THE INFLUENCE OF ICT USE ON HRM POTENTIALS FOR SECONDARY SCHOOL STUDENTS IN TABORA MUNICIPALITY, TANZANIA

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF HUMAN RESOURCE MANAGEMENT

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University of Tanzania the dissertation entitled **"The Influence of ICT Use on HRM Potentials for Secondary School Students in Tabora Municipality, Tanzania"** in partial fulfillment of the requirements for the degree of master of Human Resource Management (MHRM).

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Prof. Joseph Magali

(Supervisor)

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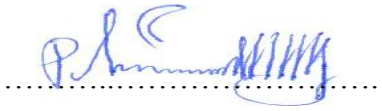
DECLARATION

I, **Peter Antony George,** do declare that this dissertation is my own original work and that it has not been presented and will not be presented to any university for similar or any other degree award. It is hereby presented in partial fulfillment of the requirements for the degree of master of Human Resource Management (MHRM).



Signature

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Date

DEDICATION

The dissertation is dedicated to members of my family and to my beloved confreres msfs congregation, and to my beloved Dr. A Stephen Arputharaj, Mrs. Rita Stephen, Mr. Sebastine Brijit Wicky, Miss Swetha Maria Foustina. Thank you for your prayers. Be Blessed. God Bless.

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Firstly, and fore mostly, I offer praise and glory to my savior Jesus Christ for his favor and blessings which powered me to accomplish this dissertation. Secondly, I will never forget the advices and guidance given by my supervisor Professor Joseph Magali.

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Lastly, but not adhering to the order of importance, I also convey my gratitude to everyone who facilitated the accomplishment of this research. Be blessed by Almighty God, all!

ABSTRACT

The study assessed how the ICT usage affected the potential of HRM for secondary schools' students in Tabora Municipality. The study regarded the performance of students in their exams as a measure of HRM potential. The study examined specifically on the way school and parents' affordability in purchasing the ICT tools, teachers' teaching competences and teachers' perceived relevance affected the secondary schools' students' performance in Tabora region. The descriptive design and positivism philosophy guided the study. The 62 respondents were systematically selected to participate in the study. The descriptive technique analyzed the field information. The findings disclosed that the students' performance was contributed by 50% of the parents' and schools' affordability to purchase the ICT tools. The findings moreover, indicated that school capability to purchase the ICT tools catalyzed the students' performance. The study unveiled that both the teachers' ICT use competences and teachers' good perception of ICT tools usage encouraged the better performance of the secondary schools' students. The findings conclude that ICT tools usage in the secondary schools promoted the students' human resource potential in Tabora region. The policy should facilitate the ICT tools usage for all secondary school students and hence promotion of the human resource potential in Tabora region and other regions in Tanzania.

***Keywords**: ICT usage, HRM potential, secondary schools' students, Tabora Municipality*

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LIST OF ABBREVIATIONS AND ACRONYMS

ADEM	Agency for Development of Educational Management
ICT	Information and Communication Technologies
CD-ROM	Compact Disc Read-Only Memory
IAE	Institute of Adult Education
HRIS	Human Resource Information System
HRM	Human Resources Management
MoEVT	The Ministry of Education and Vocational Training
TAM	Technology Acceptance Model
TIE	Tanzania Institute of Education
TLSB	Tanzania Library Services Board
UNESCO	United Nations Educational, Scientific and Cultural Organization
URT	United Republic of Tanzania
VETA	Vocational Education and Training Authority

CHAPTER ONE

INTRODUCTION

1.1 Overview

The chapter explains how the study is structured by giving the general overview. This chapter highlights the study's detailed background. It also informs the reader about the problem which motivated the researcher to conduct the study. The main and specific objectives are also covered. Later, the chapter outlines the study boundaries, the importance and narrate the way the study is being structured.

1.2 Background of the Study

Wamakote (2010) recognized the role of technology in shaping the contemporary life. Ullah et al. (2019) declared that science and technology shape the teaching and learning process. ICT facilitates the employees' communication and promote the proper functions of human resource activities (Lei et al., 2021). ICT promotes the HRM potential by facilitating the job recruitment functions such as online job applications and hence simplify the recruitment functions (Mjomba & Oyagi, 2021). Also, ICT simplifies the HR training and development functions (Kisirkoi, 2018) and therefore promotes the organizational performance in terms of productivity (Kafyulilo, 2018).

The ICT hence is of paramount importance in promoting the performance in the organizations (Piabuo et al., 2017). ICT potentials decreases the administrative expenditures, increases productivity, improves the decision-making process and enhances the communications in the organizations (Dillon, 2018).

Various studies have been conducted on the role of ICT use in secondary schools. Musungu et al. (2021) in Kenya concentrated on the impact of ICT policy for the education sector in public secondary schools in Kimilili Sub-County, Kenya. Samikwo (2016) in Kenya examined the effect of computer-assisted learning on secondary school students' achievement in biology in Mt-Elgon, Bungoma County. Ngaruiya et al. (2022) in Nairobi examined the effect of teaching on Zoom virtual platform on secondary school students' performance in history during COVID-19.

Kimuya et al. (2021) examined the teachers' perceived relevance of ICT tearing and learning and its contribution on the academic performance of Kenyan secondary schools. Chewe (2020) in Zambia examined the lived experiences of learners of computer studies at Mutende and Kombaniya Secondary Schools in Mansa District. However, the studies did not align the ICT use and HRM potential.

Okekeokosisi et al. (2016) examined the students' ICT perceived relevance in Nigeria. Moreover, Okunlola and Hendricks (2022) examined the predictive influence of access factors on the quality of secondary education in remote areas of southwestern Nigeria. Makinde et al. (2019) in Nigeria examined the assessment of internet services availability, accessibility, and utilization for the professional development of secondary school teachers in Lagos State. Afangideh and Jude (2012) in Nigeria examined developing literacy skills to enhance the academic performance of learners in Uyo Education Zone Samuel (2024) in Nigeria studied the correlation of instructional media with teaching and learning of science subjects at the secondary school level.

Moreover, Ghartey et al. (2023) in Ghana examined the effects of digital media instruction on senior high school students' performance in organic chemistry nomenclature. Ali et al. (2023) in Pakistan studied the effect of ICT integration on secondary school students' physics achievement and reasoning skills with 31 respondents and t-test analysis. Again, the studies did assess the ICT use, the performance of the students and the HRM potential. Therefore, this study investigated the role of ICT in the context of the human resource potential to fulfill the previous gaps.

1.3 Statement of the Problem

Chakupewa (2018) asserted that some secondary school in Tabora region experienced poor academic performance in the final secondary school examinations. Joseph (2021) asserted that the challenges of ICT use for secondary school in Tanzania included inadequate infrastructure, inadequate skills inadequate technical provision and inadequate training of teachers. However, the study did not assess how the parents and teachers' ICT tools purchase capacity, teachers' competence and perceived relevance inhibited the students' performance and potential of the human resource.

