating Teachers to Utilize ICT**

The main role of education managers is to check on whether teachers are using ICT in teaching. Venkatesh, Morris & Davis (2003) researched on what is called User Acceptance Enablers (UAEs). These enablers affect the acceptance of the user to use ICT in teaching. Therefore, UAEs have a positive influence on intrinsic motivation of the user (Venkatesh et al, 2003). The education managers should make sure that a school with ICT is well organized and should be in a position to provide good resources and

support to teachers for them to use ICT resources in teaching. The researchers looked at motivation in relation to ICT use but did not relate it to management.

Ssekakubo et al (2011) established that one of the motivating factors is providing teachers with laptops. Tomei (2011) added that collaborative relationships among teachers are considered as highly motivating factors. Money reward in different forms like better salaries could be an important motivator for teachers to use ICT. Although Demeke (2014) argues that teachers differ in their needs and interests, the school head teachers should therefore use different motivational models to encourage all teachers to use ICT in teaching. However, these findings in the literature reviewed cannot be directly generalized to a study on the influence of teacher motivation practices on ICT utilization in public secondary schools in Nakuru East Sub-County, Kenya. The gap in the literature becomes evident due to the contextual differences between these studies and the proposed research. Factors such as cultural, socio-economic, and institutional contexts vary significantly between countries, influencing the motivational dynamics of teachers and their utilization of ICT.

Furthermore, while motivation is recognized as a crucial factor in encouraging teachers to use ICT in teaching globally (Afshari et al., 2017), the specific motivational factors and challenges faced by teachers in Nakuru East Sub-County may differ from those observed in other regions. Additionally, disparities in resource allocation, infrastructure, and educational policies between countries contribute to varying levels of ICT integration in teaching practices. Therefore, to effectively understand the influence of teacher motivation practices on ICT utilization in Nakuru East Sub-County, Kenya, it is essential to conduct context-specific research that considers the unique challenges and dynamics within the local educational environment. This will ensure that interventions



and strategies aimed at enhancing teacher motivation and promoting ICT integration are tailored to address the specific needs and circumstances of the region.

## **2.5 Teacher Training Practices and Utilization of Information Communication Technology**

In Singapore, effective teacher training practices play a crucial role in maximizing the utilization of Information Communication Technology (ICT) in education. Together with Thailand and Azerbaijan, the rates at which teachers have been trained stand at 100%, 88% and 73% respectively. Teachers attend seminars and workshops to be trained in use of ICT. Teacher training is seen as the key driver for the successful usage of ICT in education (Sang, Valcke, Van Braak, & Tondeur, 2017). Rhema and Miliszewska (2016) noted that teachers have the confidence to use ICT because they have been trained in using it. Their study revealed that there are so many training options that helps teachers achieve more than they thought impossible. Continued teacher training like e-learning and blended learning are essential for better management in schools (Sahoo & Mishra, 2012). It is clear that teachers are trained to use ICT only for teaching but not for other tasks.

In the Philippines and Myanmar, only 2% of teachers have been trained to use ICT (Trucano, 2017). Tondeur (2015) reported that ICT training has an important influence on how it is used in schools. According to Watson & Watson (2011), the most effective teacher training practices are hands-on on ICT use. The use of ICT in teaching and learning has been seen to be very important compared to using them in performing other duties. From these studies it is clear that a smaller percentage of teachers have undergone ICT training. Nevertheless, low percentage it is, they embrace it only in teaching and learning and not in performing other duties (Khan, 2012).

In France, Resnick (2012) observed that the most effective way to use ICT in schools is to offer support to teachers who have knowledge in ICT. The trained teacher should be willing to share the new knowledge and skills with the other teachers when they return. One-off training is not sufficient and therefore teachers require extensive and on-going exposure to ICT to be able to evaluate and select the most appropriate resources (Sharma & Shivanibindal, 2013). Teachers attend symposia to enable them have broad expertise in using ICT in their teaching.

In the western parts of Africa, ICT is applicable to both open and distance learning. Sarkar (2012) found that teachers are satisfied with their ways of teaching. In order for teachers to improve in the school performance, training in use of ICT is paramount. Teachers attend government sponsored programmes to be trained in using ICT in teaching. Therefore if teachers see no need to be trained, they may not accept the use of ICT in their teaching (Vegas, 2015). It is pointed out that teachers need to be given another chance of training since they have not had enough in using ICT. Therefore, utilization of ICT is still a problem and it is not related to management practices.

In Kenya, a study by Omariba, Ayot & Ondigi (2016) showed that lack of teacher training contributes to poor use of ICT in teaching in schools. Kipsoi et al (2013) stated that most reforms in secondary schools fail because of flawed utilization of ICT resources. Mbugua (2014) noted that many teachers do not have the necessary IT skills and feel uncomfortable in its use. Waweru, (2016) explains that teachers do not have the specific training needed to utilize ICT. These studies reveal that poor utilization of ICT in Kenya is due to lack of skills and training.

In Nakuru County, (Waweru, 2016) observed that many teachers do not make use of ICT in teaching yet these resources are available in their schools. In motivating teachers

to utilize ICT, education managers play a crucial role, particularly considering the challenges many teachers face, such as overcrowded classrooms and limited access to ICT resources, which hinder effective integration of technology into teaching practices. Many teachers do not have the necessary ICT skills and feel uncomfortable and do not have the specific training needed to utilize ICT. Very few teachers attend government ICT training programmes while some schools organize training of staff in use of ICT. In connection to the above discussion, a study on utilization of ICT on management practices needed to be carried out in order to bridge a gap between the teacher ICT skills and selected management practices in schools.

### **2.5.1 Role of Education Managers in Providing Training Opportunities on Use of ICT**

Watson and Watson (2011) states that education managers plan training programmes for teachers by providing all the necessary ICT facilities for the training. Training involves the acquisition of knowledge needed for teachers to perform their duties in teaching. This is an important area of education managers because they provide training to teachers in areas in which they expect services. They make teachers aware of the advantages of using ICT in schools.

Touray, Salminen and Mursu (2013) observed that education managers also play a role in identifying areas of training specialization provided by other institutions like colleges and polytechnics which specially cater to these training needs. Finally, they establish training priorities through collaboration with external institutions and individuals. In addition they also provide training materials. The stakeholders must be aware of the advantages of using ICT in schools by the trained teachers. Training teachers on the use of ICT is very important (El Abhour, Hildebrandt and Puckett, 2014). This statement is

very true in the sense that they are trained in using ICT but only for teaching and not connected to management. The researcher had a concern to carry out a study on utilization of ICT resources in Nakuru East sub-county, Kenya.

The existing literature on teacher training practices and ICT utilization in various countries presents a mixed picture, highlighting significant disparities in training rates and approaches. For instance, in Singapore, Thailand, and Azerbaijan, high rates of teacher training in ICT are reported, with seminars and workshops serving as crucial avenues for enhancing teachers' confidence and skills in ICT use (Sang et al., 2017). Conversely, countries like the Philippines and Myanmar exhibit significantly lower rates of ICT training among teachers, indicating a substantial gap in skills development (Trucano, 2017). This disparity in training rates suggests that findings from studies conducted in countries with high training rates may not be directly applicable to contexts with lower rates of teacher ICT training, such as Nakuru East Sub-County, Kenya. Moreover, the focus of training in some contexts may primarily be on ICT use in teaching, neglecting other potential applications of ICT within school management practices, thus limiting the generalizability of findings to broader educational settings.

Furthermore, variations in the effectiveness and nature of teacher training programs further underscore the challenges in generalizing findings across different contexts. While studies in France emphasize the importance of ongoing support and sharing of knowledge among trained teachers (Resnick, 2012), other studies highlight the need for extensive and continuous exposure to ICT to ensure effective utilization (Sharma & Shivanibindal, 2013). Additionally, findings from Western Africa suggest that despite government-sponsored training programs, teachers may still lack sufficient training in ICT use, leading to challenges in integrating ICT into teaching practices (Vegas, 2015).

These discrepancies in training approaches and outcomes highlight the complexity of the relationship between teacher training practices and ICT utilization, indicating the need for context-specific investigations to inform policies and practices in Nakuru East Sub-County, Kenya.

## **2.6 Resource Allocation Practices and Utilization of Information Communication Technology in Schools**

Shahadat, Mahbub, and Che (2012) state that developed countries utilize ICT to aid in achieving educational goals such as fostering collaboration, problem-solving, communication, and accessing crucial information. ICT resources allocated to teachers are laptops, desktops, printers and projectors but because they are very limited, it has resulted in poor utilization of ICT and lack of sufficient experience for teachers in teaching (Wells, 2012). These studies did not relate utilization of ICT to allocation of ICT resources.

In Angola, lack of ICT in schools limits what teachers tend to do with them (Adu and Olatundun, 2013). Case studies reflecting successful ICT utilization in underdeveloped countries have all shown that the schools should be provided with excellent facilities, technical back-up like flash disks, compact disks and modems to enable them access internet (Armstrong, 2012). Research shows that teachers who have a high value for ICT and perceive it to be useful completely transform their profession.

In Africa, teachers who use ICT in teaching focus on pupil choice and individual study rather than teacher direction (Alharbi, 2014). Schools assist teachers in terms of support, finance and training in use of ICT. However, teachers vary in their perceptions and experiences of ICT therefore their uptake depends on a range of combining factors. Harrison (2017), found that use of ICT resources in teaching promote class

understanding and discussion about difficult concepts.

In Kenya, many schools do not access internet because it is very expensive (Waweru, 2016). Kipsoi, Chang'ach, & Sang, (2013) add that teaching materials are very sparse in many schools in Kenya. The researchers add that the country also lacks adequate connectivity and network infrastructure. Although a small number of schools have an internet service provider, there is limited penetration of internet into rural schools (Sang et al, 2017). Even where there is an access to internet, high costs remain a barrier. Amuko, Miheso and Ndeuthi (2015) state that teachers use ICT to update teaching skills, develop lesson plans, prepare additional instructional material and prepare question banks. Teachers sometimes use ICT in teaching, and setting students' assignments.

In Nakuru County, Mingaine (2013) reported that there are limited ICT resources to equip schools with ICT infrastructure and this has been a barrier in use of ICT to support curriculum delivery. Standard software for use in schools for learning and administration are not widely available (Farrukh and Singh, 2014). The key challenge has been failure to customize and develop education software to meet the local education requirements in teaching, learning and administration. These studies mainly focused on the uses of ICT but they did not relate utilization of ICT to allocation of ICT resources.

### **2.6.1 Role of Education Managers in Allocating ICT Resources to Teachers**

Education managers get access to ICT resources in schools (Plomp, Anderson, Law, & Quale, 2009). The use of ICT in teaching depends mainly on its availability and accessibility. They should provide technical support in case there is a technical problem. Osodo (2014) agreed that when technical support is missing from the education managers then there would be higher chances of ICT breakdowns. Amuko et al (2015) reported that the breakdown of ICT causes interruptions and if there is no technical

assistance, then teachers would fail to use them in teaching. If there should be a technical breakdown experienced by teachers in using ICT, then an action should be taken immediately. Most teachers have a fear of not using ICT because there is lack of technical support from the education managers.

Katitia, Tanui and Oruta (2019) concluded from their findings that suggested that there was very little ICT use and implementation in any of the Kajiado County public schools' administrative departments. The survey found that the majority of Kajiado County's public secondary schools had not adopted ICT in a number of administrative domains. This indicates that the researchers found a lack of ICT utilization and integration within the administrative departments of public schools in Kajiado County. Further details on the extent of this lack, including specific areas where ICT was lacking, could provide a clearer picture. The survey found that the majority of Kajiado County's public secondary schools had not adopted ICT in a number of administrative domains: This adds to the understanding of the situation by specifying that it was a survey-based study. However, it would be beneficial to know which administrative domains were particularly lacking in ICT implementation and why this might be the case. This is a clear indication that education managers provide ICT to teachers in schools but they do not follow them up on how effective they are in teaching hence the need to carry out a research on the influence of school management practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

The literature presents a significant gap in understanding the relationship between ICT resource allocation practices and the utilization of ICT in teaching activities, particularly in the context of public secondary schools in Nakuru East Sub-County, Kenya. Existing studies conducted in developed countries highlight the challenges arising from limited

ICT resources allocated to teachers, resulting in poor utilization and inadequate experience in teaching. However, these studies fail to establish a direct link between the allocation of ICT resources and their utilization in teaching activities. Similarly, research conducted in underdeveloped countries like Angola emphasizes the importance of providing schools with necessary ICT facilities and technical support to enhance ICT utilization. Yet, there is a lack of investigation into how the allocation of these resources influences their utilization in teaching, especially in the specific setting of Nakuru East Sub-County.

Moreover, studies conducted in Africa and Kenya shed light on various barriers to ICT utilization in teaching, including limited access to internet, sparse teaching materials, and inadequate connectivity infrastructure. While these studies acknowledge the importance of ICT in improving teaching practices, they do not explicitly explore the impact of ICT resource allocation practices on utilization. Furthermore, challenges such as the lack of standardized software and failure to customize education software to meet local requirements highlight additional complexities in leveraging ICT for curriculum delivery. Hence, there exists a clear gap in the literature regarding the direct relationship between the allocation of ICT resources and their utilization in teaching activities, particularly within the specific educational context of Nakuru East Sub-County in Kenya.

## **2.7 School Policies and Utilization of Information Communication Technology**

Kiunga (2014), reports that some schools have well formulated ICT policies with objectives that can be achieved. Makewa, Mareno, Role and Role (2013) said that schools must have a proper ICT policy as it is a blueprint to design and manage use of ICT in teaching. He added to say that the school ICT Policy makes explicit its



educational goals. The policy document sets out the school's aim, principles and strategies for the delivery of Information and Communication Technology (Adu & Olatundun, 2013).

It is concerned with providing clear objectives and basic competencies in ICT knowledge for teachers (Higgins & Moseley, 2015). ICT policies form the basis for the development of ICT in the school. In developed countries, the school ICT Policy calls for training for teachers. Teachers are required to be confident in using ICT in teaching (Ghavifekr, Razak, & Ghani, 2016). ICT help teachers work in teams and share ideas related to school's curriculum. UNESCO (2015) reports that policies can fail to succeed because they are not always effective in schools. Many researchers have pointed out that a school with ICT policy makes its usage very effective (Kiunga, 2014). In line with this idea, a school policy gives us a place to start, a goal to reach for, as well as a guidepost along the way. Also, Mikre (2011) recommend that teachers and schools must develop an ICT Policy.

In Africa, teachers belonging to schools with formulated ICT policies are more likely to apply ICT in an innovative way (Chen et al, 2016). Flanagan & Jacobsen (2013) observed that the school ICT Policy should not be created by a single person but it should involve parents, learners and the community. This will allow them assist in the creation of the Policy by contributing their knowledge, skills, and positive attitude towards its formulation (Afshari et al, (2017). Therefore, a clear ICT policy promotes effective use of ICT in all fields (Shahadat et al, 2012).

A national ICT policy was formed in the year 2006 by the Ministry of Education in Kenya. The main aim for its formation was to make to make sure that ICT are available in schools. The government of Kenya will encourage the use of ICT in schools under this

section on policy. In Nakuru County, the ministry's policy framework indicates that high levels of poverty, limited rural electrification and frequent power disruptions affects use of ICT in schools. It has been observed that, many schools in Naivasha have not implemented the policy (Mbugua, Gori & Tanui, 2015). A good ICT plan should comprise an assessment and evaluation approach to obtain a clear picture of ICT use.

It can be inferred that the government encourages formulation of ICT policies in schools for ICT resources to be effectively used. A point of concern that was left pending is its utilization on management practices. From the work done by the researchers and the discussion above, some schools can have ICT policies but fail to function while some have ICT policies that work so effectively. The point of concern to this research is the connection of school ICT policies to utilization of ICT in secondary schools which left a gap for further research.