Previous studies such as Samikwo (2016), Musungu et al. (2021), Kimuya et al. (2021) and Ngaruiya et al. (2022) in Kenya align the ICT use and secondary schools' students' performance. Also, Chewe (2020) in Zambia, Okekeokosisi et al. (2016), Okunlola and Hendricks (2022). Makinde et al. (2019), Afangideh and Jude (2012)

and Samuel (2024) in Nigeria, Ghartey et al. (2023) in Ghana and Ali et al. (2023) in Pakistan ascertained how the ICT use promoted the second school performance.

The studies which examined the role of ICT in promoting the human resource functions include Lei et al., (2021), Mjomba and Oyagi (2021), Kisirkoi (2018), Kafyulilo, 2018). Piabuo et al., (2017) and Dillon (2018). The human resources activities focused under these studies include recruitment, training and development, productivity, human resource charges, decision-making process, communications and cultivating creativity in the organizations. However, these studies did not investigate how the ICT promoted the human resource potential. Therefore, this study had been conducted to assess how the ICT use promote the human resource potential for secondary school students in Tabora region in Tanzania.

1.4 Objectives of the Study

The research is composed of the following objectives.

1.4.1 General Objective

Mainly, the study analyzed the factors determined the ICT tools use and students' performance in Tabora secondary school as a measure Human Resource potential.

1.4.2 Specific Objectives of the Study

The following specific objectives were composed

i. To examine parents' and schools' affordability in purchasing of the ICT learning tools and its effects in promoting the students' performance and human resource potential in Tabora Municipality.

ii. To determine the way competence of teachers in ICT use promote the secondary students' performance and hence potential of human resources in Tabora Municipality.

iii. To ascertain the role of the teachers' perceived ICT use relevance on secondary school students' performance and potential of future human resource in Tabora Municipality.

1.5 Research Questions

The following research questions guided the study.

i. In what ways parents' and teachers' affordability in ICT tools purchase affects the secondary school the students' academic performance and human resource potential?

ii. In what ways the competence of teachers' ICT use competences affects the students' academic performance and human resource potential?

iii. In what ways teachers' perceived ICT relevance affects the performance of secondary school performance and hence, the human resource potential?

1.6 Significance of the Study

The research study will have the following significances:

i. The study aid school administrators to ensure the academic performance in schools. The school administrators may use the contents of this study to understand the roles they possess in bringing forth an administrative goal of higher academic performance by making ICT more effective in the human resources management within their schools.

ii. Policy makers may use the findings of the study to formulate the policies that emphasize the use of ICT in the secondary schools. The policy will suggest how to promote the availability of ICT tools. Furthermore, the policy will recommend how to promote the teachers, competence and perceived relevance. In this way, the study will promote the human resource potential.

iii. The study contributes to the technological acceptance model by examining how the parents and schools' ICT tools purchasing affordability, the competence of teachers and the teachers' ICT use perceived relevance influence the use of the ICT tools in the secondary schools. The study exposes how TAM reflects the technology usage in secondary schools in Tanzania and how the use of ICT promotes the schools' performance. Therefore, study link TAM, ICT use and human resource potential.

1.7 The Study's Scope

The study concentrated on the private secondary schools in Tabora region and ICT use. The study concentrated only on the three determinants i.e parents and schools' ICT tool purchasing affordability. Also, the study focused the teachers' competence and perceived relevance variables. The study furthermore, used the TAM to guide this study.

1.8 The Study's Organization

The study comprises the five chapters. The background on the role of ICT on secondary school teasing and academic performance and the problem associated with

ICT use and human resource potential has been covered in the first chapter. The study highlights the main and specific objectives. The chapter two explains the literature used to explain the use of ICT in secondary schools, covering the theoretical and empirical contexts. The chapter expose the gaps to be covered and depicts the concepts in the framework figure. Chapter three comprises all important concepts explaining how the study was conducted. The study beliefs, design, procedures in sampling, data collection, respective analysis, justification for the selection of variables, assurance of precision and accuracy of the research tool and data and ethical matters are also covered. The results are presented and discussed in Chapter four. The last chapter summarizes the results emanated the specific objectives. It also concludes and discusses the study's implication to research stakeholders.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

The chapter presents the key terms standard definitions. It also presents the theories related to the study's variables. Empirical studies articulate the role of ICT on inculcating and promoting the secondary schools' students' performance. The research gaps and conceptual figure for the study are also presented.

2.2 Definition of Terms

The section defines the key terms and concepts of the study.

2.2.1 Concept of Information and Communication Technology (ICT)

Opati (2013) declared that through ICT information are collected, processed and analyzed. Haigh (2011) affirmed that ICT promote the information access and storage. Ndibalema (2014) declared that ICT can be used as a pedagogical tool to facilitate the secondary school teaching.

2.2.2. Secondary School Performance

Musungu et al. (2021) declared that the performance of secondary school can be measured by looking the pass rate in the examinations. The school which performs well is the one with many students who have got high pass rate. The pass rate is determined by the board responsible for measuring performance of the secondary school students. In Tanzania, the board is known as National Examination Council of Tanzania.

2.2.3 Human Resource Potential

The human resource potential refers to the performance of the human resource functions especially in the future (Rahman et al., 2021). Human resource management comprises of many functions such as training and development, motivation, work relation, performance appraisal, recruitment and selection and work place security (Farmery, 2014).

2.3 Theory on the Adoption of ICT

The technology Acceptance Model (TAM) captured the theoretical framework in the existing study. The model enlightens the important determinants that fosters the adoption of technology (Abdinoor & Mbamba, 2017). Davis (1989) composed this model to describe the technology acceptance features. The theory justifies the motive of using an introducing technology (Kisirkoi, 2018). The theory declares that people will use the new technology if they believe it is easy to use it and if it is beneficial to use ((Piabuo et al., 2017). The use of ICT technology in secondary School promotes the human resource potential because the ICT use catalyze the performance of the human resource functions (Rahman et al., 2021).

2.4 The ICT and HRM Potential

The national ICT policy of 2013 and 2016 is the review of ICT policy of 2003. The policy emphasizes the use of ICT to promote economic growth and human capital development. Kisirkoi (2018) recognized ICT as an essential tool in building the economy. ICT has potential to improve the teaching and learning in secondary school and potentially improve the future human resources (Rahman et al., 2021).

ICT application in teaching and learning promotes the contemporary digital teaching and learning environment (Livingstone, 2011). ICT promotes the management of students, academicians, financial and human resource data (Matimbwa & Masue, 2019). Kisirkoi (2018) asserted that adequate ICT infrastructure facilitate proper employment of ICT in in education sector. Ullah et al. (2019) stressed that ICT strengthens the teaching the self-teaching and learning.

ICT facilitates the employees' communication and promote the proper functions of Human resource activities (Lei et al., 2021). ICT facilitates online job applications interview and recruitment (Mjomba & Oyagi, 2021). Kisirkoi (2018) avowed that ICT promotes training and development functions. By doing so, the ICT promote the organizational productivity (Kafyulilo, 2018). The ICT also promote the performance management roles in the organizations (Piabuo et al., 2017). ICT promotes the management of the employees' idea and hence making employees to participate in the organizational decision making (Dampana & Agbeyegbe, 2017).

ICT human resource system aids the electronic Human resources management and hence employment data are stored, retrieved and managed through the computerized system (Farmery, 2014). Hence, ICT promotes human resource functions such as planning, coordinating, employees' performance evaluation, organizing, and execution of human resource functions (Sutrisno, 2023). ICT potentials reduces the administrative expenditures, increases productivity, improves the decision-making process and enhances the customer care functions (Dillon, 2018).

2.5. The Empirical Literature Review

Musungu et al. (2021) in Kenya examined the evaluation of the implementation of the ICT policy for the education sector in public secondary schools in Kimilili Sub-County, Kenya. The study included regression and descriptive analysis with 84 Heads of Department (HODs). The study revealed that while ICT has only been partially implemented, its integration significantly improved academic performance and student retention. However, ICT is less affordable and knowledge about its integration is limited. However, the study did not cover the teachers' ICT use competences and perceived relevance variables.

Samikwo (2016) in Kenya examined the effect of computer-assisted learning on secondary school students' achievement in biology in Mt-Elgon, Bungoma County. The study included descriptive statistics, T-test analysis, and cognitive theory with a sample of 274 students. The study revealed that the computer-assisted learning program has the potential to improve achievement, attitudes, and self-efficacy among learners. Nonetheless, affordability, teachers' ICT use competences and teachers' perceived relevance were not covered.

Makinde et al. (2019) in Nigeria examined the assessment of internet services availability, accessibility, and utilization for the professional development of secondary school teachers in Lagos State, Nigeria. The study included descriptive analysis with 200 teachers. The study revealed that internet services in secondary schools were not adequate, and accessibility and usage were concerning. The study recommended that the government and private school owners provide teachers with

internet services and sponsor training programs for their professional development. However, the study did not assess the influence of teachers' ICT use competences and teachers' perceived relevance.

Chewe (2020) in Zambia examined the lived experiences of learners of computer studies at Mutende and Kombaniya Secondary Schools in Mansa District, Zambia. The study included descriptive analysis and learning theory with 14 respondents. The study revealed that the internet in Zambia was too expensive, and computers and accessories were not affordable. Learners' experiences in computer studies were both theoretical and practical, enhancing their knowledge, skills, and attitudes. Nonetheless, ICT use competences and teachers' perceived relevance were not under focus.

Ngaruiya et al. (2022) in Nairobi examined the effect of teaching on Zoom virtual platform on secondary school students' performance in history and government during COVID-19. The study included constructivist theory and descriptive analysis with 256 form two students across four schools. The study revealed that most students who participated in Zoom meetings performed well, but the affordability of Zoom services was low. However, the study did not examine the influence of teachers' ICT use competences and teachers' perceived relevance.

Samikwo (2016) using the t-test in Kenya studied the effect of computer-assisted learning on secondary school students' achievement in biology in Bungoma County with 274 respondents. The study concluded that computer-assisted learning improves

student achievement, attitudes, and self-efficacy. However, the variables of affordability, teachers' ICT use competences and teachers' perceived relevance were not under the study.

Okunlola and Hendricks (2022) in Nigeria examined the predictive influence of access factors on the quality of secondary education in remote areas of southwestern Nigeria. The study included general systems theory and descriptive analysis with 467 secondary school graduates. The study revealed that most parents could not afford learning materials, particularly those requiring ICT knowledge, leading to normal performance among students. However, did not concentrate on the influence of teachers' ICT use competences and teachers' perceived relevance.

Mayowa et al. (2021) in the teachers' ICT competence effects on science subjects teaching in Nigeria using the descriptive and chi-square test. The result displayed that teachers lacked ICT teaching competence which could enhance the effective teaching of the science subjects. However, the study did not consider the elements of parents' and teachers' ICT tool purchasing affordability and teachers' ICT tool perceive use relevance in the analysis.

Ghartey et al. (2023) in Ghana examined the effects of digital media instruction on senior high school students' performance in organic chemistry nomenclature. The study included learning cycle theory and descriptive analysis with 103 students. The study revealed that digital media was more effective than traditional teaching methods and showed no differential effect on male and female students, although

digital media was less affordable. Nonetheless, teachers' ICT use competences and teachers' perceived relevance were beyond the scope of the study.

Afangideh and Jude (2012) in Nigeria examined developing literacy skills to enhance the academic performance of learners in Uyo Education Zone. The study employed descriptive analysis with a population of 1,317. The study revealed a significant relationship between the availability of reading materials, a conducive learning environment, and teachers' utilization of literacy materials to enhance academic performance. However, the study did not emphasize on the influence of teachers' ICT use competences and teachers' perceived relevance.

Ali et al. (2023) in Pakistan studied the effect of ICT integration on secondary school students' physics achievement and reasoning skills with 31 respondents and t-test analysis. The study found that ICT integration significantly improved students' physics achievement and reasoning skills. However, affordability, teachers' ICT use competences and teachers' perceived relevance were not covered. Samuel (2024) by using T-test in Nigeria studied the correlation of instructional media with teaching and learning of science subjects at the secondary school level with 108 respondents. The study found that the affordability and teachers' competence significantly improved students' performance in physics, particularly in distinction and credit grades. However, perceived relevance of teachers was not considered.

Okekeokosisi et al. (2016) examined the students' ICT perceived relevance in Nigeria using the descriptive analysis. The findings indicated that students perceived

as relevant to integrate ICT in teaching and learning. However, the affordability and teachers' competence were not assessed. Also, the study concentrated on the students' competences and not teachers' competence.

Kimuya et al. (2021) using the descriptive and regression analysis examined the teachers' perceived relevance of ICT tearing and learning and its contribution on the academic performance of Kenyan secondary schools. The teachers perceived that the use of ICT promoted the public secondary schools' academic performance. However, the effects of affordability and teachers' competence were not assessed.

2.6 The Gap of the Study

Samikwo (2016), Okekeokosisi et al. (2016), Kimuya et al. (2021), Samuel (2024) and Ghartey et al. (2023) have analysed the role of ICT in promoting the performance of secondary school students, none of the studies has examined the way ICT potentially impact the future human resources in Tanzania. Such type of the study is essential to recognize the role of ICT and its impacts on encouraging the future human resource development in Tanzania. Hence, this study was formulated to investigate the way ICT promote the HR in Tanzania, particularly in future contexts. Knowing the role of ICT in future potential is of paramount importance because makes teachers in secondary school to align the ICT teaching with human resource function. This practice promotes the future workforce in Tanzania.