### **2.7.1 Role of Education Managers in Formulating Policies in Utilization of ICT Resources**

Education managers have established a school ICT policy that can be sustained by quality technical support. The school policies should be flexible and transparent for collective planning, provision and sharing of ICT resources in schools. The education managers encourage improvements and processes that are used to manage ICT in schools (Ministerial Council on Education, Employment, 2016). Since teachers are attached to ICT use in education the national policy should address the issue of teachers' professional development. The national policy should identify a frame of reference in order to gauge success of ICT use teaching.

The existing literature provides insights into the importance of ICT policies in schools and their potential impact on the utilization of ICT in teaching activities. Studies by

Kiunga (2014), Makewa et al. (2013), Adu & Olatundun (2013), and Higgins & Moseley (2015) emphasize the significance of well-formulated ICT policies in providing clear objectives and basic competencies for teachers, thereby serving as a blueprint for ICT integration in education. However, these studies primarily focus on developed countries and fail to address the specific context of public secondary schools in Nakuru East Sub-County, Kenya. While the importance of ICT policies is highlighted, there is a gap in understanding how these policies operate within the unique socio-economic and infrastructural constraints present in the region. Additionally, the literature does not provide evidence on the direct relationship between the existence of ICT policies and their actual implementation and impact on ICT utilization in teaching activities within the Kenyan context.

Moreover, the literature underscores the role of stakeholders, such as teachers, parents, learners, and the community, in the formulation and implementation of ICT policies (Flanagan & Jacobsen, 2013; Afshari et al., 2017). However, there is a lack of empirical evidence on how these collaborative efforts translate into effective utilization of ICT resources in secondary schools, particularly in Nakuru East Sub-County. While the national ICT policy in Kenya aims to promote the availability and use of ICT in schools, challenges such as poverty, limited electrification, and power disruptions hinder its effective implementation, as observed in Nakuru County (Mbugua, Gori, & Tanui, 2015).

This discrepancy between policy formulation and implementation underscores the need for further research to understand the role of education managers in aligning ICT policies with effective utilization practices in the local context. Thus, there exists a gap in the literature regarding the direct impact of school ICT policies on the utilization of ICT in

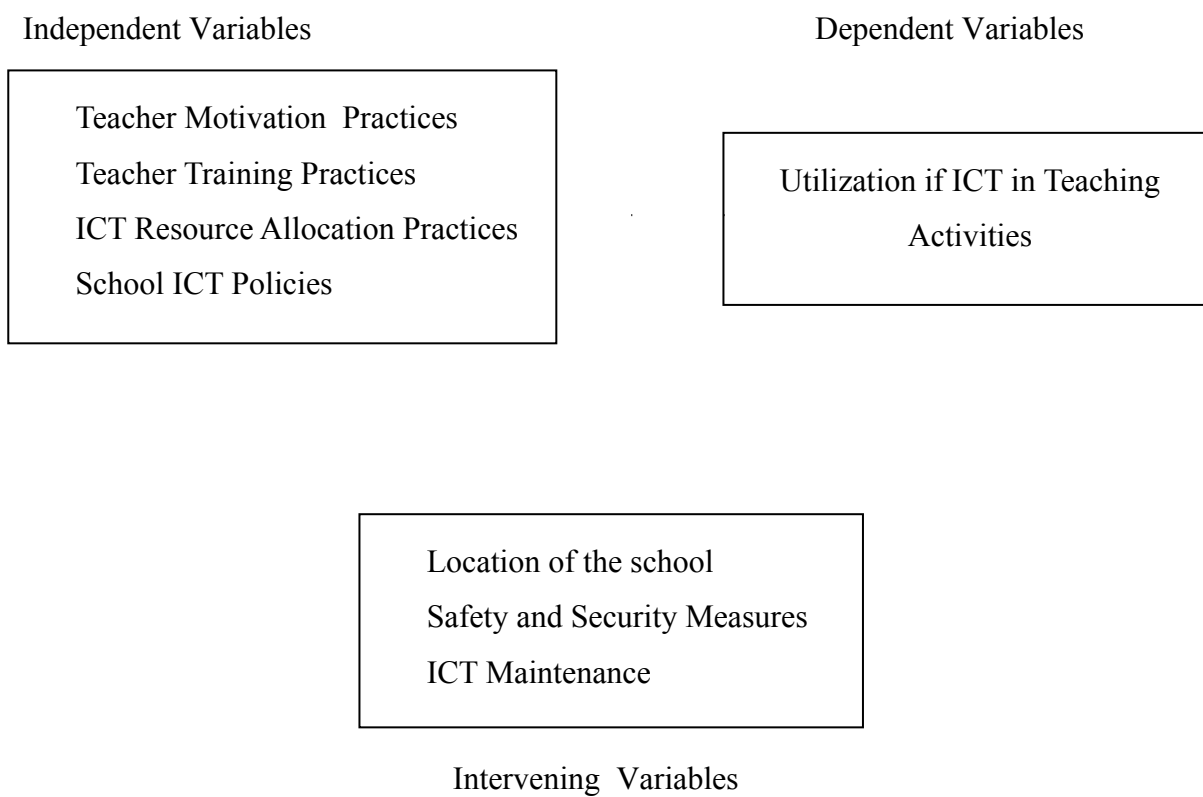
teaching activities, particularly in Nakuru East Sub-County, Kenya, which warrants further investigation.

## 2.8 Conceptual Framework

Figure 1 shows the influence of selected school management practices on the utilization of ICT in teaching activities.

**Figure 1**

*Conceptual Framework*



*Source:* Author (2024)

The conceptual framework shows the independent variable as teacher motivation practice, teacher training practices, resource allocation practices and school policies

while the dependent variable as frequency of utilization of ICT. It is acknowledged that the use of ICT in education has the potential to enhance the quality of teaching and learning, the research productivity of teachers, students and the management and effectiveness of institutions (Motala, 2015). The head teachers should motivate and train teachers, allocate ICT resources and formulate effective school ICT policies to enable teachers to utilize ICT in the teaching and learning process.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology that was used for this study. It covers the research design, location of study, population of study, sampling procedures and sample size, data collection procedures, research instruments, data analysis, data presentation and ethical considerations.

#### **3.2 Research Design**

Creswell (2014) defines a research design as an overall method a researcher chooses to enable him address the research problem in a coherent and logical way. The research design employed depends on what the researcher was trying to investigate. In this research, descriptive survey design was employed. Fox and Bayat (2007) describe descriptive research as gathering and describing the data collected. A researcher can then organize and tabulate the data. This research design was appropriate to this study because it assisted to describe how principals and teachers utilize ICT in public secondary schools in Nakuru East Sub-County, Kenya. The events being investigated have already happened and they could not be manipulated which made it suitable for descriptive survey design.

The descriptive survey design was deemed the most suitable methodology for this study due to its inherent ability to systematically collect, analyze, and interpret data to describe phenomena as they naturally occur. Given the research's objective to investigate the perceptions and experiences of both principals and teachers regarding educational leadership practices, a descriptive approach allows for the comprehensive examination of these variables within their real-world context. By utilizing questionnaires tailored for

principals and teachers, this design facilitates the gathering of rich, quantitative data on participants' opinions, attitudes, and behaviors. Moreover, descriptive research was particularly adept at providing a snapshot of existing conditions, offering insights into the current state of educational leadership practices without imposing experimental manipulations. This methodological choice enabled researchers to generate detailed and accurate descriptions of the phenomenon under investigation, thus laying the foundation for informed decision-making and potential future interventions within the educational context.

### **3.3 Location of Study**

The study was carried out in Nakuru East Sub-County within Nakuru County, Kenya. Nakuru County is a county located in the former Rift Valley Province of Kenya, about 150 km from Nairobi. Nakuru is an agriculturally-rich county blessed with various tourist attractions such as craters, lakes and national parks. Tourist attractions in Nakuru County include Lake Nakuru National Park, Lake Naivasha, Hell's Gate National Park and Menengai Crater. Nakuru County is made up of 11 Sub-Counties. Nakuru County borders seven counties; Laikipia to the north east, Kericho to the west, Narok to the south west, Kajiado to the south, Baringo to the north, Nyandarua to the east and Bomet to the west. It covers an area of 7496.5 square kilometres. The Latitude and longitude coordinates of Nakuru are 00300 S 36000 E respectively.

The location of Nakuru East Sub-County within Nakuru County, Kenya, holds significant relevance to the study on the influence of selected school management practices on the utilization of Information Communication Technology (ICT) in teaching activities in public secondary schools. Situated within the agriculturally-rich Nakuru County, the sub- county benefits from the region's dynamic socio-economic landscape

and its burgeoning educational infrastructure. Additionally, Nakuru County's proximity to various tourist attractions such as Lake Nakuru National Park and Hell's Gate National Park underscores its status as a hub for both economic and leisure activities, potentially influencing the implementation and integration of ICT in educational practices. Moreover, Nakuru County's strategic location within the former Rift Valley Province and its bordering with multiple other counties further enriches the study's context by offering insights into regional disparities and collaborative efforts in advancing educational technology initiatives.

### **3.4 Population of the Study**

Banerjee (2010) defined the target population as the group from which the sample is drawn. The target population of this study was 19 principals and all 469 teachers in the 19 public secondary schools in Nakuru East Sub-County, Kenya.

### **3.5 Sampling Procedures and Sample Size**

#### **3.5.1 Sampling Procedures**

A sample is a subset or a segment of the population that can represent the targeted population (Rubin and Zanutto, 2011). Sampling involves selecting a given number of samples from a defined population so as to represent the entire population (Alvi, 2016). Given that, samples serve as representatives of whole populations, any data obtained from them should likewise hold true for the entire population. In this study, census technique was used to select all principals to respond to questionnaires. A census technique is a statistical technique where all members of the population are studied. Census sampling was also used to select all teachers from 19 public secondary schools in Nakuru East Sub-County.



Since the population size of principals and teachers in public secondary schools in Nakuru East Sub-County is likely manageable, conducting a census approach is feasible within the constraints of time, resources, and logistics. This allows for a comprehensive examination of the research objectives without the need to rely on statistical inference or assumptions associated with sampling techniques. Moreover, using a census approach can enhance the credibility and reliability of the study findings, as it ensures that the data collected represent the entire population rather than just a subset.

Furthermore, in educational research, where the focus is often on understanding the experiences and perceptions of individuals within specific contexts, a census approach can provide rich and detailed insights that may not be captured through sampling. By including all principals and teachers, the study can explore variations in ICT utilization practices across different schools and identify potential patterns or trends that may inform policy and practice. Therefore, the use of a census approach in this study aligns with the research objectives and enhances the rigor and validity of the findings by ensuring comprehensive coverage of the population of interest.

### **3.5.2 Sample Size**

All 19 principals from 19 public secondary schools in Nakuru East Sub-County participated in the study. However, 2 principals and 44 teachers drawn from the sample size participated in the pilot study. Consequently, the total sample of respondents was 408 teachers including the principals.

**Table 1***Sampling Table*

Population		Sample Size	Piloting (10% of the sample size)
Principals	19	17	2
Teachers	469	423	46
Total	488	440	48

### **3.6 Instrumentation**

In conducting the study, questionnaires were chosen as the primary instrument for data collection. A questionnaire is defined as an instrument that is used to collect data by the researcher in order to provide the correct information about his/her research (Cohen, Manion and Morrison, 2013). Closed or Structured Questionnaire is a document that consists of a set of standardized questions which specifies the order of questions for gathering information from respondents. Two sets of questionnaires were administered. For both questionnaires, items on each variable was rated on a 4- point Likert- Scale of; Always (A), Frequently (F), Sometimes (S) and Never (N). The respondents were required to tick (  ) or cross (  ) the appropriate responses that best represented their opinion.

#### **3.6.1 Questionnaires for Principals**

In this study, a structured questionnaire titled "Questionnaire for Principals" was utilized to gather pertinent information. As noted by Mcleod (2018), questionnaires are commonly employed in educational research to acquire insights into prevailing conditions and practices. The questionnaire primarily comprised closed-ended questions, facilitating straightforward coding procedures (Cresswell, 2014). The instrument encompassed three distinct sections: Section A, Section B, and Section C. Section A

aimed at capturing demographic data regarding the respondents. Section B was designed to elicit information on the availability of selected school management practices concerning the utilization of Information Communication Technology (ICT). It is imperative to note that the items related to each variable were rated on a 4-point Likert Scale, ranging from "Always (A)" to "Never (N)". Respondents were instructed to indicate their opinions by marking with a tick (Z ) or a cross (×) the responses that best reflected their views.

### **3.6.2 Questionnaires for Teachers**

Similarly, a structured questionnaire named "Questionnaire for Teachers" was employed in the study to collect relevant data. This questionnaire was divided into several sections to comprehensively cover various aspects. Section A, akin to the Principals' questionnaire, focused on gathering demographic information from the respondents. Section B delved into the utilization of ICT in teaching activities, aiming to gauge the extent of integration and practices among teachers. Section C pertained to teacher motivation practices for ICT utilization in teaching activities, while Section D addressed teacher training practices in this regard. Furthermore, Section E explored ICT resource allocation practices pertinent to the utilization of ICT in teaching activities, whereas Section F delved into school policies regarding ICT integration in teaching activities. Each section was meticulously crafted to capture crucial insights into the utilization of ICT in teaching activities among teachers in public secondary schools in Nakuru East Sub-County, Kenya.

### **3.6.3 Validity of the Instrument**

Research instruments are meant to measure exactly and precisely what they are out to measure. Lobiondo, et al. (2013), defined validity as the extent to which the concept to

be tested establishes whether the results obtained corresponds to what it is supposed to be measured. In this study, Content validity was used to assess the correspondence between the items and concept. The instruments were presented to the supervisors and experts in the area of study. They scrutinized each item and ascertained their validity. Piloting was also used to check validity.

In ensuring the validity of the instruments used in this study, content validity was employed as the primary method of assessment. This involved presenting the instruments to supervisors and experts in the field of study who meticulously scrutinized each item to ascertain their alignment with the intended concept being measured. Additionally, piloting was conducted to further validate the instruments, providing an opportunity to gauge their effectiveness and appropriateness in capturing the desired data accurately. Through these rigorous procedures, the study sought to uphold the integrity and accuracy of its measurements, ensuring that the results obtained truly reflected the intended constructs under investigation.

#### **3.6.4 Piloting of the Instruments**

Piloting refers to pre-testing of research instrument to a selected sample which is similar or identical to the actual sample to be used in the study (Castillo-Montoya, 2016). The selected sample for piloting is not the actual sample. Castillo-Montoya, (2016) holds that the principle of piloting of an instrument is to ensure that there is clear statement of items and that the same meaning is attached to the items for all the participants. This means that 2 principals and 46 teachers were chosen randomly and were given questionnaires from public secondary schools from Nakuru East Sub-County. The piloting respondents never participated in the final study. Piloting uses 10% of the population (Connelly, 2008). The results from piloting assisted the researcher to make corrections arising from

instruments, which ensured they measured what was intended. Pilot data became useful in checking clarity of items in the questionnaire.

### **3.6.5 Reliability of Research Instrument**

Reliability is defined as a measure of the degree to which a research instrument yields consistent results on data after repeated trials. To ensure reliability, the researcher used test re-test method to estimate the degree to which same results were obtained with a repeated measure. To ensure the external reliability of the instruments, the researcher conducted a piloting phase involving a subset of participants from the target population. Specifically, 10% of the total number of schools (which equates to 19 schools) and 10% of the total number of teachers (which amounts to 423 teachers) were selected for the pilot study. Consequently, 2 principals and 46 teachers from 2 schools participated in this preliminary phase. The selection of participants from different schools aimed to capture diverse perspectives and experiences, thereby enhancing the generalizability of the findings. Additionally, the pilot study enabled the researcher to identify any potential issues or ambiguities in the questionnaire, allowing for necessary refinements to be made prior to the full-scale implementation of the research.