2.7 Conceptual Framework

The figure 2.1 conceptual framework displays that affordability in ICT purchasing is determined by contributions by parents, income level of the parents, ability to

purchase the ICT tools and the financial capability of the school. Moreover, the teachers' ICT competence was assessed by looking into teachers' long term, training, short course training and teachers' self-familiarization with ICT tools. The teacher's perceived relevance was considered as an essential determinant of the human resource potential. Teacher's perceived relevance was determined by perceived benefits and hence students' granted permission to use the ICT tools.

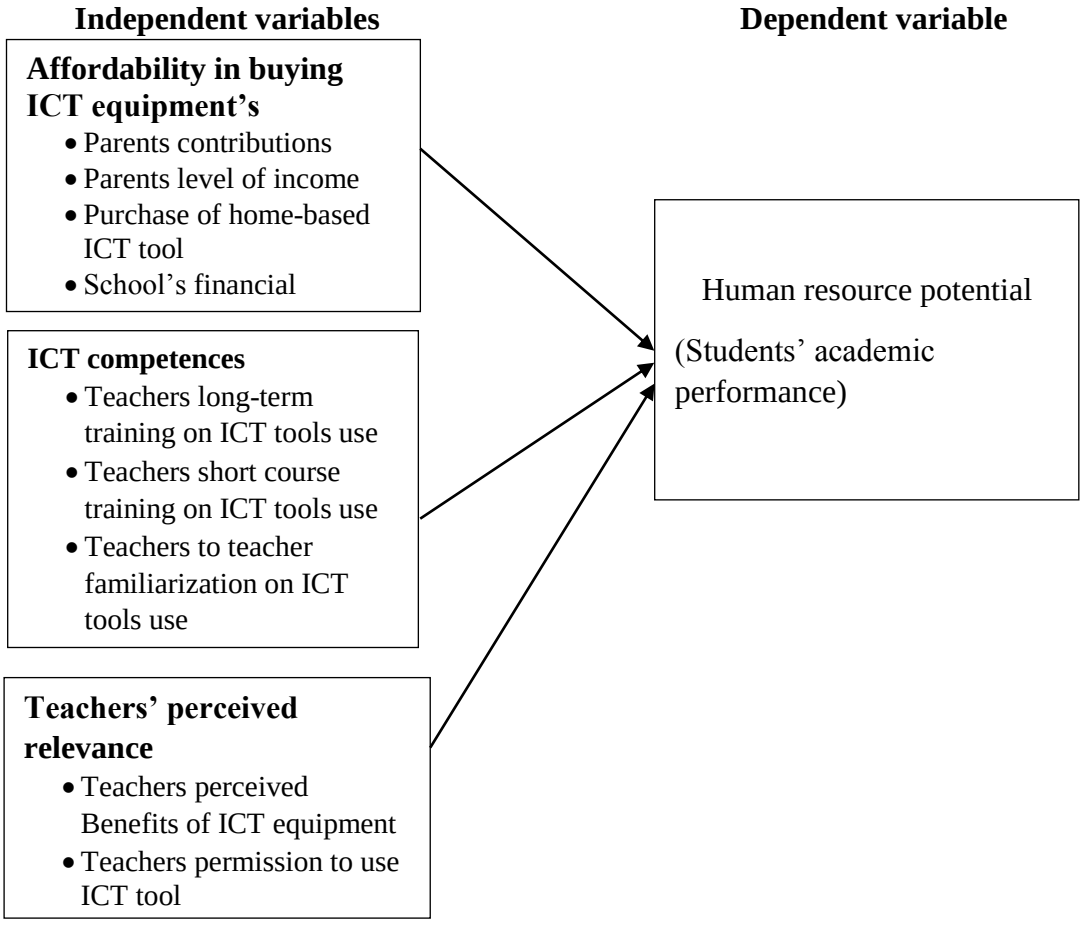

Figure 2.1: The Conceptual Framework

Source: Compiled from Empirical Literature Review

CHAPTER THREE

METHODOLOGY

3.1 Overview

The chapter depicts the research methodological concepts adopted by the study. It incorporates the research philosophy, design, study area explanation, target population, sampling and sample size and techniques, methods and tools of data collection, data analysis procedures, research tool validity, reliability, and ethical considerations.

3.2. Research Philosophy

The research philosophy is a guiding belief for a particular study (Saunders et al., 2019). The current study employed the positivism philosophy. Positivism asserts that the reality is confirmed through the scientific investigation (Creswell. (2012). Positivism philosophy was justified because the study involved relatively large sample size. Hence, the sample size enabled to generalize the results by computing the facts in terms of frequencies and percentages. The quantitative nature also simplified to categorize the response into five Likert scale and hence, simplified the generalization of the findings.

3.3 Research Design

Creswell (2012) defined the research design as a procedure which guide the conduction of the particular study. This study employed the descriptive research design. The descriptive research design fits for the quantitative study. The design allows the researcher to make the generalization of the study findings without

articulating the cause-effect relationship nature among the variables (Saunders et al., 2019). The design is applied when the researchers have no intention to analyze the inferential relationship among the variables.

3.4 Area of the Study

The study was conducted in Tabora Municipal council in Tabora region. The researcher selected Tabora Municipal council because students were not performing well (Chakupewa, 2018). Also, the municipal had more privately-owned schools compared to the other municipals in Tabora region.

3.5 Population

According to Creswell (2012), the population refers to the entire group of people, events, or objects in which the researcher has interest to investigate. The target population for study were school head teachers, teachers and students. Thus, the population covers 650 respondents who were teachers who worked in Tabora Municipal Council in selected secondary schools. Only five schools that taught computer subject were considered for the study. Table 3.1 shows the population in the selected schools.

Table 3.1: Population Table

S/N	Area	Male	Female	Total
1	Mwinyi sec. School	50	30	80
2	St. Peter sec. School	80	90	170
3	Itaga sec. School	78	67	145
4	St. Francis sec. School	48	89	137
5	Semi-hills sec. School	63	89	152
	Total	319	365	684

Source: Tabora Municipal Council, 2021

3.6 Sampling Technique

Sampling entails selecting a sufficient number of right elements for the purpose of generalizing the population (Taherdoost, 2016). There are two major types of sampling design: Probabilistic and non-probabilistic sampling. In probabilistic sampling, the element in the population has some known, nonzero chance or probability of being selected as sample subject. In non-probabilistic sampling, the elements do not have a known or predetermined chance of being selected as a subject. In this study, the researcher used a probability sampling design. The researcher used both simple random and stratified sampling to select the respondents for the study. This kind of sampling technique is cost-effective (Khan et al., 2015). Therefore, the study employed both simple random and stratified sampling to categorize the male and female respondents.

3.7 Sample Size

A sample is a finite part of the statistical population whose properties are studied to gain information about the whole (Denscombe, 2010). Taherdoost (2016) recommended a 10% sample size of the whole population under the study is regarded as representative and hence suitable for the study. According to Bobbitt (2020), a sample is considered adequate if the sample is equal or more than 10% of the population. Therefore, the 15% of 319 males was 48 students, and the 15% of 365 was s 55 students. Therefore, the total sample size was 93 students.