During the piloting phase, the researcher ensured external reliability by employing rigorous data collection procedures and maintaining consistency in questionnaire administration across the participating schools. Standardized instructions were provided to both principals and teachers to ensure uniformity in responses and minimize variability. Furthermore, the researcher closely monitored the administration process to address any discrepancies or deviations from the established protocol promptly. This meticulous approach helped mitigate potential sources of error and contributed to the reliability and validity of the instruments used in the study.

The findings of the external reliability assessment revealed promising results, indicating a high level of consistency and stability in the questionnaire responses across the sampled schools and teachers. Specifically, the pilot study demonstrated strong agreement among principals and teachers regarding the clarity of the questionnaire items and the relevance of the constructs under investigation. Moreover, minimal variation was observed in the responses provided by different participants, suggesting that the questionnaire effectively captured the intended information consistently across diverse settings. The pilot study validated the reliability of the research instruments and provided confidence in their ability to yield dependable data for the subsequent phases of the study.

To gauge internal reliability the instruments were administered twice within the interval of two weeks. The reliability of the research instruments was assessed using Cronbach's Alpha, with a predetermined threshold of 0.7. This statistical test is commonly used to measure the internal consistency of a set of survey or assessment items. In this context, a Cronbach's Alpha value of 0.7 or higher indicates a high degree of reliability, suggesting that the items in the instruments are consistent and measure the intended constructs consistently. It implies that the data collected from the instruments are dependable and can be trusted for the analysis, enhancing the overall quality and validity of the research findings. The questionnaire were modified for application once they demonstrated a reliability with an average Cronbach Alpha Coefficient of 0.829, surpassing the minimum threshold of 0.7, as indicated in Table 2.

**Table 2***Reliability Test Results*

Variable	No of Items	$\alpha > 0.7$	Comment
Teacher motivation practices	5	0.801	Reliable
Teacher training practices	5	0.911	Reliable
School ICT policies	5	0.812	Reliable
ICT resource allocation practices	5	0.788	Reliable
Utilization of ICT in Teaching Activities	5	0.834	Reliable
Average		0.829	

The reliability test results, as shown in Table 2, assess the internal consistency of the variables used in the study. The key indicator used for this assessment is Cronbach's Alpha ( $\alpha$ ), with a threshold of 0.7 or higher indicating good reliability.

Teacher Motivation Practices ( $\alpha = 0.801$  - Reliable): This variable, consisting of 5 items, demonstrates good internal consistency with a Cronbach's Alpha of 0.801. This suggests that the items related to teacher motivation practices are consistent in measuring the same underlying construct and can be relied upon in the study.

Teacher Training Practices ( $\alpha = 0.911$  - Reliable): The variable "Teacher Training Practices" also exhibits excellent internal consistency, with a Cronbach's Alpha of 0.911. This high value indicates that the items assessing teacher training practices are highly consistent, making them a reliable measure for the study.

School ICT Policies ( $\alpha = 0.812$  - Reliable): The variable "School ICT Policies" achieves good reliability with a Cronbach's Alpha of 0.812. This indicates that the items used to measure school ICT policies are internally consistent and can be trusted for the study's purposes.

ICT Resource Allocation Practices ( $\alpha = 0.788$  - Reliable): Similarly, the variable "ICT Resource Allocation Practices" demonstrates good internal consistency, with a Cronbach's Alpha of 0.788. This suggests that the items related to ICT resource allocation practices reliably measure the intended construct.

Utilization of ICT in Teaching Activities ( $\alpha = 0.834$  - Reliable): The variable assessing the "Utilization of ICT in Teaching Activities" also exhibits good reliability, with a Cronbach's Alpha of 0.834. This indicates that the items measuring ICT utilization in teaching activities are consistent and dependable.

Average Reliability (Average  $\alpha = 0.829$ ): The average Cronbach's Alpha value for all variables is 0.829, which is above the threshold of 0.7. This average indicates that, on average, the variables in the study demonstrate good internal consistency and reliability, suggesting that the research instruments are suitable for measuring the constructs of interest effectively. According to Tavakol and Dennick (2011) the acceptable values of alpha, ranges from 0.70 to 0.95. Therefore the instrument was found reliable for use.

### **3.7 Data Collection Procedures**

The permission to carry out the study was sought first by obtaining an introduction letter from the Institute of Postgraduate Studies of Kabarak University and then a research permit from National Commission of Science Technology and Innovation (NACOSTI) and Department of Education of Nakuru County. Before collecting data, the researcher contacted the principals of the participating schools and made prior visits to the schools to seek appointments with the school principals. The researcher administered questionnaires to the respondents, who completed the same in the presence of the researcher. The respondents responded to the questionnaires within the day.



### 3.8 Data Analysis and Presentation

Data analysis refers to examining what will be collected and making observations and inferences. According to Boeije, Ben-Elia and Ettema (2010) it is very significant for data collected to be managed well for ease of analysis. This study processed the data collected using tools in Statistical Package for Social Sciences (SSPS) version 22 computer programme. After clean up and reviewing of the collected data, the data was coded and keyed into a computer. The findings of the study were presented in tables.

**Table 3**

*Table of Statistical Analyses of Variables*

Research objectives	Independent Variable	Dependent variable	Statistics	
Objective 1	Teacher Motivation Practices	Utilization of ICT in teaching activities	Pearson Moment coefficients, frequencies, means and percentages	Product Correlation
Objective 2	Teacher Training Practices ICT	Utilization of ICT in teaching activities	Pearson Moment coefficients, frequencies, percentages	Product Correlation
Objective 3	Resource Allocation Practices	Utilization of ICT in teaching activities	Pearson Moment coefficients, frequencies, percentages	Product Correlation
Objective 4	School ICT Policies	Utilization of ICT in teaching activities	Pearson Moment coefficients, frequencies, percentages	Product Correlation

In order to test for hypotheses, regression analysis was computed was used. Testing of hypothesis was tested at the 0.05 alpha level. The p value at 0.05 was used as a guide to either accept or reject the hypotheses. ANOVA (Analysis of Variance) was chosen as the statistical method for testing the hypotheses in this study because it is appropriate for comparing means between multiple groups or conditions. In this case, the research objectives involve examining the influence of different independent variables (teacher motivation practices, teacher training practices, resource allocation practices, and school ICT policies) on a single dependent variable (utilization of ICT in teaching activities). ANOVA allows for the comparison of means across multiple groups, which is ideal when the study involves more than two groups or conditions, as is the case here.

The p-value was used in testing the hypotheses because it is a fundamental statistical measure that helps researcher to assess the significance of their findings. In hypothesis testing, the p-value indicates the probability of obtaining the observed results (or more extreme results) if the null hypothesis is true. If the p-value was less than or equal to 0.05, the null hypothesis would be rejected, indicating a significant relationship between the variables.

$H_0 : \beta_1 = 0$ ; if  $P \leq 0.05$  otherwise fail to reject the null hypothesis.

### **3.9 Ethical Considerations**

Ethics are principles and guidelines that help us uphold the things valued. The conduct of this research study was guided by prescribed research ethical practices. The ethical consideration under this research includes informed consent and confidentiality of respondents. Informed consent was obtained before the actual carrying out research and the participants were made aware of their rights.

The researcher explained the purpose of this study to the respondents in order for them to make informed decisions. The respondents were made aware of confidentiality by the researcher that the information would only be used for the purpose of this research study.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND DISCUSSION**

#### **4.1 Introduction**

This chapter presents analysis of data in the study. It presents results arising from the analysis of data collected using questionnaires in line with return rate and demographic profile of the respondents. The purpose of the study was to investigate the influence of selected school management practices on utilization of information technology in teaching activities in public secondary schools in Nakuru East Sub- County, Kenya. The findings are given in terms of the objectives of the study which were: to establish the influence of teacher motivation practices, teacher training practices, resource allocation practices and school policies on utilization of ICT in secondary schools in Nakuru East Sub-County, Kenya.

The data was collected through the teachers' questionnaires and principals' questionnaires. The data was analyzed using descriptive and inferential statistical methods for each variable and the findings presented in tables. The p-value, set at a significance level of 0.05, was employed in hypothesis testing as a crucial statistical metric. It serves as a fundamental tool for researchers to gauge the importance or significance of their research outcomes.

#### **4.2 Response Rate of the Questionnaires**

Table 4 shows the response rate of the questionnaires.

**Table 4***Response Return Rate of the Questionnaires*

Category of Respondents	No. of questionnaires Issued	No. of questionnaires Returned	Response Rate (%)
Principals	17	17	100
Teachers	423	317	74.9
Average % Response Return Rate			87.5

As shown in Table 4 From the initial sample size of 423 teachers' questionnaires administered, 317 questionnaires were returned giving a response rate of 74.9%. All (100%) the 17 questionnaires issued to the principals were returned. The average percentage response return rate was considered adequate at 87.5%. According to Fraenkel et al. (2012), a response rate of more than 60% is considered good for the study. This was deemed adequate for data analysis. The high questionnaire response resulted from the method of administration. In this case, it was self-administered. This was acceptable according to Moser and Kalton (2017). According to this method, the clarity of the respondents was assured at the point of data collection. The questionnaires that were not returned by the respondents were not included in the study.

**4.3 Demographic Characteristics of the Respondents**

The study sought to determine the demographic characteristics of the respondents as they are considered as categorical variables which give some basic insight about the respondents. The demographic characteristics considered in the study were: gender, range of ages of the respondents, highest level of education attained by them and the

number of years they had worked in their present school. The findings on these demographic characteristics are as shown in the tables below.

#### 4.3.1 Gender of the Respondents

Respondent's gender was analyzed and presented in Table 5 below:

**Table 5**

*Gender of the Respondents*

Characteristic	Frequency	Percentage (%)
Male	176	55.5
Female	141	44.5
Total	317	100.0

The findings in Table 5 suggest that over half of the respondents (55.5%) were males while 44.5% were females. The findings show that the proportion of males and female respondents was not markedly different. It also implies that the high percentage of females indicates a significant number of female teachers in the schools. These findings imply that the respondents could give reliable information for the study because there was no gender disparity during their appointments.

The gender analysis conducted held significant implications for understanding the composition of the respondent population and its potential impact on the research outcomes. This finding suggests a substantial representation of both male and female teachers in the schools under study, indicating gender diversity within the respondent pool. Importantly, the absence of a significant gender disparity in the sample implies that both male and female respondents were equally likely to provide reliable information for the study, thereby enhancing the credibility and validity of the research findings. This gender analysis underscores the importance of considering demographic characteristics,

such as gender, in educational research to ensure comprehensive and inclusive insights into the study population and its dynamics.

#### 4.3.2 Age of the Respondents

Respondents' age were analyzed and presented in Table 6 below.

**Table 6**

*Age of the respondents*

Characteristic	Frequency	Percentage (%)
Less than 25 years	30	9.5
26-35 years	153	48.3
36-45 years	104	32.8
Above 45 years	30	9.5
Total	317	100.0

The findings indicated that majority of respondents (48.3%) were between 26 and 35 years, followed by 32.8% with 36-45 years. This implies that TSC has employed more relatively young teachers who may be more receptive to the ICT uptake in teaching and learning activities. Those with less than 25 years and those above 45 years were 9.5% respectively. This also shows that teachers above 45 years (9.5%) might have had a possibility of skepticism and resistance to the uptake and use of ICT in teaching. The distribution of age groups among respondents, particularly the prevalence of relatively young teachers, suggests a potential correlation between age and receptiveness to ICT adoption, with younger educators likely more open to embracing technological advancements. Additionally, the presence of a minority of teachers above 45 years old indicates a possible inclination towards skepticism and resistance to ICT integration, highlighting the importance of considering age-related factors in understanding attitudes towards technology in education.

The teachers who served in teaching profession for long period tend to have no interest in ICT (Kanyoi, 2019). Most of these teachers are not cautious about the safety of the gadgets (Buckner & Kim, 2014). From the findings, it is also evident that the respondents aged 25 years and below (9.5%), could still be able to utilize the ICT resources in teaching activities in their schools because they still have enough time to learn more on the use of ICT in teaching activities before their retirement elapses. The findings from the respondents on gender could give reliable information to my study.

### 4.3.3 Academic Level of the Respondents

The academic level of the respondents was analyzed and presented in Table 7. The higher a teacher progresses in learning, the more a teacher is likely to be exposed to ICT.

**Table 7**

*Highest Academic Level of the Respondents*

Characteristic	Frequency	Percentage (%)
PhD	13	4.1
Master's degree	70	22.1
Undergraduate degree	214	67.5
Diploma level	20	6.3
Total	317	100.0

From the analysis, it is evident that the majority of the respondents hold undergraduate degrees, constituting 67.5% of the sample, followed by those with master's degrees at 22.1%. A smaller percentage possesses diploma-level qualifications (6.3%), while a minority holds PhD degrees (4.1%). Understanding the distribution of qualifications, ranging from undergraduate to PhD levels, allows for a nuanced examination of how varying levels of educational attainment may influence the integration and effectiveness



of ICT practices in the educational context. These results suggest that the teaching staff in the surveyed public secondary schools in Nakuru East Sub-County is predominantly educated at the undergraduate and master's degree levels. The implications of these findings for the study are that the educators in the region have a reasonable level of formal education, which may influence their capacity to engage with and effectively utilize ICT in teaching activities. However, the relatively low percentage of respondents with PhD qualifications could indicate potential limitations in terms of research expertise and innovation in ICT integration in teaching practices, which the study may need to consider when assessing the influence of school management practices on ICT utilization.

#### 4.3.4 Work Experience of the Respondents

Respondents' Work Experience Was Analyzed And Presented In Table 8.

**Table 8**

*Length in Teaching in this School by the Respondents*

Characteristic	Frequency	Percentage (%)
Less than 1 year	31	9.8
1-5 years	159	50.2
6-10 years	54	17.0
11-15years	66	20.8
more than 16 years	7	2.2
Total	317	100.0

The findings specified that majority of respondents (50.2%) had been teaching for up to 5 years in the school, followed by 20.8% of those who had 11-15 years teaching in the school sampled. Moreover, 17% reported to have between 6-10 years in teaching. 9.8% and 2.2% of respondents had been teaching for less than 1 year and more than 16 years, respectively. However, after serving for 15 years, there was a drastic drop in the number

of teachers suggesting that more teachers might have moved to different schools. The distribution of respondents' teaching experience highlights the potential impact of varying levels of familiarity and adaptation to technological innovations within the educational context. The observed decline in the number of teachers after 15 years of experience suggests a potential turnover or migration pattern, indicating a need to explore how institutional practices may influence the retention and engagement of experienced educators in leveraging ICT tools for teaching. This shows that since respondents had been in teaching fraternity for a sizable amount of years, they were able to provide data accordingly.

Overall, these findings on the demographic characteristics of the teachers imply that majority of the respondents had reasonable level of education for their line of work and were well familiar with their work stations. They were therefore expected to give valid opinions in relation to the study problem being investigated. Abere and Muturi (2015) explained that for a reliable study to be conducted, the respondents' background characteristics such as age, gender, educational qualifications and work experience need to be established so as to ascertain that those sampled from a reliable population that is likely to give valid answers for the study.