3.8 Data Collection Method

According to Denscombe (2010), data collection is the process of gathering and measuring information on variables of interest in an established systematic fashion

that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The goal of the research is to capture quality evidence that is then translated into rich data analysis and allows the building of convincing and credible answers to questions that have been posted Saunders et al. (2019). A questionnaire was used for this study in order to gather the information for generalizing the study (Denscombe, 2010). The structured questionnaire was employed to collect data. The questionnaire contained mostly the close ended questions. The structured question is recommended for the validity and reliability of data (Cooper & Schindler, 2014).

3.9 Data Validity and Data Reliability

The validity and reliability of the research tool and data described the sections below.

3.9.1 Data Validity

According to Cooper and Schindler (2014), validity ensures the truth and precision of the research tool. A research tools study demonstrates validity if it truly measures what it claims to measure (Denscombe, 2010). The supervisor's and ICT experts research tool approval before data collection ensured the validity. The variables were drawn from the previous studies. The researcher also pre- tested the questionnaire before the actual data collection.

3.9.2 Data Reliability

Reliability is the extent to which a measure yields the same scores across different times (Denscombe, 2010). The reliability test enhanced the accuracy confirmation of the research tool and data (Cooper & Schindler, 2014). The reliability was measured

by using the Cronbach alpha statistics. All items scored the reliability of 0.7 and above. This proved that the research tool was reliable. Table 3.2 displays the reliability test results.

Table 3.2: Reliability Statistics

Variable	No of items	Cronbach Alpha
Background variable	6	0.784
Affordability in buying ICT leaning equipment	4	0.875
Teachers' ICT competences in Using ICT equipment	4	0.722
Teachers' perceived relevance of ICT learning	3	0.784

3.10 Data Analysis

Data analysis involves systematic organizing, breaking and arranging data for the purpose of generalizing or justifying a particular phenomenon (Denscombe, 2010). The analysis encompasses synthesizing the data into patterns for providing intended meaning (Creswell, 2012). In this study the descriptive analysis was employed. Through the descriptive analysis the frequencies and means, with the help of SPSS computer software were computed.

3.11 Variables and Measurements

As proposed by Nouri et al. (2022), the variables were measured using a 5-point Likert-type scale, ranging from 1 (Strongly disagree), 2 (Disagree), 3 (neutral), 4 (Agree) and 5 (Strongly Agree) Table 3.3 presents the variables and measurement procedures. The table indicates the constructs, number of indicators or sub-variables, the type of the scale used to measure the variables and the source of variables from

the previous studies. The independent variables were the ICT parents and school's affordability, teacher's ICT competences and teacher's ICT perceived relevance. The dependent variable was the influence of ICT on the secondary school students' performance.

Table 3.3: Variables and Measurement

Construct Name	Number of items	Scale used	Type of scale	Source
Dependent variable				
ICT use affects the secondary school students' performance and hence the future human resource potential.	1	5 Likert scale	Ordinal	(Chakupewa, 2018; Lei et al., 2021; Mjomba & Oyagi, 2021)
Independent variables				
Affordability of the ICT learning equipment.	6	5 Likert scale	Ordinal	(Mtebe & Raisamo, 2014; Ahmed et al. (2021)
ICT competences influence the academic performance.	4	5 Likert scale	Ordinal	(Cabellos et al., 2024; (Edumadze et al., 2022).
Teachers' perceived relevance of ICT learning influences the academic performance.	5	5 Likert scale	Ordinal	Drossel et al.,2017; Edumadze et al., 2022

Source: Literature Review

3.12 Ethical Issues

According to Scherzinger and Bobbert (2017), ethics in research comprise values, norms, and standard procedures that guide the conduction of the research. In this study, all essential ethical issues were adhered. Before data collection, the supervisor approved the proposal then the researcher sought clearance letter from the university. The consent was sought from the respondents before the data collection. The researcher maintained the privacy of the respondents and data confidentiality was

ensured. The researcher also disclosed the identity of the respondents and numbers were used instead of the real names. The researcher also avoided data fabrication, falsification and plagiarism.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Overview

The chapter covers the results obtained from data analysis. The analysis was based on variables from the specific objectives. The chapter also discusses the results what do they imply as far as the title of the study is concerned.

4.2 The Response Rate

The research aimed to survey 93 participants. However, only 72 participants returned a questionnaire. This was a 77.4% of the response rate. According to Hair et al. (2010), a 30% and above response's rate can be accepted for a survey study.

4.3 Demographic Characteristics of the Respondents

4.3.1 Gender of the Respondents

The findings from Table 4.1 indicated that 81.9% of the respondents were males. The data reflects the real situation for formal employment in Tanzania where majority of the employees were males. The data suggests that the policy to enhance the recruitment of more females in the public and private sector should be enhanced. The findings are contrary to Hlengwa et al. (2018) who revealed that 89.7% of the respondents in South Africa were females.

Table 4.1: Gender of the Respondents

Gender of the Respondents	Frequency	Percent (%)
Males	59	81.9
Females	13	18.1
Total	72	100.0

4.3.2 Age of the Respondents

The findings from Table 4.2 indicate that majority (94.4%) were having 20-34 years. Under this category, teachers with ages 20-29 formed also the greater part. The findings indicate that young teachers preferred learning the ICT than the elders. Hence, for teachers with ICT skills were posted to schools which taught the ICT related courses. That is why; in these schools, majority of the teachers were those with young ages. Hlengwa et al. (2018) demonstrated that majority (70%) of the teachers in South Africa had 35 – 54 age ranges.

Table 4.2: Age of the Respondents

Age of the Respondents	Frequency	Percent (%)
20-24	12	16.7
25-29	36	50.0
30-34	20	27.8
35-39	2	2.8
40+	2	2.8
Total	72	100.0

4.3.3 Education Level of Teachers

The findings show majority (76.4%) of the respondents were those with bachelor degree. The data imply that the schools employed teachers who were knowledgeable enough to teach the ICT courses. The teachers who have bachelor degree usually are usually knowledgeable and flexible enough to capture new technological issues which erupt daily. Hence, employing teachers with bachelor degree is the sign that the schools targeted to achieve the desirable results from ICT teaching to facilitate learning. Hlengwa et al. (2018) found that majority (53.9%) of the teachers in South Africa were diploma holders.

Table 4.3: Education Level of Teachers

Education of the Respondents	Frequency	Percent (%)
Certificate level	1	1.4
Diploma level	11	15.3
bachelor Degree	55	76.4
Master degree	5	6.9
Total	72	100.0

4.3.4 Years of Training Experience

The findings from Table 4.4 show the teachers' years of training experience. The findings show that there was a mixture of experienced and less experience teachers in the surveyed schools. However, the findings indicate that majority (38.9%) had 5+ teaching experience. This situation provides an opportunity for teachers with small experience to learn from experienced colleagues. The findings are consistent with Hlengwa et al. (2018) who disclosed that majority (34.7% of the teachers in South Africa were having 11-20 teaching experiences

Table 4.4: Years of Training Experience

Years of Training Experience	Frequency	Percent (%)
0-2 years	18	25.0
3-5 years	25	34.7
5+ years	28	38.9
4.00	1	1.4
Total	72	100.0

4.4 ICT Tools used for the Students' Training

The findings from Table 4.5 show that the computer was the main tools used for ICT training, followed by the smart phones as responded by 65.3% and 31.9% of teachers

respectively. The findings indicate that any convenient tool can be used for the students' training. The computer is more convenient for the students training because it can be handled easily and is convenient when using it than the smart phones which can be interrupted by external communication. Agbo (2015) recognized the use of computer as the main ICT training tool. However, scholars such as Matimbwa and Anney (2016) recognized the use of smart phones as training tools. Montrieux et al. (2015) accepted the efficiency of tablet in class teaching.

Table 4.5: ICT Tools used for the Students' Training

ICT Tools Used	Frequency	Percent (%)
Computer	47	65.3
Tablets	2	2.8
Smartphones	23	31.9
Total	72	100.0

4.5 Affordability in Buying ICT Equipment's Influence on Students' Academic Performance

The following paragraph covers the way the independent variables affected the dependent variable.

4.5.1 Parents Contributions on Buying of ICT Equipment Facilitate Academic Performance

The study analyzed how the parents' affordability influences the students' academic performance. The findings from Table 4.6 indicate that only 43.1% of the teachers agreed that parents' contributions on buying of ICT equipment facilitate academic performances. The findings indicate that majority of the teachers did not agree with

this statement. It implies that teachers did not recommend the parents on contribute on buying of ICT equipment. The findings demonstrate that the responsibility of buying the ICT belonged to the school and not to parents. The findings correlate to Hennessy et al. (2010) who asserted the ministry of education in East Africa and other African countries had the role of purchasing the school computers and other ICT tools in to support the ICT use strategic plan. Mtebe and Raisamo (2014) asserted that the financial capacity of parents in investing ICT tools for their children is essential in shaping students' ability to engage with technology for educational purposes.

Table 4.6: Parents contributions on buying of ICT equipment facilitate Academic Performances

Level of Agreement	Frequency	Percent (%)
Strongly disagree	10	13.9
Disagree	15	20.8
Neutral	16	22.2
Agree	21	29.2
Strongly agree	10	13.9
Total	72	100.0

4.5.2 Parent's Level of Income determines the Performance of Student who use ICT Tools

The study assessed the contribution of the parents' income on the performance of students who use ICT tools. The findings from Table 4.7 indicated that only 47.5% agreed with the statements. The findings imply that the performance of the students who use ICT tools was not influenced by the parents' income, rather other factors. This question was framed in order to test whether the level of income influenced

parents to give more training to their children or buy additional ICT tools to them. However, the findings did not affirm the researcher's assumptions. Montoy (2020) reported that students from poor families from the rural areas are disadvantaged when it comes to benefit from ICT teaching. The situation was moreover worse, especially due COVID 19 pandemic, which forced application of ICT tools in training for countries which faced the lockdown. Ogundile et al. (2019) stressed the role of parents' affordability in promoting ICT use in the secondary schools in Nigeria.

Table 4.7: Parent's Level of Income determines the Performance of Student who use ICT Tools

Response	Frequency	Percent (%)
Strongly disagree	8	11.1
Disagree	10	13.9
Neutral	20	27.8
Agree	16	22.2
Strongly agree	18	25.0
Total	72	100.0

4.5.3 Academic Performance is determined by buying Home Based Student owned Additional ICT Tools

The study analyzed whether the academic performance is determined by buying home based student owned additional ICT tools. The findings from Table 4.8 show that only 43% of the teachers agreed with this statement. The findings indicate that parents were not in the position to buy the students' additional ICT tools. The findings further imply the students relied upon the school owned ICT tools for studying. The findings demonstrate that buying home owned additional tools did not

contribute significantly to the students' performance. Again, this confirms the argument provided by Montoy (2020), that the level of income of the parents may determine the use of ICT tools by the students. It should be noted that most of home based ICT tools are purchased at high costs which makes the poor family not to afford to buy the ICT training tools for their children.

Table 4.8: Academic Performance is determined by Buying Home Based Student owned Additional ICT Tools

Response	Frequency	Percent (%)
Strongly disagree	12	16.7
Disagree	11	15.3
Neutral	18	25.0
Agree	23	31.9
Strongly agree	8	11.1
Total	72	100.0

4.5.4 Academic Performance is attributed by the Financial Strength of the School

The findings from Table 4.9 depicts that 59.7% of the teachers agreed that that the performance of the students depends on the financial strength of the school. The data implies that majority of the teachers agreed with this statement. The implication of the results is that if the school has better financial capability may be able to purchase the ICT tools. Financial capability also promotes the recruitment of qualified ICT teachers. The financial strength further promotes the motivation of teachers and hence makes the school to enhance their retention. The findings correlate to Mbudila (2013), who asserted that the financial capability of the school facilitate purchasing of adequate ICT tools and for this case adequate financial resources promotes the

academic performance of the students. Cabellos et al. (2024) moreover, asserted that the financial capability of the school promote the ICT use among the students.

Table 4.9: Academic Performance is attributed by the Financial Strength of the School

Response	Frequency	Percent (%)
Strongly disagree	4	5.6
Disagree	10	13.9
Neutral	15	20.8
Agree	20	27.8
Strongly agree	23	31.9
Total	72	100.0

4.6 Influence of Teachers Competence on Students' Academic Performance

The study analyzed the influence of teachers' competence in promoting the secondary school students' performance as the measure of human resource potential.

4.6.1 Teachers Training on the use of ICT tools determine Student's Academic Performance

The study analyzed the influence of teachers' ICT use tool competence on academic performance in Tabora region. The findings from Table 4.10 indicate that majority (79%) of the teachers agreed with this statement. The findings imply that in order to attain the best students' performance, schools in Tabora region might ensure that teachers had adequate competence in ICT use. The school might decide either recruiting the teachers who had being already trained on ICT tools use. or it might organize the short courses to impart the teachers the ICT use skills. Park and Weng (2020) disclosed that the ICT use competences influenced the student performance in

USA. Cabellos et al. (2024) approved the role of ICT competence in promoting ICT use in secondary schools. Mayowa et al. (2021) revealed that science teachers in Nigerian secondary lacked the ICT use teaching competencies and this decelerated the students' academic performance.

Table 4.10: Teachers Training on the use of ICT tools determines Student's Academic Performance

	Frequency	Percent (%)
Strongly disagree	1	1.4
Disagree	4	5.6
Neutral	10	13.9
Agree	30	41.7
Strongly agree	27	37.5
Total	72	100.0

4.6.2 Teachers' Short Course Training on the use of ICT Tools determines Students' Academic Performance

The study analyzed whether the teacher's short course training on ICT use is a panacea for students' academic performance in Tabora region. The findings indicate that 63.9% of the surveyed teachers agreed with this statement. The findings indicate that training ICT teachers was essential to enable them to train students effectively. Bhattacharjee and Deb (2016) asserted that teachers ICT training improves teaching skill, facilitated innovative teaching and increased the activeness of teachers in the classroom. It further improved professional of teachers and hence improved teachers' motivation. Regular training of ICT teachers also made them updated with the new knowledge on ICT.