#### **4.4 Teacher Motivation Practices**

The first objective of the study was to establish the influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. A four point Likert scale was used to rate the respondents of this variable and it ranged from: 1= Never to 4= Always. In addition, the mean was used as a parameter to assess the reactions of the respondents to the statements posed. The closer the mean score on each item to 4, the more the agreement concerning

the statement while the scores below 2.5 would indicate disagreement regarding the statement posed. Questionnaire items on teacher motivation were selected and their percentage scores computed and the means and standard deviations determined. This provided the basic trends of the data from which the reactions could be analyzed. The findings were presented as shown in Table 9.

**Table 9**

*Teacher Motivation Practices on ICT Utilization in Teaching Activities*

Statement	N (%)	S (%)	F (%)	A (%)
Teachers who utilize ICT are given freedom to develop skills and abilities in my school.	15.0	38.5	26.8	19.7
Teachers who utilize ICT are given responsibilities in my school.	19.6	39.6	25.0	15.8
Teachers who utilize ICT are awarded certificates in my school.	42.9	30.6	12.0	14.5
Teachers who utilize ICT are supported by being provided with teaching resources in ICT.	19.2	45.4	21.1	14.2
Teachers get access to good working conditions for them to utilize ICT.	14.6	45.3	24.4	15.8
Teachers who utilize ICT receive technical support.	27.1	43.2	17.7	12.0
Teachers who utilize ICT are offered further training in ICT integration.	35.3	39.4	15.1	10.1
Teachers who utilize ICT are given promotion.	48.3	20.2	18.3	13.2
Teachers who utilize ICT are given awards at the end of the year.	49.8	17.7	16.7	15.8

The results in Table 10 regarding teacher motivation practices and their influence on the utilization of Information Communication Technology (ICT) in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya, are as follows: Regarding

the statement, "Teachers who utilize ICT are given freedom to develop skills and abilities in my school," a combined percentage of 65.3% (38.5% frequently and 26.8% always) of respondents agree that teachers using ICT are given the freedom to develop their skills. However, a significant portion of 15.0% disagrees or indicates that this practice occurs rarely. This suggests that there is room for improvement in providing more freedom for skill development, which can have a positive impact on ICT utilization.

Similarly, with respect to the statement, "Teachers who utilize ICT are given responsibilities in my school," a substantial combined percentage of 64.6% (39.6% frequently and 25.0% always) of respondents feel that teachers using ICT are given responsibilities. However, 19.6% disagree or perceive this as infrequent. Encouraging teachers' involvement in various school responsibilities can enhance ICT integration. The present findings agree with that of Chen, et al. (2016) who reported that secondary school teachers are poorly motivated in sub-Saharan Africa and South Asia. The researchers further explained that a wider success among teachers may be achieved if ample support and time to learn the technology are provided to them.

In the case of "Teachers who utilize ICT are awarded certificates in my school," only a combined percentage of 26.5% (12.0% frequently and 14.5% always) of respondents agree that teachers using ICT are awarded certificates. The findings agree with that of Laaria (2013) who stated that teachers need to be motivated so that they can actively use ICT in teaching. For the statement, "Teachers who utilize ICT are supported by being provided with teaching resources in ICT," a considerable combined percentage of 66.5% (45.4% frequently and 21.1% always) agrees that teachers using ICT are supported with teaching resources. However, 19.2% of respondents disagree or perceive this support as

infrequent. The findings are in agreement with those in a study by Afshari, et al. (2017) who emphasizes the importance of availing ICT resources to promote effective utilization of ICT by teachers.

Regarding "Teachers get access to good working conditions for them to utilize ICT," this statement shows that a combined percentage of 69.7% (45.3% frequently and 24.4% always) agree that teachers using ICT have access to good working conditions. While this is a positive trend, 14.6% still disagree or find it rare, indicating potential areas for improvement. Chimombe (2015) in Zambia asserted that a good environment promotes effective teaching in use of ICT.

In terms of "Teachers who utilize ICT receive technical support," a significant combined percentage of 60.3% (43.2% frequently and 17.7% always) agrees that teachers using ICT receive technical support. However, 27.1% find this support lacking or rare, suggesting room for more consistent support.

Regarding "Teachers who utilize ICT are offered further training in ICT integration," this result indicates that a substantial combined percentage of 54.7% (35.3% frequently and 15.1% always) agree that teachers using ICT receive further training. However, 39.4% find this practice infrequent, suggesting that more opportunities for training could be beneficial. This finding agrees with Mbugua, et al. (2015), who specified that teachers' motivational practices include offering teachers professional support such as training, teacher guidebooks and resource books for successful ICT integration. He further stated that teachers require technical support for them to successfully integrate ICT in teaching.

In the case of "Teachers who utilize ICT are given promotion," only a combined percentage of 38.5% (20.2% frequently and 18.3% always) of respondents agree that teachers using ICT are given promotions, while 48.3% disagree with this practice.

Recognizing ICT integration in promotion decisions may need attention. Similarly, with respect to "Teachers who utilize ICT are given awards at the end of the year," only a combined percentage of 34.5% (17.7% frequently and 16.7% always) of respondents agree that teachers using ICT receive awards at the end of the year. A significant percentage (49.8%) disagrees, suggesting room for improvement.

The results indicate that there are both positive aspects and areas for improvement in teacher motivation practices concerning ICT utilization in teaching activities. While some teachers receive support, freedom, and responsibilities related to ICT, there is a need for more consistent recognition through awards, promotions, certificates, and training. Improving these motivational practices can lead to increased ICT integration in teaching, enhancing the overall quality of education in Nakuru East Sub-County's public secondary schools. It is essential for school management to address these findings to create a more conducive environment for teachers to embrace and effectively use ICT in their teaching activities.

#### 4.4.1 Correlation Analysis

The relationship between teacher motivation practices and ICT utilization in teaching activities was analyzed using person correlation statistics. The analysis was tested at 0.05 alpha levels with 2-tailed level of significance. The results are presented in Table 10.

**Table 10**

*Correlation between Teacher Motivation Practices and ICT Utilization in Teaching Activities*

		Utilization of ICT in Teaching Activities
Teacher Motivation Practices	Pearson Correlation	.588**
	Sig. (2-tailed)	.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The findings in Table 10 specify that there was a moderately positive relationship between teacher motivation practices and utilization of ICT in teaching activities ( $r=0.58$ ;  $p<0.05$ ). According to Frost (2017), a Pearson correlation coefficient ( $r$ ) of 0.588 indicates a moderately positive relationship. This implies that when the level of teacher motivation increases, utilization of ICT in teaching activities also increases. The p-value of less than 0.05 ( $p < 0.05$ ) indicates that this correlation is statistically significant, meaning that it is unlikely to have occurred by chance. This adds further credibility to the finding that there is indeed a meaningful relationship between teacher motivation practices and ICT utilization in teaching activities in the study's context. The correlation coefficient of 0.588, characterized as moderately positive, implies that there is a statistically significant tendency for increased teacher motivation practices to correspond with increased ICT utilization in teaching activities in the study.

This implies that when teacher motivation practices are enhanced or strengthened, there is a tendency for an increase in the utilization of ICT in teaching activities within these schools. Conversely, when teacher motivation practices decline or are not adequately addressed, there may be a decrease in the utilization of ICT in teaching activities. The statistically significant relationship ( $p < 0.05$ ) underscores the importance of considering and promoting teacher motivation practices as a means to encourage the effective integration of ICT into the teaching process. It suggests that efforts to improve teacher motivation can potentially contribute to a more widespread and meaningful use of ICT in the educational context, thereby enhancing the quality of teaching and learning

experiences in Nakuru East Sub-County's public secondary schools.

#### 4.4.2 Regression Analysis

Regression analysis was used to evaluate the influence of teacher motivation practices on utilization of ICT in teaching activities. The results are presented in the following tables.

#### 4.4.3 Model Summary

The strength of the relationship between the model and the dependent variable is reported in the model summary table. The linear correlation between the observed and model- predicted values of the dependent variable is represented by R, the multiple correlation coefficient. Its high value denotes a strong connection. The R squared value of the multiple correlation coefficient is the coefficient of determination (Darlington, & Hayes, 2017). The findings are presented in Table 11.

**Table 11**

*Model Summary for Teacher Motivation Practices*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.588a	.346	.344	.52443

a. Predictors: (Constant), Teacher Motivation Practices for ICT Utilization in Teaching Activities. The model summary, as presented in Table 12, provides insights into the relationship between teacher motivation practices and the utilization of ICT in teaching activities. The R-squared value of 0.346 (or 34.4%) indicates that approximately one-third of the variation in ICT utilization can be explained by teacher motivation practices. In other words, 34.4% of the variability in the utilization of ICT in teaching activities is accounted for by the teacher's motivation practices in the model. However, it's important to note that a substantial portion, approximately 65.5%, of the variability remains



unexplained by this model, suggesting that there are likely other factors or variables at play that influence ICT utilization in teaching activities and should be explored in future research.

#### 4.4.4 ANOVA for Teacher Motivation Practices

The model significance was tested at 0.05 test significance level and the finding presented in Table 12.

**Table 12**  
*ANOVA*

Model	Sum of Square	df	Mean Square	F	Sig.
Regression	45.893	1	45.893	166.869	.000 <sup>b</sup>
Residual	86.633	315	.275		
Total	132.527	316			

a. Dependent Variable: Utilization of ICT in Teaching Activities

b. Predictors: (Constant), Teacher Motivation Practices for ICT Utilization in Teaching Activities.

The ANOVA analysis show that the model was statistically significant at 0.05 alpha level,  $r^2 = 0.346$ ,  $F(1,315) = 166.869$ ;  $p < 0.05$ . This implies that the predictor variable, teacher motivating practices, had a substantial impact on the dependent variable, ICT use in instruction. In this study, Analysis of Variance (ANOVA) was employed to assess the significance of the relationship between teacher motivation practices and the utilization of ICT in teaching activities. The use of ANOVA is justified because it allows for the comparison of means across multiple groups or variables, in this case, the impact of teacher motivation practices on ICT utilization. The results presented in Table 13 indicates that the ANOVA model was statistically significant at the 0.05 alpha level, with

a calculated F-statistic of 166.869 ( $p < 0.05$ ). This suggests that teacher motivation practices, as the predictor variable, had a substantial and statistically significant impact on the dependent variable, which is the utilization of ICT in teaching activities. The high F-statistic and low p-value reinforce the idea that there is a significant relationship between teacher motivation practices and ICT use in instruction, indicating the importance of motivational strategies in enhancing the integration of technology in education.

#### 4.4.5 Coefficients

Each independent variable was analyzed in terms of how it influences the dependent variable. The results are displayed in Table 13.

**Table 13**  
*Coefficients*

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	1.601	.091	17.612	.000
Teacher Motivation Practices	.508	.039	12.918	.000

a. Dependent Variable: Utilization of ICT in Teaching Activities.

The teacher motivation practices significantly influence utilization of ICT in teaching activities ( $\beta=0.508;t=12.918;p=0.000$ ). This implies that every one-unit increase in teacher motivation practices affects a linear increase of 0.508 units in Utilization of ICT in teaching activities. Specifically, the analysis reveals that teacher motivation practices have a substantial and statistically significant influence on the utilization of ICT in teaching activities ( $\beta=0.508; t=12.918; p=0.000$ ).

This means that every one-unit increase in teacher motivation practices is associated with

a linear increase of 0.508 units in the utilization of ICT in teaching activities. In practical terms, this suggests that when teachers are motivated through various practices such as recognition, support, and training in ICT integration, they are more likely to effectively incorporate technology into their teaching methods. These results underscore the importance of fostering teacher motivation within educational institutions as a means to enhance the successful integration of ICT in the teaching process. Educational policymakers and school administrators should consider implementing strategies and policies that promote teacher motivation, as it can lead to improved ICT utilization, potentially resulting in more effective and engaging teaching practices in the modern digital age.

#### 4.5 Teacher Training Practices

The second objective of the study was to determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub- County, Kenya. Descriptive analysis was computed using percentages and presented in Table 14.

**Table 14**

*Teacher Training Practices on ICT utilization in Teaching Activities*

	N	S	F	A
	(%)	(%)	(%)	(%)
Training of staff in use of ICT is done in my school.	30.6	36.9	16.1	16.4
Teachers in my school attend ICT seminars.	31.5	41.6	14.8	12.0
Hands- on -Approach in ICT is provided in my school.	37.2	35.6	16.1	11.0
Teachers in my school attend organized projects in use of ICT.	33.9	44.0	11.4	10.8
Teachers in my school are trained on e-learning.	44.5	35.3	10.7	9.5
Teachers in my school are trained on blended learning.	40.7	35.0	15.1	9.1

Teachers in my school attend government sponsored ICT training programmes.	25.6	48.6	15.1	10.7
Teachers attend symposia on utilization of ICT.	39.4	38.2	14.2	8.2
Teachers in my school attend ICT workshops.	25.2	49.8	12.3	12.6
Teachers in my school attend ICT workshops.		49.8	12.3	12.6

The results show that the statement “Training of staff in use of ICT is done in my school” was that 32.5% of respondents reported that training of staff in the use of ICT is done in their schools frequently (16.1%) or always (16.4%), while 67.5% (30.6% never and 36.9 % sometimes). This suggests a proactive approach to staff training in ICT, which is likely to positively impact the utilization of ICT in teaching activities.. This is a positive finding, suggesting that there is a proactive approach to staff training in ICT. Schools that prioritize ICT training for their staff are more likely to have teachers who are confident and capable of integrating technology into their teaching activities.

This result implies that teacher training practices in the use of ICT are relatively strong in Nakuru East Sub-County schools, which could contribute positively to the utilization of ICT in teaching. This finding is in line with Omariba, Ayot and Ondigi (2016) who showed that lack of teacher training contributes to poor use of ICT in teaching in schools. Moreover, Resnick (2012) observed that the most effective way to use ICT in schools is to offer support to teachers who have knowledge in ICT. The trained teacher should be willing to share the new knowledge and skills with the other teachers when they return.

The results show that the statement “Teachers in my school attend ICT seminars” was as follows: A total of 26.8% (14.8% frequently and 12% always) of respondents reported

that teachers in their schools frequently or always attend ICT seminars. While this percentage is lower than the previous statement, it still indicates a notable effort in encouraging teachers' participation in ICT-related seminars. Attending ICT seminars can expose teachers to new technologies and teaching methods. However, it is essential to ensure that the content and quality of these seminars are relevant and effective in enhancing teachers' ICT skills. The implication here is that there is room for improvement in promoting teacher attendance at ICT seminars to further support the integration of technology into teaching.

The results relating to the Statement suggesting that “Hands-on-Approach in ICT is provided in my school” were as follows: Around 27.1% (16.1% frequently and 11 % Always) of respondents indicated that a hands-on approach to ICT is frequently or always provided in their schools. A hands-on approach is valuable as it allows teachers to gain practical experience in using ICT tools and resources. While this is a positive percentage, it suggests that there is still room for improvement in ensuring that hands-on ICT experiences are more widely available to teachers. The implication is that schools should actively promote hands-on ICT training as it can significantly impact teachers' confidence and competence in utilizing technology in their teaching activities. This finding concurd with that of Sharma and Shivanibindal (2013) who discoursed that one-off training is not sufficient and therefore teachers require extensive and on-going exposure to ICT to be able to evaluate and select the most appropriate resources.

In relation to the statement about teachers at my school participating in structured ICT projects, the combined percentage of those who reported "Frequently" and "Always" attending such projects amounted to 22.2%, with 11.4% reporting "Frequently" and 10.8% reporting "Always." The rest of percentage 77.8% reported neither or sometimes.

A total of 22.2% of respondents reported that teachers in their schools frequently or always attend organized projects related to the use of ICT. While this percentage is not as high as in some other statements, it still indicates that there is a considerable effort to engage teachers in ICT-related projects. Participating in such projects can expose teachers to innovative ICT practices and resources. However, the relatively lower percentage suggests that there may be opportunities to expand these project-based learning initiatives to a larger portion of the teaching staff. The implication is that schools could benefit from increasing the involvement of teachers in organized ICT projects to further enhance ICT utilization in teaching activities.