Table 4.11: Teachers' Short Course Training on the use of ICT Tools determines Students' Academic Performance

Response	Frequency	Percent (%)
Strongly disagree	4	5.6
Disagree	9	12.5
Neutral	13	18.1
Agree	26	36.1
Strongly agree	20	27.8
Total	72	100.0

4.6.3 Teachers' Long Term Training on the Use of ICT Tools Determines Students' Academic Performance

The analysis also focused on the influence of long-term training on students' academic performance. The majority (70.6%) of the respondents agreed with the statement. The findings imply that the long term training had the role to improve the students' performance for students who used ICT tools. The long term training enhances mastering of the skills in ICT related issues and hence increases the competence of the teachers. Competent teachers are eager in training and hence have higher chances of increasing the performance of students who study using the ICT tools (Bhattacharjee & Deb, 2016). Lei et al. (2021) revealed that there is association between the level of ICT literacy and students' academic performance. It implies that the higher the ICT literacy the higher the students' academic performance.

Table 4.12: Teachers' Long Term Training on the use of ICT Tools determines Students' Academic Performance

Responses	Frequency	Percent (%)
Strongly disagree	4	5.6
Disagree	7	9.7
Neutral	10	13.9
Agree	22	30.6
Strongly agree	29	40.3
Total	72	100.0

4.7 Teachers perceived relevance of ICT and the Academic Performance of Secondary School Students

The study also assessed how perceived relevance affected the secondary school students' academic performance and hence the future human resource potential.

4.7.1 Teachers perceived the use of ICT Equipment Positively

The findings from Table 4.13 show that 77.8% of the teachers perceived the use of ICT tools positively. The findings signify that the teachers in the surveyed schools adopted the use of ICT tools in training their students. There is a relationship between the positive perception and use of the technology. Obviously, if teachers perceived positively the use of ICT tools in the training they applied the ICT tools comfortably. Means that the teachers liked to use it and this was essential for promoting the academic performance of the students. In other words, it means that, understanding the benefits of ICT tools in teaching and learning motivated the teachers to use the ICT tools. Davis (1989) in his Technological Acceptance Model (TAM) articulated that the positive perception on the useful of technology fosters its positive acceptance. Hlengwa et al. (2018) found that positive perception of teachers

promoted the use of ICT in training in South Africa. Milla et al. (2019) demonstrated that students' positive perception promoted the use of ICT in teaching for secondary schools in Turkey.

Table 4.13: Teachers perceive the use of ICT Equipment Positively

Response	Frequency	Percent (%)
Strongly disagree	2	2.8
Disagree	1	1.4
Neutral	13	18.1
Agree	30	41.7
Strongly agree	26	36.1
Total	72	100.0

4.7.2 ICT Use Facilitates Good Extra Students Learning than a Normal Mode

The findings from Table 4.14 indicate that about 76.3% of the surveyed teachers agreed that ICT use facilitates good extra students learning than a normal mode. The findings indicate that teachers accepted that ICT use had opportunity to promote better learning than the normal learning mode. Edusys (2020) declared that use of ICT in training has the following advantages it is a better mode of communication, it reduces costs hence it is cost effective, it reduces the cumbersome of using papers, it leads to better students' management, leads to collaborative and interactive and learning and teaching. It further reliable since it connects educators, researchers, students, scholars, and stakeholders together. Likewise, it accommodates use of images, graphics and videos during learning. Monteux also confirmed that ICT technology promote more learning.

Table 4.14: ICT Use Facilitates Good Extra Students Learning than a Normal Mode

Response	Frequency	Percent (%)
Strongly disagree	2	2.8
Disagree	4	5.6
Neutral	11	15.3
Agree	23	31.9
Strongly agree	32	44.4
Total	72	100.0

4.8 ICT Equipment Use Influence the Students' Academic Performance

The study analyzed if the ICT equipment use influence the students' academic performance and the findings from analysis are presented in Table 4.15. The findings show that the majority (77.7%) of the respondents agreed that ICT equipment use influence the students' academic performance. The findings imply that the teachers recognized the contributions of ICT tools and equipment in fostering the academic performance of the students. Ullah et al. (2019) revealed the significance association between use of ICT and the academic performance of the students. ICT promotes the academic performance of students because academic empowers learners and teachers participate in the learning processes by practicing the student-centered approach, and this increases the students' understanding compared to the traditional teaching methods (Bhattacharjee & Deb, 2016).

Table 4.15: ICT Equipment use influence the Students' Academic Performance

Response	Frequency	Percent (%)
Disagree	1	1.4
Neutral	15	20.8
Agree	33	45.8
Strongly agree	23	31.9
Total	72	100.0

4.9 Challenges of using ICT Tools and Equipment

The study also analyzed the challenges of using ICT tools and equipment and the findings are presented in Table 4.16. The findings indicate that majority (26.1%) stated the shortage of ICT facilities as the major challenges which hindered the use of ICT tools and equipment. The electricity power off and shortage of qualified teachers also scored 19% and 19.5% respectively. The other challenges are displayed in Table 4.16. Despite acknowledging learning is supported by the use of ICT; Siddiquah and Salim (2017) mentioned the challenges of computers undesirable speed, internet connectivity problem, threat of viruses, lack of modern computers, load poor shedding, and lack of qualified instructors were the problems which hindered the students' ICT learning. Mwaniki et al. (2024) asserted that the shortage of ICT resources inhibited effective teaching in mathematics subjects in Kenya.

Matimbwa and Anney (2016) demonstrated that acceptance of mobile phone teaching for teachers and students were restrained by unavailability of electricity in community schools, rise of eminent social media, hike of students' budget and unavailability of user guidelines.

Table 4.16: Challenges of using ICT tools and Equipment

Challenges	Frequency	Percent
Shortage of ICT facilities	59	26.1%
Lack of internet network	32	14.2%
Power off of electricity	43	19.0%
Shortage of qualified teachers	44	19.5%
Lack of exposure	20	8.8%
High costs to run	28	12.4%
Total	226	100.0%

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Overview

This chapter covers the conclusion, findings' summary, recommendations, study contributions and directions for future studies.

5.2 Summary of the Findings

This section covers the summary of findings on how the affordability in buying ICT equipment, influence of teachers' competence and teachers perceived ICT relevance influence the students' performance as a proxy of the human resource potential.