The results show that 20.2% of respondents reported that teachers in their schools receive training on e-learning methods, either frequently or always. The rest of percentage 79.8% reported neither or sometimes. This percentage, while not exceptionally high, does indicate that there is an ongoing effort to equip teachers with the skills necessary for effective e-learning practices. E-learning training is essential for teachers to leverage digital platforms and resources to enhance their teaching. However, there is room for growth in expanding e-learning training opportunities to a more substantial portion of the teaching staff. This implies that encouraging and facilitating e-learning training can further strengthen ICT utilization in teaching activities.

The results show that 24.2% of respondents stated that teachers in their schools frequently or always receive training on blended learning. The rest of percentage 75.8% reported neither or sometimes. Blended learning combines traditional teaching methods with online components, making training in this area valuable for effective ICT utilization. While this percentage is higher than in some previous statements, it suggests that there remains an opportunity to broaden training in blended learning to reach a more

significant proportion of teachers. Therefore, schools could benefit from expanding training opportunities in blended learning to further support the integration of ICT into teaching practices. The finding agrees with Sahoo and Mishra (2012) who reiterates that continued teacher training like e-learning and blended learning are essential for better management in schools.

The findings revealed that 25.8% of respondents mentioned that teachers in their schools frequently or always attend government-sponsored ICT training programs. The rest of percentage 74.2% reported neither or sometimes. These programs can be valuable in providing teachers with up-to-date ICT skills and knowledge. While this percentage is relatively positive, there is still potential to increase teacher participation in such programs. As such, it is implied that schools should actively encourage and facilitate teachers' attendance at government-sponsored ICT training programs to enhance their ICT proficiency.

The findings show that a total of 22.4% of respondents indicated that teachers in their schools frequently or always attend symposia focused on the utilization of ICT. These events offer a platform for knowledge sharing and exposure to best practices in ICT utilization. While this percentage is positive, it also indicates room for growth in increasing teacher participation in such events. Therefore, it is implied that schools could benefit from actively promoting and facilitating teachers' attendance at symposia dedicated to ICT utilization in teaching activities.

The findings reveal that 24.9% of those surveyed indicated that teachers in their schools engage in ICT workshops on a frequent or regular basis (comprising 12.3% who responded "Frequently" and 12.6% who responded "Always"). The majority of

respondents, however, had a different perspective on this matter. This level of engagement signifies a moderate degree of involvement in such workshops, which offer valuable opportunities for hands-on training, exposure to emerging technologies, and the sharing of effective teaching practices among educators. While this outcome is encouraging, it also underscores the potential for improvement in boosting the regularity of teacher participation in ICT workshops. This observation implies a need for educational institutions to proactively promote and facilitate teachers' attendance at these workshops, with the aim of bolstering their ICT competencies and knowledge.

#### 4.5.1 Correlation Analysis of Teacher Training Practices

The relationship between Teacher Training Practices and ICT utilization in teaching activities was analyzed using Pearson Moment Correlation Statistics. The analysis was tested at 0.05 alpha level with 2-tailed level of significance. The results are presented in Table 15.

**Table 15**

*Relationship between Teacher Training Practices and ICT Utilization in Teaching Activities*

		Utilization of ICT in Teaching Activities
Teacher Training Practices	Pearson Correlation	.591**
	Sig. (2-tailed)	.000
	N	317

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The findings specify that there is a statistically significant relationship between teacher training practices and ICT utilization in teaching activities ( $r=0.59$ ;  $p<0.01$ ). This implies



that as teacher training practices increases, ICT utilization in teaching activities also increases. Yet, as teacher training practices declines, ICT utilization in teaching activities similarly declines.

#### 4.5.2 Regression Analysis

The influence of independent variable on the dependent variable was analyzed using linear regression model.

#### 4.5.3 Model Summary

The strength of the association between the model and the dependent variable is reported in the model summary table. The linear correlation between the observed and model-predicted values of the dependent variable is represented by R, the multiple correlation coefficient. Its high value denotes a strong connection. R The squared value of the multiple correlation coefficient is the coefficient of determination (Darlington, & Hayes, 2017). The findings are presented in Table 16.

**Table 16**

*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591 <sub>a</sub>	.349	.347	.52343

a. Predictors: (Constant), Teacher Training Practices for ICT Utilization in Teaching Activities

The model summary shows that 34.9% of variation in Utilization of ICT in Teaching Activities can be explained by Teacher training practices. The residual variation was 65.1% which could be explained with other factors in the model.

#### 4.5.4 ANOVA

The robustness of the model is always analyzed using the F-statistic tests. The results were given in Table 17.

**Table 17**  
**ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	46.223	1	46.223	168.709	.000b
Residual	86.304	315	.274		
Total	132.527	316			

- a. Dependent Variable: Utilization of ICT in Teaching Activities.
- b. Predictors: (Constant), Teacher Training Practices for ICT Utilization in Teaching Activities.

The results indicate that the model was statistically significant at 0.05 alpha level,  $r^2 = 0.349$ ,  $F(1,315) = 168.709$ ;  $p < 0.05$ .

This implies that the predictor variable, teacher training practices, had a substantial impact on the dependent variable, ICT use in instruction.

#### 4.5.5 Beta Coefficients of Teacher Training Practices

The magnitude and the significance of the influence of teacher training practices on utilization of ICT in teaching activities are displayed in Table 18.

**Table 18**

### *Coefficients*

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	1.722	.082	21.095	.000
Teacher Training Practices	.490	.038	12.989	.000

#### a. Dependent Variable: Utilization of ICT in Teaching Activities

The teacher training practices significantly influence utilization of ICT in teaching activities ( $\beta=0.490;t=12.989;p=0.000$ ). This implies that every one-unit increase in teacher training practices increases 0.508 units in Utilization of ICT in teaching activities. It also means that effective and well-structured teacher training programs play a pivotal role in enhancing the integration of ICT into classroom instruction. These findings suggest that investments in training programs that equip teachers with the necessary skills and confidence to effectively use ICT can lead to more widespread and impactful adoption of technology in education. Consequently, educational authorities and institutions in Nakuru East Sub-county should prioritize and invest in high-quality teacher training initiatives to harness the full potential of ICT for improved teaching and learning outcomes.

### **4.6 ICT Resource Allocation Practices**

The third objective was to examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. Percentages were used in the analysis and presentation was made in Table 19.

#### **Table 19**

##### *ICT Resource Allocation Practices on Utilization of ICT in Teaching Activities*

Statement	N	S	F	A
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	(%)	(%)	(%)	(%)
Teachers are provided desktops in my school.	25.2	37.2	16.4	21.1
Teachers are provided with Compact Discs in my school.	37.9	32.2	13.9	16.1
Teachers are provided with printers in my school.	26.5	36.9	15.1	21.5
Teachers are provided with projectors in my school.	20.2	32.7	25.6	21.5
Teachers are provided with laptops in my school.	38.2	23.7	21.5	16.7
Teachers are provided with flash disks in my school.	37.5	24.0	24.6	13.9
Teachers are provided with modems in my school.	36.9	18.9	27.1	17.0
Teachers get access to internet services in my school.	14.8	21.5	32.2	31.5
Teachers get access to electricity in my school.	9.5	23.0	30.0	37.5

Teachers are provided desktops in my school: 37.5% of respondents indicated that teachers are frequently or always provided with desktop computers in their schools while 62.5% are either never or sometimes provided. This suggests a positive resource allocation practice in terms of providing teachers with a key ICT tool for teaching. The finding that 37.5% of respondents indicated that teachers are frequently or always provided with desktop computers is positive. This implies that a significant portion of teachers have access to a key ICT tool for teaching. The implication is that schools with this resource allocation practice are better equipped to support teachers in integrating technology into their teaching methods, potentially leading to enhanced learning experiences for students. This finding resonates with the findings of Wells (2012) who declares that ICT resources allocated to teachers are laptops, desktops, printers and projectors but because they are very limited, it has resulted in poor utilization of ICT in Teaching Activities.

Teachers are provided with Compact Discs in my school: 29.5% of respondents mentioned that teachers frequently or always receive Compact Discs in their schools, while those were the case to 71.5% of the respondents who indicate never or sometimes.

While this percentage is relatively lower, it still indicates a reasonable allocation of teaching materials. While the percentage (29.5%) of teachers receiving Compact Discs is relatively lower, it still indicates a reasonable allocation of teaching materials. This suggests that some schools are making efforts to provide additional resources to support teaching. The implication is that schools could further improve resource allocation by ensuring a wider distribution of teaching materials and digital resources, which can contribute to more diverse teaching methods. This finding is in agreement with Mingaine (2013) who claims that there are limited ICT resources to equip schools with ICT infrastructure and this has been a barrier in use of ICT to support curriculum delivery.

In my school, teachers are equipped with printers. About 36.6% of those surveyed mentioned that teachers regularly or consistently have printer access within their schools, whereas the remaining 63.4% stated that it's either infrequent or occasional. This is a positive outcome as printers are essential for producing teaching materials and resources. With 36.6% of respondents reporting that teachers frequently or always have access to printers, this is a positive outcome. Access to printers is essential for producing teaching materials and resources, allowing teachers to create customized materials to support their lessons. The implication is that schools with such resource allocation practices can foster a more flexible and responsive teaching environment.

The results relating to the statements "Teachers are provided with projectors in my school" recorded the following results. A significant 47.1% of respondents indicated that teachers are frequently or always provided with projectors, while the rest 52.9% reported otherwise. This is a noteworthy result as projectors are essential for interactive and multimedia teaching. The significant 47.1% of respondents indicating that teachers are frequently or always provided with projectors is noteworthy. Projectors are crucial for

interactive and multimedia teaching, enhancing the quality of classroom instruction. The implication is that schools with high projector provision are likely to facilitate more engaging and effective teaching practices.

In my school, teachers are equipped with laptops. Approximately 38.2% of those surveyed reported that teachers regularly or consistently have laptops at their disposal within their educational institutions. This provision enables educators to make effective use of Information and Communication Technology (ICT) in their teaching practices, while the remaining 61.8% reported infrequent or occasional access to laptops. While 38.2% of respondents mentioned that teachers have access to laptops, there is room for improvement. Laptops enable educators to leverage ICT for teaching effectively, and increasing access can lead to more innovative teaching methods and digital content creation. The implication is that schools could invest further in providing laptops to teachers to enhance their ICT capabilities.

The findings concerning the distribution of flash disks to teachers in my school reveal that although the percentage is a bit lower at 38.5%, it still suggests that a significant number of teachers regularly or consistently receive flash disks. These devices are valuable for storing and sharing educational materials. On the other hand, 61.5% of teachers indicated that they only have occasional or infrequent access to laptops. Despite a slightly lower percentage (38.5%), this still indicates a substantial portion of teachers frequently or always receiving flash disks. Flash disks are useful for storing and sharing teaching materials. The implication is that schools can continue providing these resources to support teachers in managing and distributing digital teaching materials effectively.

The results show that about 44.1% of respondents reported that teachers frequently or

always have access to modems. While the rest 53.9% indicated sometimes or never. This is essential for internet connectivity and accessing online teaching resources. The fact that about 44.1% of respondents reported that teachers frequently or always have access to modems is positive. Modems are crucial for internet connectivity, allowing teachers to access online teaching resources. The implication is that schools with this allocation practice are better equipped for integrating web-based materials into their teaching methods.

The results show that a significant 63.7% of respondents mentioned that teachers frequently or always have access to internet services. The rest, 26.3% indicated otherwise. This is a highly positive outcome, as the internet is a valuable resource for instructional materials and research. With a significant 63.7% of respondents indicating that teachers frequently or always have access to the internet, this is highly positive. The internet is a valuable resource for instructional materials and research, and this high access level suggests that teachers have ample opportunities for professional development and enhancing their teaching resources.

The results relating to teachers getting access to electricity in my school, show that a substantial 67.5% of respondents reported that teachers frequently or always have access to electricity. The rest sometimes or never have access to electricity. This is crucial for powering ICT equipment and ensuring uninterrupted teaching activities. The implication is that schools with reliable access to electricity are better positioned to leverage technology for teaching and learning.

The results indicate several positive aspects of ICT resource allocation practices in public secondary schools in Nakuru East Sub-County, Kenya. Access to key ICT

resources such as projectors, internet services, and electricity is notably high, with percentages above 60%. These practices are critical for enhancing the utilization of ICT in teaching activities. However, there is room for improvement in the allocation of certain resources like Compact Discs and laptops, where the percentages are relatively lower. Schools should consider increasing access to these resources to further enhance the use of ICT in teaching.

The findings suggest that resource allocation practices have a significant influence on the utilization of ICT in teaching activities. To improve ICT integration, schools should continue to invest in the necessary resources and ensure that teachers have reliable access to them. Additionally, efforts to provide training and support for teachers in effectively utilizing these ICT resources are essential to maximize their impact on teaching and learning.

#### 4.6.1 Correlation Analysis of ICT Resource Allocation Practices

The relationship between ICT Resource Allocation Practices and ICT utilization in teaching activities was analyzed using Pearson Moment Correlation statistics. The analysis was tested at 0.05 alpha level with 2-tailed level of significance.

The results are presented in Table 20.

**Table 20**

*Relationship between ICT Resource Allocation Practices and ICT utilization in Teaching*

		Utilization of ICT in Teaching Activities
ICT Resource Allocation	Pearson Correlation	.622**
Practices	Sig. (2-tailed)	.000
	N	317

\*\* . Correlation is significant at the 0.01 level (2-tailed).



The findings indicated that there existed a statistically and significant relationship between ICT Resource Allocation Practices and ICT utilization in teaching activities ( $r=0.622$ ;  $p<0.05$ ). This therefore implies that when adequate Allocation related to ICT is provided, ICT utilization in teaching activities will be enhanced. Similarly, when ICT related resources are lacking, ICT utilization in teaching activities will be undermined.

#### 4.6.2 Regression Analysis

The regression was run to establish the influence of ICT Resource Allocation Practices on ICT utilization in teaching activities.

#### 4.6.3 Model Summary

The strength of the association between the model and the dependent variable is reported in the model summary table. The linear correlation between the observed and model-predicted values of the dependent variable is represented by R, the multiple correlation coefficient. Its high value denotes a strong connection. R The squared value of the multiple correlation coefficient is the coefficient of determination (Darlington, & Hayes, 2017). The findings are presented in Table 21.

**Table 21**

*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.622a	.387	.385	.50794

- a. Predictors: (Constant), ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities.

The model summary indicates that 38.7% of variation in Utilization of ICT in Teaching Activities can be explained by ICT Resource Allocation practices. The residual variation was 65.5% which could be explained with other factors in the model.

#### 4.6.4 ANOVA

The significance of the model was analyzed using F statistics tested at 0.05 alpha level. The results are displayed in Table 22.

**Table 22**

*ANOVAa*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.256	1	51.256	198.666	.000b
Residual	81.270	315	.258		
Total	132.527	316			

a. Dependent Variable: Utilization of ICT in Teaching Activities.

b. Predictors: (Constant), ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities.

The ANOVA statistic indicates that the model was statistically significant at 0.05 alpha level,  $r^2 = 0.387$ ,  $F(1,315) = 198.666$ ;  $p < 0.05$ . This implies that the predictor variable, ICT Resource Allocation Practices, had a substantial impact on the dependent variable, ICT use in teaching.

#### 4.6.5 Coefficients

The magnitude and significance of the independent variable on the dependent variable was analyzed using unstandardized beta coefficients. The results are shown in Table 23.

**Table 23**

### *Coefficients*

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	1.477	.092	16.044	.000
ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities.	.516	.037	14.095	.000

a. Dependent Variable: Utilization of ICT in Teaching Activities.

The ICT Resource Allocation Practices significantly influence utilization of ICT in teaching activities ( $\beta=0.516$ ;  $t=14.095$ ;  $p=0.000$ ). This implies that every one-unit increase in ICT Resource Allocation Practices affects a linear increase of 0.516 units in Utilization of ICT in Teaching Activities. This implies that schools with effective allocation of ICT resources, including providing teachers with essential tools such as desktops, projectors, internet access, and electricity, are more likely to witness increased utilization of ICT in their teaching activities. These findings underscore the importance of strategic resource allocation in promoting the integration of technology into classroom instruction, potentially leading to improved educational outcomes and teaching effectiveness.

#### **4.7 School ICT Policies**

The fourth objective was to investigate the influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. Percentages were used in the analysis and presentation was made in Table 24.

**Table 24**

*School ICT Policies on Utilization of ICT in Teaching Activities*

Statement	N	S	F	A
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	(%)	(%)	(%)	(%)
My school has well formulated ICT Policies	23.3	39.7	25.2	11.7
ICT in my school are used to design an manage ICT in teaching	24.0	37.5	24.9	13.6
ICT policies make explicit its educational goals.	17.7	42.9	25.6	13.9
ICT policies sets out schools aim, principles and strategies for delivery of ICT.	20.5	39.1	28.4	12.0
ICT policies form the basis for development of ICT in school.	21.8	35.3	28.4	14.5
ICT policies call for training for teachers.	20.2	38.8	24.9	16.1
ICT policies make its usage very effective.	21.8	36.9	25.9	15.5
ICT policies help teachers apply ICT in an innovative way.	17.7	40.1	26.8	15.5
ICT policies aim at improving the livelihood of schools.	17.7	36.6	33.4	12.3

The finding in Table 25 shows that with regard to the formulation of ICT policies, approximately 37% of respondents believe that their schools have well-formulated ICT policies. This perception suggests that a significant portion of respondents recognize the presence of clear and structured ICT policies within their educational institutions, which can serve as a foundational framework for effective ICT integration in teaching practices. However, there remains an opportunity for improvement, as not all respondents share this positive perception. This finding agrees with that of Makewa, Mareno, Role and Role (2013) who asserted that schools must have a proper ICT policy as it is a blueprint to design and manage use of ICT in teaching. He added to say that the school ICT Policy makes clear its educational aims.

The results show that 38.5% of respondents perceive that ICT policies in their schools are actively employed to design and manage ICT in teaching. This positive perception highlights the importance of these policies in guiding the integration of ICT into teaching activities, suggesting that they play a significant role in shaping effective ICT utilization among educators. This finding agrees with Flanagan and Jacobsen (2013 who observed

that the school ICT Policy should not be created by a single person, but it should involve parents, learners and the community. The policy should be clear on approaches for utilization of ICT. Moreover Ghavifekr, Razak and Ghani (2016) reiterates that in developed countries, the school ICT Policy calls for training for teachers. Teachers are required to be confidence in using ICT in teaching.

A noteworthy 39.5% of respondents believe that their school's ICT policies explicitly articulate educational goals. This finding underscores the significance of ICT policies in providing clear direction for teachers and administrators, helping them align ICT use with specific educational objectives. This finding underscores the significance of ICT policies in providing clear direction for teachers and administrators, ensuring that ICT use aligns with specific educational objectives.

The results show that 40.4% of respondents agree that ICT policies in their schools outline aims, principles, and strategies for the delivery of ICT. This positive perception suggests that these policies provide a comprehensive framework for effectively implementing ICT in teaching activities. This positive perception suggests that these policies provide a comprehensive framework for effectively implementing ICT in teaching activities, ensuring a structured approach to ICT integration. Furthermore, around 42.9% of respondents believe that ICT policies serve as the foundation for ICT development in their schools. This result underscores the critical role of policies in shaping and supporting ICT initiatives within educational institutions. This result emphasizes the critical role of policies in shaping and supporting ICT initiatives within educational institutions, making them integral to ICT growth.

Moreover, about 41% of respondents perceive that their school's ICT policies emphasize the need for teacher training. This acknowledgment underscores the importance of

providing teachers with the necessary training to effectively utilize ICT tools, as highlighted by these policies. This acknowledgment underscores the importance of providing teachers with the necessary training to effectively utilize ICT tools, aligning with the policies' focus on professional development.

Additionally, nearly 41.4% of respondents believe that ICT policies contribute to the effectiveness of ICT utilization in teaching activities. This positive perception suggests that these policies are viewed as instruments that enhance the overall effectiveness of ICT integration. This positive perception suggests that these policies are viewed as instruments that enhance the overall effectiveness of ICT integration, underscoring their role in optimizing teaching practices. This finding agrees with that of UNESCO (2015) who reports that policies can fail to succeed because they are not always effective in schools.

Lastly, a significant majority, approximately 45.7% of respondents, perceive that ICT policies aim at improving the livelihood of schools. This result is particularly encouraging, as it indicates that a substantial portion of respondents recognizes the broader positive impact of ICT policies on the overall quality of education within their schools.

These findings highlight the importance of well-structured ICT policies in guiding and promoting the effective utilization of ICT in teaching activities. While there are positive perceptions regarding the influence of these policies, efforts to ensure their effective communication, implementation, and continuous improvement are essential to maximize their impact in public secondary schools in Nakuru East Sub-County, Kenya.

#### **4.7.1 Correlation Analysis of School Policies**

The relationship between School policies and ICT utilization in teaching activities was

analyzed using person correlation statistics. The analysis was tested at 0.05 alpha level with 2-tailed level of significance. The results are presented in Table 25.

**Table 25**

*Relationship between School Policies and ICT utilization in Teaching Activities*

		Utilization of ICT in Teaching Activities
School policies	Pearson Correlation	.359**
	Sig. (2-tailed)	.000
	N	317

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The results indicate that there existed a statistically significant relationship between School policies and ICT utilization in teaching activities ( $r=0.359$ ;  $p<0.05$ ). This implies that well developed ICT policies at school level could improve its utilization in teaching activities. However, ineffective ICT policies could hamper ICT utilization in teaching activities as shown in Table 19.

#### **4.7.2 Regression Analysis of School Policies**

Regression analysis was employed to determine effect of School policies on ICT utilization in teaching activities.

#### **4.7.3 Model Summary of School Policies**

The strength of the association between the model and the dependent variable is reported in the model summary table. The linear correlation between the observed and model-predicted values of the dependent variable is represented by R, the multiple correlation coefficient. Its high value denotes a strong connection. R The squared value of the multiple correlation coefficient is the coefficient of determination (Darlington, & Hayes,

2017). The findings are presented in Table 26.

**Table 26**

*Model Summary of School Policies*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.359a	.129	.126	.60536

- a. Predictors: (Constant), School policies on Utilization of ICT in Teaching Activities

The model summary shows that 12.9% of variation in utilization of ICT in teaching activities can be explained by school policies. The residual variation was 87.1% which could be explained with other factors in the model.

#### 4.7.4 ANOVA of School Policies

The strength of the model was analyzed using F-statistics. The results are displayed in Table 27.

**Table 27**

**ANOVAa**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.093	1	17.093	46.643	.000b
Residual	115.434	315	.366		
Total	132.527	316			

- a. Dependent Variable: Utilization of ICT in Teaching Activities.  
 b. Predictors: (Constant), School policies on Utilization of ICT in Teaching Activities

The ANOVA computation indicates that the model was statistically significant at 0.05 alpha level,  $r^2 = 0.129$ ,  $F(1,315) = 46.643$ ;  $p < 0.05$ . This implies that the predictor



variable, school policies, had a significant influence on the dependent variable, ICT use during instruction.

#### 4.7.5 Coefficients

The significance of the independent variable on how it influences the dependent variable is shown using the unstandardized beta coefficients in Table 28.

**Table 28**  
*Coefficients*

	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
(Constant)	2.031	.105	19.296	.000
School policies	.290	.043	6.830	.000

a. Dependent Variable: Utilization of ICT in Teaching Activities.

The school policies significantly influence utilization of ICT in teaching activities ( $\beta=0.290$ ;  $t=6.830$ ;  $p=0.000$ ). This implies that every one-unit increase in school policies affects a linear increase of 0.290 units in Utilization of ICT in Teaching Activities

#### 4.8 Utilization of ICT in Teaching Activities

The dependent variable for the study was utilization of ICT in teaching activities.

**Table 29**  
**Utilization of ICT in Teaching Activities**

Statement	N (%)	S (%)	F (%)	A (%)
Teachers use internet to prepare teaching resources	4.1	35.3	42.9	17.7
Teachers use computers to prepare marking schemes	13.6	30.6	34.7	21.1
Teachers use computers to prepare lesson notes.	10.4	30.9	40.1	18.6
Teachers use computers to prepare teaching aids for learners.	12.6	30.6	40.4	16.4
Teachers use printers to print teaching and learning resources.	7.3	27.1	42.0	23.7
Teachers use power point presentations during teaching and	8.5	30.3	48.3	12.9

learning.

Teachers use computers to manage students' work.	18.3	33.8	31.2	16.7
Teachers use computers to set exams.	5.0	16.1	42.6	36.3

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According to Table 30, Teachers use the internet to prepare teaching resources, with positive responses totaling 60.6%. This signifies an encouraging trend where a significant majority of teachers are embracing digital tools for resource preparation. This shift highlights their willingness to adapt to the digital era, incorporating internet-based resources into their teaching methods, which can enhance the quality and diversity of materials available for their students. This finding resonates with Khan (2012) who affirms that the best practices on use of ICT must be shared regularly to encourage more and more teachers to integrate ICT in their lessons.

Regarding the utilization of computers for preparing marking schemes, there is a positive response rate of 55.8%. This finding indicates that over half of the surveyed teachers are actively leveraging technology to create marking schemes. It reflects openness to integrating technology into assessment-related tasks, potentially leading to more efficient and precise grading processes.

Teachers are also utilizing computers for preparing lesson notes, with a combined positive response rate of 58.7%. This statistic highlights that more than half of the teachers are embracing technology for this purpose. It showcases their commitment to improving the quality of their teaching materials, which can contribute to enhanced learning experiences for their students. This view corresponds to that of Sarkar (2012) who emphasizes that education managers should support the use of ICT in schools by providing ICT resources to teachers. In terms of creating teaching aids for learners using

computers, 56.8% of teachers responded positively. This majority demonstrates a commitment to employing technology to create engaging and interactive teaching aids. Such practices can enhance the overall learning process, making it more dynamic and enjoyable for students.

A substantial 65.7% of teachers use printers for educational materials, which is a noteworthy finding. This suggests that, despite the digital advancements, many teachers still rely on physical resources in addition to digital ones, indicating a blended approach to teaching that incorporates both traditional and digital methods. Presentations with the aid of the PowerPoint application software are frequently used by teachers, with a positive response rate of 61.2%. This high adoption rate signifies that a significant portion of educators incorporate visual aids into their teaching, which can lead to enhanced visual learning and student engagement.

However, when it comes to using computers for managing students' work, the positive response rate is 47.9%, indicating a lower adoption rate compared to some other technology-related tasks. This suggests that there is room for improvement in utilizing technology for student work management. This finding corresponds with those of Khan and Hasan (2013) who professed that ICT resources are very scarce in many schools in Bangladesh hence many teachers are not able to make appropriate use of them while others are not willing to try because of anxiety, lack of interest and lack of motivation.

Finally, the highest positive response rate is observed in using computers to set exams, with an impressive 78.9%. This finding underscores a strong inclination among teachers to streamline the assessment process by leveraging technology, which can lead to increased efficiency and accuracy in examination procedures.

## 4.9 Multiple Regression Analysis

Estimation of influence in selected school management practices on utilization of ICT in teaching activities was computed using regression analysis. The finding is shown in subsequent tables.

### 4.9.1 Model Summary

**Table 30**

*Model Summary*

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.703 <sup>a</sup>	.495	.488	0.463

- a. Predictors: (Constant), School policies on Utilization of ICT in Teaching Activities, ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities., Teacher Training Practices for ICT Utilization in Teaching Activities., Teacher Motivation Practices for ICT Utilization in Teaching Activities.

According to model summary table, the R Square value is 0.495 and Adjusted R Square is 0.488. This indicates that 48.8% of utilization of ICT in teaching activities can be explained by teacher motivation practices, teacher training practices, ICT resource allocation practices and school policies with a standard error of 0.463.

### 4.9.2 Model Significance

The model was tested for its robustness at 0.05 alpha level. Its results are presented in Table 31.

**Table 31**

*ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	65.568	4	16.392	76.380	.000b
Residual	66.959	312	.215		

Total	132.527	316
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- a. Dependent Variable: Utilization of ICT in Teaching Activities.
- b. Predictors: (Constant), School policies on Utilization of ICT in Teaching Activities, ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities., Teacher Training Practices for ICT Utilization in Teaching Activities., Teacher Motivation Practices for ICT Utilization in Teaching Activities.

The findings show that the model was statistically significant at 0.05 alpha level,  $r^2 = 0.495$ ,  $F(4,312) = 76.380$ ;  $p < 0.05$ . This implies that the predictor variables (teacher motivation practices, teacher training practices, ICT resource allocation practices and school ICT policies) contributed significantly to the dependent variable, utilization of ICT in teaching activities.

#### 4.9.3 Coefficients

Each of the predictor variables (teacher motivation practices, teacher training practices, ICT resource allocation practices and school ICT policies) was analyzed to show how they influenced Utilization of ICT in Teaching Activities.

The results are presented in Table 32.

**Table 32**

*Beta Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	1.172	.100	11.711	.000		
Teacher Motivation Practices	.163	.056	2.911	.004	.385	2.598
Teacher Training Practices	.202	.050	4.047	.000	.446	2.242
ICT resource allocation	.313	.042	7.506	.000	.639	1.565
School Policies	.010	.039	.266	.791	.685	1.459

a. Dependent Variable: Utilization of ICT in Teaching Activities.

The results in Table 33 shows that each independent variable had no multicollinearity indicators since all were within the acceptable range (Variance inflation factor less than 10).

The most significant predictor of Utilization of ICT in teaching activities was ICT resource allocation practices teacher training practices with ( $\beta = 0.313$ ;  $t = 7.506$ ;  $p=0.000$ ). This predictor was followed by Teacher Training Practices at ( $\beta = 0.202$ ;  $t = 4.047$ ;  $p=0.000$ ). The results indicate that ICT resource allocation practices and teacher training practices are the most significant predictors of ICT utilization in teaching activities. Specifically, ICT resource allocation practices had the highest influence compared to other predictors examined in this study, suggesting that effective allocation of resources and comprehensive teacher training play crucial roles in enhancing ICT utilization in teaching activities.

Moreover, teacher motivation practices significantly influence utilization of ICT in teaching activities ( $\beta=0.163$ ;  $t=2.911$ ;  $p=0.004$ ) and teacher training practices significantly influence utilization of ICT in teaching activities ( $\beta=0.202$ ;  $t=4.047$ ;  $p=0.000$ ). Similarly, However, school policies do not significantly influence utilization of ICT in teaching activities ( $\beta=0.010$ ;  $t=0.266$ ;  $p=0.791$ ). This implies that when ICT resources are allocated to teachers, teaching activities will be exciting. In Angola, the absence of ICT in every school constrains the activities teachers can undertake with these resources (Adu & Olatundun, 2013). Armstrong, 2012) asserts that schools should be provided with excellent facilities, technical back-up like flash disks, compact disks and modems to

enable them access internet.

#### **4.9.4 Hypothesis Testing**

In this section, the researcher assesses the statistical significance of the relationships between various independent variables, namely Teacher Motivation Practices, Teacher Training Practices, ICT Resource Allocation Practices, School Policies, and the dependent variable, Utilization of ICT in Teaching Activities, in public secondary schools in Nakuru East Sub-County, Kenya. The researcher evaluates whether the null hypotheses (Ho) can be rejected or accepted based on the p-values obtained from the regression analysis. The golden rule guiding the decisions was to reject the null hypothesis when the p-value is less than 0.05 ( $p < 0.05$ ) and accept the null hypothesis when the p-value is greater than 0.05 ( $p > 0.05$ ).

The first hypothesis 1 (HO1) read “There is no statistically significant influence of teacher motivation practices on the utilization of ICT in teaching activities”. To test (HO1), the researcher examined the beta value and associated p-value for the independent variable "Teacher Motivation Practices." The beta value is 0.163, and the p-value is 0.004. Since  $p < 0.05$  (p-value is less than the significance level of 0.05), the study rejects HO1. This suggests that there is a statistically significant influence of teacher motivation practices on the utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. This finding concurs with that of Laaria (2013) who reports that teachers need to be motivated so that they can actively use ICT in teaching.

The principals should also provide support to teachers for them to feel confident in using ICT. The second hypothesis (HO2) was “There is no statistically significant influence of teacher training practices on the utilization of ICT in teaching activities”. For HO2, the

beta value and its associated p-value for the independent variable "Teacher Training Practices" was analyzed. The beta value is 0.202, and the p-value is 0.000. Since  $p < 0.05$  (p-value is less than the significance level of 0.05), the study rejects HO2. This indicates that there is a statistically significant influence of teacher training practices on the utilization of ICT in teaching activities in the studied schools. This finding concurs with that of Tondeur (2015) who reported that ICT training has an important influence on how it is used in schools. Therefore, the most effective teacher training practices are hands-on on ICT use.

The third Hypothesis (HO3) read "There is no statistically significant influence of ICT resource allocation practices on the utilization of ICT in teaching activities". To evaluate HO3, the beta value and p-value for the independent variable "ICT Resource Allocation Practices" was considered. The beta value is 0.313, and the p-value is 0.000. Given that  $p < 0.05$ , the study rejects HO3. This implies that there is a statistically significant influence of ICT resource allocation practices on the utilization of ICT in teaching activities. This finding agrees with that of Harrison (2017) who reports that use of ICT resources in teaching in schools is a necessary to the integration of ICT in education as it promotes class understanding and discussion about difficult concepts. Effective adoption and integration of ICT into teaching in schools depends mainly on the availability and accessibility of ICT resources such as hardware and software. Obviously, if teachers cannot access ICT resources, then they will not use them.

The fourth hypothesis (HO4) was "There is no statistically significant influence of school ICT policies on the utilization of ICT in teaching activities". For HO4, we analyze the beta value and its associated p-value for the independent variable "School Policies." The beta value is 0.010, and the p-value is 0.791. Since  $p > 0.05$  (p-value is



greater than the significance level of 0.05), the study fails to reject HO4. This suggests that there is no statistically significant influence of school ICT policies on the utilization of ICT in teaching activities in the surveyed schools. The finding is not in agreement with Makewa, Mareno, Role and Role (2013) who emphasize that schools must have a proper ICT policy as it is a blueprint to design and manage use of ICT in teaching. He added to say that the school ICT Policy makes explicit its educational goals.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the findings and the conclusions drawn from them and makes recommendations for stakeholders that can be implemented to help address the problem identified in the study.

#### **5.2 Summary of the Findings**

This section was guided by four objectives. The purpose of this study was to establish the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. To determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-county, Kenya. To examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. To investigate the influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. A summary of the major findings arising from the analysis of these variables is presented in this section.

##### **5.2.1 Teacher Motivation Practices on Utilization of ICT in Teaching Activities**

The first objective of this study was to establish the influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. The findings of the study concerning this objective revealed that 38.5% of teachers who utilize ICT are sometimes given freedom to develop skills and abilities in their school while 15% of teachers are never given freedom to

develop skills and abilities. It was also noted that 39.6% of teachers who utilize ICT were sometimes given responsibilities in their school, while 19.6% of teachers were never given responsibilities in their school.

From the analyzed results, it was noted that 42.9% of teachers who utilize ICT never get award in form of certificates in their schools but 49.8% of the teachers who utilize ICT were never given awards at the end of the year. Likewise, 48.3% of teachers who utilize ICT were never given promotion. However, from the findings, it was seen that 43.2% of teachers who utilize ICT sometimes receive technical support, while 27.1% never receive technical support. Moreover, 45.4% of teachers who utilize ICT are sometimes supported by being provided with teaching resources in ICT. Furthermore 35.3% of the teachers who utilize ICT are never offered further training in ICT integration, while 45.3% of teachers sometimes get access to good working conditions for them to utilize ICT resources. The null hypothesis that there is no statistically significant influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County Kenya, was rejected. The threshold was rejected at 0.05 alpha level.

### **5.2.2 Teacher Training Practices on Utilization of ICT in Teaching Activities**

The second objective of this study was to determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. From the study findings of this objective, it was affirmed that 36.9% of teachers were trained in use of ICT while 30.6% were not trained.

Besides, 41.6% of teachers attend ICT seminars while 31.5% never attend ICT seminars while 49.8% attend ICT workshops. The study also found that 35.6% of teachers were sometimes provided with hands- on - approach in ICT in their school while 37.2% were

never provided with hands- on - approach in ICT. Likewise, 44% of the teachers sometimes attend organized projects in use of ICT while 33.9% never attend organized projects in use of ICT. Moreover, 48.6% of the teachers sometimes attend government sponsored ICT training programmes while 25.6% never attend government sponsored ICT training programmes.

The finding showed that 35.3% of the teachers in their school were sometimes trained on e-learning, while 44.5% were never trained on e-learning. Also, 35% of the teachers were sometimes trained on blended learning while 40.7% were never trained on blended learning. On the other hand, 38.2% of the teachers sometimes attend symposia on utilization of ICT whereas 39.4% never attend symposia on utilization of ICT. The null hypothesis that there is no statistically significant influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya, was rejected at 0.05 alpha level.

### **5.2.3 ICT Resource Allocation Practices on Utilization of ICT in Teaching Activities**

The third objective of this study was to examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. In relation to this objective, it can be revealed that 37.2% of teachers are sometimes provided with desktops in their school while 25.2% were never provided. Besides, 32.2% of the teachers were sometimes provided with compact discs as 37.9% were never provided with compact discs. Moreover, 36.9% of the teachers were sometimes provided with printers while 26.5% were never provided. It was established that 32.7% of teachers were sometimes provided with projectors as 20.2% were never provided with projectors in their school.

In the same token, 23.7% of the teachers were sometimes provided with laptops as 38.2% were never provided with laptops in their school. Correspondingly, it was reported from the findings that 24% of the teachers were sometimes provided with flash disks while 37.5% were never provided with flash disks in their school. The study similarly revealed that 18.9% of the teachers were sometimes provided with modems as 36.9% were never provided with modems in their school. In addition, 21.5% of the teachers sometimes get access to internet services in their school while 14.8% never get access to internet services in their school. Despite the above findings, it was also noted that 23% of the teachers sometimes get access to electricity in their school as only 9.5% never get access to electricity in their school. The most significant predictor of Utilization of ICT in teaching activities was ICT resource allocation practices teacher training practices. The null hypothesis that there is no statistically significant influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya was rejected at threshold of 0.05 alpha level.

#### **5.2.4 School ICT Policies on Utilization of ICT in Teaching Activities**

The fourth objective of this study was to investigate the influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. The findings for this fourth objective from the study revealed that 39.7% of the teachers sometimes have well formulated ICT policies as 23.3% of them do not have well formulated ICT policies. In addition, 37.5% of the teachers sometimes use ICT policies to design and manage ICT in teaching while 24% of the teachers never used to design and manage ICT in teaching.

The study also found out that 39.1% indicated that ICT policies sometimes sets out schools aim, principles and strategies for delivery of ICT while 20.5% specified that ICT policies never set out schools aim, principles and strategies for delivery of ICT. In the same vein, 35.3% of the ICT policies sometimes form the basis for development of ICT as 21.8% never forms the basis for development of ICT in school. Moreover, it can be observed that ICT policies sometimes calls for training for teachers which was represented by 38.8% of the respondents while 20.2% of them reported that ICT policies never calls for training for teachers.

Furthermore, 36.9% of respondents settles that ICT policies sometimes makes its usage remarkably effective although 21.8% opine that ICT policies never makes its usage remarkably effective. Moreover, 40.1% of respondents affirmed that ICT policies sometime help teachers apply ICT in an innovative way whereas 17.7% affirm that ICT policies never help teachers apply ICT in an innovative way. Finally, 36.6% of respondents acknowledged that ICT policies sometimes aims at improving the livelihood of schools although 17.7% reported that ICT policies never aimed at improving the livelihood of schools.

The null hypothesis that there is no statistically significant influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya was rejected at the threshold of 0.05 alpha level.

### **5.3 Conclusions**

The study made the following conclusions.

The first objective of the study was the influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. From the findings of this study, it can be concluded that teachers were

never given freedom to develop skills and abilities nor given responsibilities in their schools. In addition, teachers never get awards in form of certificates at the end of the year when they use ICT in teaching neither were they given promotion nor receive any technical support. Moreover, they were sometimes supported by being provided with ICT resources in teaching but they were never offered further training in ICT integration. In regard to working conditions, teachers could not get access to good working conditions. This implies that when teachers are not motivated, it disadvantage the overall uptake and utilization of ICT in schools.

The second objective of this study was to determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. From the study findings of this objective, it was concluded that when teachers lack basic training on ICT integration the teaching will be unsustainable. In addition, when teachers do not attend any training to improve on their skills on ICT, its integration during teaching will be unproductive. Finally, teachers who lack training on e-learning as well as blended learning may hinder ICT integration during learning.

The third objective of this study was to examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. In relation to this objective, it was concluded that resource allocation affects the teaching activities in the area. It implies that when ICT accessories are lacking as well as electricity, utilizing ICT in teaching activities will be weakened. This means that when resources such as Laptops, flash disks and projectors are lacking, teachers will have challenges when they are utilizing ICT in teaching activities.

It also means that when teachers lack requisite resources related to information technology, utilization of ICT during teaching will be ineffective.

The fourth objective of this study was to investigate the influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. It is concluded that ICT policies do not set out schools aim, principles and strategies for delivery of ICT. This means that when the school ICT policies are not well formulated, utilization of ICT in teaching activities will be ineffective. This means that any ICT policy that does not bring effective results as well as that which does not purpose at advancing the excellence of schools should be looked into.

#### **5.4 Recommendations**

The study makes the following recommendations on policy and practice based on the findings.

##### **5.4.1 Recommendations for Policy and Practice**

The purpose of this study was to establish the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

- i. From the findings of this study, the study made recommendations to the Ministry of Education to implement policies on teacher motivation for public secondary schools and make provisions for upgrading the existing teacher motivation practices. This could significantly raise the level of utilization of ICT in teaching practices in schools. The study recommends in relation to teacher motivation for practice that the schools management support the teachers by motivating and encouraging them use the ICT resources in teaching.



- ii. The second objective of this study was to determine the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. From the study findings of this objective, the study made recommendations to the policy makers and the Ministry of Education and the TSC to organize for the training of teachers in the usage of ICT so as to improve the teaching practices since most teachers are not trained in the usage of ICT. The study also recommends in relation to teacher training practices for practice that the schools management explore more ways through which teachers can be trained effectively on utilization of ICT in teaching practices.
- iii. The third objective of this study was to examine the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. In relation to this objective, most teachers are not provided with the ICT resources that are used in teaching practices. The study therefore recommends that the policy makers at the government level to implement guidelines on the provision of ICT resources to teachers for use in teaching practices. The study recommends concerning ICT resource allocation for practice that, ICT resources be provided to teachers and schools to be equipped with these resources by the management. This will have a considerable effect on teaching activities.
- iv. The fourth objective of this study was to investigate the influence of school ICT policies on the utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. Based on this objective, the study recommends that the policy makers and the Ministry of Education and the TSC to formulate

working policies on the utilization on ICT with the view of improving the teaching practices in public schools. The study finally recommends in relation to school ICT policies for practice that the management of the schools should come up with school ICT policies that enable teachers utilize ICT in teaching practice.

#### **5.4.3 Recommendations for Future Studies**

The purpose of this study was to establish the influence of selected school management practices on utilization of Information Communication Technology in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

The first objective of the study was the influence of teacher motivation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. The study established that several motivating factors affected utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. However, the study focused mostly on the factors within the school environ but factors within the Sub-County level were not considered. Therefore, the study recommends for future studies to consider this construct.

The second objective of the study was the influence of teacher training practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. It was evident that most teachers were not fully trained in utilization of ICT in teaching. Factors such as teacher performances were not examined. Therefore, the study recommends for future studies that, effects of teacher performance on utilization of ICT in teaching activities be studied in the area.

The third objective for the study was the influence of ICT resource allocation practices on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya.

The study recommends for future studies that the study should be on the availability of ICT resources in public schools.

Finally, the last objective of the study was on influence of school ICT policies on utilization of ICT in teaching activities in public secondary schools in Nakuru East Sub-County, Kenya. The study recommends for future studies that the study should be done on the teacher workload on utilization of ICT. This factor was not discussed in the study but it is considered to affect the use of ICT during teaching practices.

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## APPENDICES

### Appendix 1: Introduction Letter

Birir Chepngeno Florence

P.O Box 1822, Nakuru

Date

The principal

Dear sir/madam

Re: Data Collection for Research Purposes

I am a masters student of kabarak university Nakuru. I am writing a research proposal on the Influence Of Selected School Management Practices On Utilization Of Information Communication Technology In Teaching Activities In Public Secondary Schools in Nakuru East Sub-County, Kenya. This study involves public secondary schools and principals. Questionnaires will be administered to both teachers and principals.

I am therefore writing to request you to allow the sampled respondents to participate in this study at an agreed date. I take this opportunity to assure you that the data solicited will confidentiality handled and only used for the purposes of this study. Thank you.

Yours faithfully,

Birir chepngeno Florence GMME/M/1399/12/15

## Appendix II: Questionnaire for Principals

### Section A: Demographics

Put a tick (☑)

1. Gender;

Male.

Female

2. Age

25 years or less  26-35 years  36-45 years

above 45 years

3. Your highest academic level.

PhD  Master Degree  Undergraduate  Diploma

Others

4. For how long have you been a principal in this school?

Less than 1 year;  1-5 years;  6-10 years  11-15years

More Than 16 years

### Section B: Availability of Selected School Management Practices on Utilization of ICT

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on the appropriate response which is relevant to you.

S/NO	Statement	A (4)	F (3)	S (2)	N (1)
1	I provide ICT resources to teachers in my school.				
2	There is accessible internet in my school.				
3	I provide certificates to teachers who use ICT in my school.				
4	I promote my teachers when they use ICT in teaching.				
5	I motivate teachers who use ICT in my school.				



6	There are enough ICT resources used for teaching in my school.				
7	Teachers get access to ICT resources in my school for teaching.				
8	The school organizes ICT training for teachers.				
9	Teachers in my school attend workshops, seminars and conferences to be trained in use of ICT.				
10	Teachers use ICT in teaching in my school.				

### Appendix III: Questionnaire for Teachers

#### Section A: Demographics.

Put a tick (☑)

1. Gender; Male.  Female
2. Age ; 25 years or less  26-35 years  36-45 years   
above 45 years
3. Your highest academic level. PhD  Master degree level;   
undergraduate degree level;  diploma level;  others;
4. For how long have you been teaching in this school?  
Less than 1 year;  1-5 years;  6-10 years;  11-15years;  more than  
16 years

#### Section B: Utilization of ICT in Teaching Activities.

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on the appropriate response which is relevant to you.

No	Statement	A (4)	F (3)	S (2)	N (1)
1.	Teachers use internet to prepare teaching resources.				
2.	Teachers use computers to prepare marking schemes.				
3.	Teachers use computers to prepare lesson notes.				
4.	Teachers use computers to prepare teaching aids for learners.				
5.	Teachers use printers to print teaching and learning resources.				
6.	Teachers use power point presentations during teaching and learning.				
7.	Teachers use computers to manage students work.				
8.	Teachers use computers to set exams.				

**Section C: Teacher Motivation Practices for ICT Utilization in Teaching Activities.**

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on appropriate response which is relevant to you.

S/NO	Statement	A (4)	F (3)	S (2)	N (1)
1	Teachers who utilize ICT are given freedom to develop skills and abilities in my school.				
2	Teachers who utilize ICT are given responsibilities in my school.				
3	Teachers who utilize ICT are awarded certificates in my school.				
4	Teachers who utilize ICT are supported by being provided with teaching resources in ICT.				
5	Teachers get access to good working conditions for them to utilize ICT.				
6	Teachers who utilize ICT receive technical support.				
7	Teachers who utilize ICT are offered further training in ICT integration.				
8	Teachers who utilize ICT are given promotion.				
9	Teachers who utilize ICT are given awards at the end of the year.				

**Section D: Teacher Training Practices for ICT Utilization in Teaching Activities.**

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on appropriate response which is relevant to you.

S/NO	Statement	A (4)	F (3)	S (2)	N (1)
1	Training of staff in use of ICT is done in my school.				
2	Teachers in my school attend ICT seminars.				
3	Hands- on -Approach in ICT is provided in my school.				
4	Teachers in my school attend organized projects in use of ICT.				
5	Teachers in my school are trained on e-learning.				
6	Teachers in my school are trained on blended learning.				
7	Teachers in my school attend government sponsored ICT training programmes.				
8	Teachers attend symposia on utilization of ICT.				
9	Teachers in my school attend ICT workshops.				

**Section E: ICT Resource Allocation Practices related to Utilization of ICT in Teaching Activities**

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on appropriate response which is relevant to you.

S/NO	Statement	A (4)	F (3)	S (2)	N (1)
1	Teachers are provided desktops in my school.				
2	Teachers are provided with Compact Disks in my school.				
3	Teachers are provided with printers in my school.				
4	Teachers are provided with projectors in my school.				
5	Teachers are provided with in my school.				
6	Teachers are provided with flash disks in my school.				
7	Teachers are provided with modems in my school.				
8	Teachers get access to internet services in my school.				
9	Teachers get access to electricity in my school.				

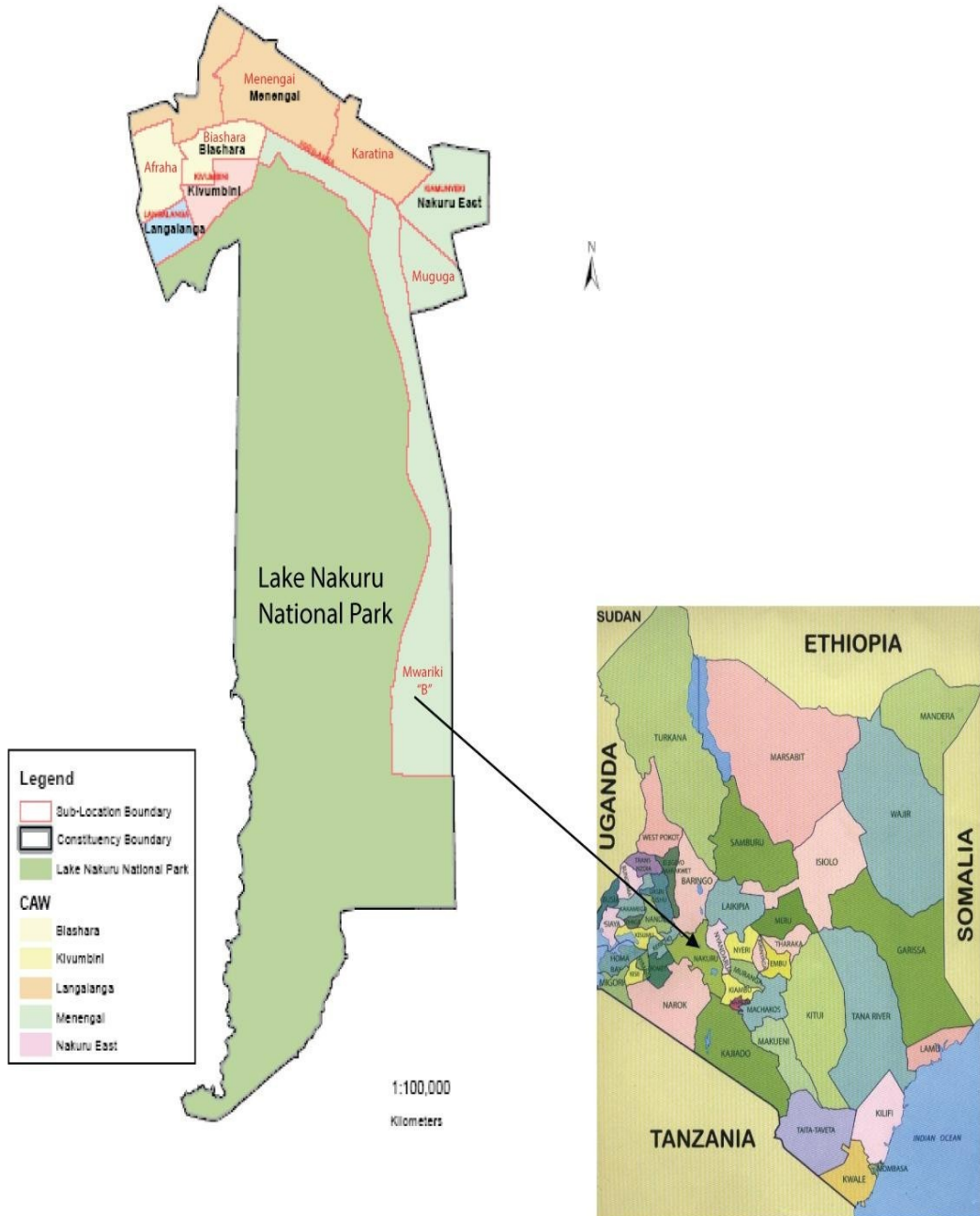
### Section F: School policies on Utilization of ICT in Teaching Activities

The following section consists of items with a response format of a 4- point Likert- Scale of; 4- Always (A),3- Frequently (F),2-Sometimes (S) and 1-Never (N). Put a tick (☑) or (×) on appropriate response which is relevant to you.

S/NO	Statement	A (4)	F (3)	S (2)	N (1)
1	My school have well formulated ICT policies.				
2	ICT policies in my school are used to design and manage ICT in teaching.				
3	ICT policies makes explicit its educational goals.				
4	ICT policies sets out schools aim, principles and strategies for delivery of ICT.				
5	ICT policies forms the basis for development of ICT in school.				
6	ICT policies calls for training for teachers.				
7	ICT policies makes its usage very effective.				
8	ICT policies helps teachers apply ICT in an innovative way.				
9	ICT policies aims at improving the livelihood of schools.				

## Appendix IV: Map of Nakuru East Sub-County

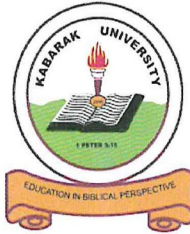
IEBC REVISED NAKURU TOWN EAST CONSTITUENCY COUNTY ASSEMBLY WARDS



## Appendix V: University Authorization Letter

# KABARAK

Private Bag - 20157  
KABARAK, KENYA  
<http://kabarak.ac.ke/institute-postgraduate-studies/>



# UNIVERSITY

Tel: 0773 265 999  
E-mail: [directorpostgraduate@kabarak.ac.ke](mailto:directorpostgraduate@kabarak.ac.ke)

### BOARD OF POSTGRADUATE STUDIES

11<sup>th</sup> July, 2019

The Director General  
National Commission for Science, Technology & Innovation (NACOSTI)  
P.O. Box 30623 – 00100  
NAIROBI

Dear Sir/Madam,

**RE: FLORENCE BIRIR- REG. NO. GMME/M/1399/12/15**

The above named is a Master of Education (Education Management & Leadership) student at Kabarak University in the School of Education. She is carrying out research entitled “*Influence Selected School Management Practices on Utilization of Information Communication Technology in Teaching Activities in Public Secondary Schools in Nakuru East Sub- County, Kenya*”. She has defended her proposal and has been authorized to proceed with field research.

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide her with a research permit to enable her to undertake her research.

Thank you.

Yours faithfully,



**Dr. Betty Jeruto Tikoko**  
**DIRECTOR, POSTGRADUATE STUDIES**



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#### Kabarak University Moral Code

*As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)*



Appendix VI: NACOSTI Research Permit



REPUBLIC OF KENYA

Ref No: 732313

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION



Date of Issue: 14/August/2019

RESEARCH LICENSE



This is to Certify that Ms.. Florence Birir of Kabarak University, has been licensed to conduct research in Nakuru on the topic: " INFLUENCE OF SELECTED SCHOOL MANAGEMENT PRACTICES ON UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY IN TEACHING ACTIVITIES IN PUBLIC SECONDARY SCHOOLS IN NAKURU EAST SUB-COUNTY, KENYA" for the period ending : 14/August/2020.

License No: NACOSTI/P/19/300

732313

Applicant Identification Number.

*[Signature]*

Director General  
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION





Appendix VII: Ministry of Education Authorization Letter

**MINISTRY OF EDUCATION**  
**STATE DEPARTMENT OF BASIC EDUCATION**

Telegrams: "EDUCATION",  
Telephone: 051-2216917  
When replying please quote



COUNTY DIRECTOR OF EDUCATION  
NAKURU COUNTY  
P. O. BOX 259,  
NAKURU.

Ref.CDE/NKU/GEN/4/21/VOL.VI/48

3<sup>rd</sup> September,2019

TO WHOM IT MAY CONCERN

**RE: RESEARCH AUTHORIZATION -FLORENCE BIRIR -**  
**PERMIT NO. NACOSTI/P/19/300**

Reference is made to letter NACOSTI/P/19/300  
14<sup>th</sup> August, 2019.

Authority is hereby granted to the above named to carry out research on  
*"Influence of selected school management practices on utilization of  
information communication technology in teaching activities in public  
secondary school in Nakuru East Sub-County, Kenya"* for a period ending  
14<sup>th</sup> August, 2020

Kindly accord her the necessary assistance.

**AKOKO OKAYO**  
**FOR: COUNTY DIRECTOR OF EDUCATION**  
**NAKURU**



Copy to:

✓ Kabarak University  
P.O Private Bag  
KABARAK

Appendix VIII: County Commission Authorization Letter



**THE PRESIDENCY  
MINISTRY OF INTERIOR AND  
CO-ORDINATION OF NATIONAL GOVERNMENT**

Telegram: "DISTRICTER" Nakuru  
Telephone: Nakuru 051-2212515  
When replying please quote

COUNTY COMMISSIONER  
NAKURU COUNTY  
P.O. BOX 81  
NAKURU.

Ref No. CC. SR.EDU 12/1/2/VOL.V/34

4<sup>th</sup> September, 2019

Deputy County Commissioner  
**NAKURU EAST**

**RE: - RESEARCH AUTHORIZATION - MS. FLORENCE BIRIR**

The above named from Kabarak University has been authorized to carry out research on **"INFLUENCE OF SELECTED SCHOOL MANAGEMENT PRACTICES ON UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY IN TEACHING ACTIVITIES IN PUBLIC SECONDARY SCHOOLS IN NAKURU EAST Sub County** for a period ending 4<sup>th</sup> August 2020.

Please accord her all the necessary support to facilitate the success of her research.

**PATRICK OMUSE  
FOR: DEPUTY COUNTY COMMISSIONER  
NAKURU COUNTY**

## Appendix IX: Evidence of Conference



# KABARAK UNIVERSITY

## Certificate of Participation

### Awarded to

**FLORENCE CHEPNGENO BIRIR**

For successfully participating in the 13<sup>th</sup> Annual Kabarak University International Research Conference held on 24<sup>th</sup> October 2023 and presented a paper entitled *“The Influence of Teacher Motivation practices on utilization of ICT in teaching activities in public Secondary Schools in Nakuru East Sub-count, Kenya.”*

### Conference Theme

Leveraging paradigm shift in research for transformation and sustainable Development in Education in post Covid- Era.

**Prof. Frederick B.J.A Ngala**  
Dean, School of Education  
& Director Music  
Performance

**Dr. Phillip Nyawere**  
Ag. Director - Research,  
Innovation and Outreach

#### Kabarak University Moral Code

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord.

(1 Peter 3:15)



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## Appendix X: List of Publication



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### INFLUENCE OF TEACHER MOTIVATION PRACTICES ON UTILIZATION OF ICT IN TEACHING ACTIVITIES IN PUBLIC SECONDARY SCHOOLS IN NAKURU EAST SUB-COUNTY, KENYA

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**Abstract:** This study investigates the influence of school management practices on ICT utilization in public secondary schools in Nakuru East Sub-County, Kenya. The study design was appropriate to this study because it assisted to describe how principals and teachers utilize ICT in secondary schools. A structured questionnaire entitled *Teachers Questionnaire* was used to gather information. The data were processed using tools in *Statistical Package for Social Sciences (SPSS) version 22 computer programme*. The analysis of variance (ANOVA) was employed to assess the significance of the relationship between teacher motivation practices and the utilization of Internet of Things (ICT) in teaching activities. The most significant predictor was ICT Resource Allocation Practices ( $r=0.313$ ;  $t=7.506$ ;  $p=0.000$ ). The study made recommendations to the Ministry of Education to implement policies on teacher motivation for public schools and make provisions for upgrading the existing teachers motivation practices. From the findings of this study, the study recommends in relation to teacher motivation practice that the schools management support the teachers by motivating and encouraging them use the ICT resources in teaching.

**Keywords:** Teacher Motivation practices, Teacher Training Practices, Utilization of Information Communication Technology, Public secondary schools

#### 1. INTRODUCTION

Globally, the utilization of ICT in teaching is gaining recognition, as evidenced by investments in education, such as Saudi Arabia allocating a significant portion of its budget to the field. Nevertheless, there is a gap in ICT utilization. In Africa, ICT is seen as a means to improve access, quality, and equity in education, but inadequate resource allocation to teachers, coupled with low ICT skills and confidence among educators, hinders its effective use. In Kenya, despite government initiatives, the full integration of ICT in teaching remains a challenge, primarily due to teachers' lack of ICT skills. Addressing these issues and investigating the impact of school management practices on ICT utilization in teaching are essential concerns in these regions (Tatweer, 2015; Ministry of Finance, 2015; Al-Harbi, H. 2014; Michura, 2019; Qureshi, S. 2014; Soe-Lin, Hecht, Schweitzer, Thomas & Kim, 2014; Quality Education and Training for Vision 2030; RoK, 2014; Nyakowa, 2014; Mingaine, 2013).

Teacher motivation is crucial for effective ICT integration in education, as demonstrated by studies in Kosovo (Krasniqi & Kastrati, 2018) and Hungary (Bako, Veress, & Fulop, 2019). Nevertheless, challenges in motivating teachers to adopt ICT persist, particularly in European countries like Turkey (Zainaddin, Acilar, &