5.2.1 Affordability in buying ICT equipment's influence on Students' Academic Performance

The findings indicated that only 43.1% of the teachers agreed that parents' contributions on buying of ICT equipment facilitate academic performances. The results also indicated that only 47.5% the agreed that the parents' income, influenced the students' performance. Likewise, the study found that only 43% of the teachers agreed that buying ICT additional tools to student influenced students' performance. Moreover, 59.7% of the teachers agreed that that the performance of the students depends on the financial strength of the school. The findings generally indicate that affordability of the parents to buy the ICT tools contributed to academic performance of the students nearly to 50%. The findings indicate of the parents in buying ICT tool was small. Hence, strategies are to be taken to promote the availability of ICT tools in teaching in the secondary schools in Tanzania.

5.2.2 Influence of Teachers Competence on Students' Academic Performance

The majority (79%) of the teachers agreed that teachers' competence in using ICT tools influenced the students' academic performance. Also, the study revealed that short course and long course ICT training for teachers influenced the students' academic performance as witnessed by 63.9% and 70.6% of the respondents respectively. The findings generally indicate that teachers' ICT competences contributed to the academic performance of the students in the surveyed schools. The findings further indicate that majority of teachers were competent to teach ICT subject. Hence, the competence of the teachers had a potential to increase the academic performance of students in the secondary schools.

5.2.3 Teachers perceived relevance of ICT and the Academic Performance of Secondary School Students

The findings further indicated that 77.8% of the teachers perceived the use of ICT tools positively. The findings signify that the teachers in the surveyed schools adopted the use of ICT tools in training their students. They similarly agreed by 76.3% that ICT use facilitated good extra students learning than a normal mode. The findings indicated that the teachers in the surveyed schools perceived the relevance of training students using the ICT tools and this boosted the academic performance of the students.

The findings further showed that the majority (77.7%) of the respondents agreed that ICT equipment relevance influenced the students' academic performance. The findings signify that teachers acknowledged the role of ICT use in promoting the academic performance of the secondary school students.

5.3 Conclusion

The findings indicate that the parents' affordability to buy the ICT was small and in this case this variable had limitation to improve the academic performance. The findings indicate that the performance of the students was contributed largely to the schools' affordability. The findings further showed that teachers' ICT competences contributed to the academic performance of the students of the surveyed schools. Likewise, the findings indicate that teachers to large extent had positive perception that the use of ICT tools boosted the students' academic performance. The majority of the teachers accepted that use of ICT tools in training contributed to the students' academic performance. The study generally concludes that the use of ICT tools in training promotes the students human resource potential since the academic performance was used as a proxy of human resource potential.

5.4 The Relationship between the Academic Performance and Human Resource Potential

Since the findings indicate that the ICT tools use contributed positively to the academic performance, the study concludes that the ICT use boosted the students' human resource potential. The findings indicate that the students with higher academic achievements had higher probability of being employed in private and public organizations in future. Hence, passing in exams increases the potential of future human resource potential of the secondary school students.

The study revealed that the positive influence of ICT on academic performance extended beyond traditional classroom settings. The accessibility of information,

interactive learning modules, and collaborative platforms offered by ICT not only complemented the conventional teaching methods but also provided students with opportunities for self-directed learning and exploration. The versatility of ICT in accommodating diverse learning styles further contributes to its effectiveness in promoting academic excellence among secondary school students.

The observed enhancement in academic performance directly reflects an improved human resource potential. As students leverage ICT tools to acquire and assimilate knowledge, they develop critical skills such as digital literacy, problem-solving, and information management. These competencies are integral components of a well-rounded human resource potential, positioning students for success not only academically but also in their future endeavors. This study provides compelling evidence that ICT is pivotal in promoting academic performance among secondary school students, ultimately contributing to developing their human resource potential.

5.5 Recommendations

Based on the results, the study offers the following recommendations to secondary school administration, the parents, and ministry of education and policy makers.

5.5.1 Recommendation for the Secondary School Administration

This study recommends the schools to set the budget for the short term and long term ICT training. It implies that the short term and long term training is essential to keep teachers updated with ICT skills. Hence, every year the schools should set aside a budget for short term and long term training for ICT teachers. Provided that the

technology on the use of ICT tools changes very fast, training teachers makes them updated on the new skills. The budget also will be used to purchase the new ICT tools to replace with the obsolete tools.

Based on the compelling findings, the school administrations must prioritize the integration of ICT into the curriculum, fostering a technologically enriched learning environment that aligns with the demands of the contemporary workforce. Concurrently, investing in teachers' training to improve digital literacy and proficiency in utilizing ICT tools is crucial. Adequate infrastructure, including reliable internet connectivity and updated computer labs, must be prioritized to ensure access to ICT resources. Establishing robust monitoring and evaluation mechanisms will enable schools to continually assess the impact of ICT on academic performance and refine strategies accordingly. Lastly, fostering collaborations with relevant stakeholders, including technology firms and local communities, can provide schools with additional resources and support for sustainable ICT integration. These comprehensive recommendations empower secondary school administrations to effectively leverage ICT for students' holistic development, enhancing academic performance and human resource potential in an increasingly digital era.

5.5.2 Recommendations for Parents

In light of the study's findings, the study recommends that parents actively support and encourage their children's engagement with technology by providing access to digital devices, ensuring a conducive study space, and actively participating in their

technological learning experiences. Moreover, parents should stay informed about the educational tools and platforms the school employs, facilitating open communication with teachers to understand better how to integrate ICT into their child's learning journey.

Additionally, parents should seek opportunities for digital literacy training to enhance their ability to guide and mentor their children in navigating the digital landscape. By embracing a collaborative approach with schools and remaining actively involved in their children's digital education, parents can contribute significantly to optimizing the positive impact of ICT on academic performance and, consequently, nurturing their child's human resource potential for the future.

5.5.3 Recommendations for the Ministry of Education

The study's robust findings on the substantial contribution of Information and Communication Technology (ICT) to the academic performance of secondary school students underscore the imperative for strategic interventions at the national level. The study recommends that the Ministry of Education actively integrate ICT into national educational policies and frameworks. The strategy entails developing comprehensive guidelines for integrating technology into secondary school curricula and targeted professional development programs for teachers to enhance their digital proficiency. The Ministry should allocate resources to ensure equitable access to modern ICT infrastructure across all schools, addressing existing disparities. Furthermore, public awareness campaigns should be initiated to emphasize using ICT to shape human resource potential. Collaborating with industry stakeholders and

academia for research and development initiatives can inform evidence-based policies and ensure the continuous evolution of educational practices. By adopting these recommendations, the Ministry of Education can spearhead a transformative approach that not only optimizes academic performance through ICT but also nurtures the human resource potential of the nation's youth in preparation for an increasingly digital future.

5.5.4 Recommendations for Policy Markers

The study's robust findings direct the policymakers to prioritize integrating ICT into national education policies. This may be achieved by ensuring that schools have the necessary infrastructure, resources, and training programs to effectively incorporate technology into teaching and learning. Moreover, policy makers should consider allocating dedicated funds for developing and maintaining state-of-the-art ICT facilities across schools, thereby addressing potential disparities in access. Crafting and promoting policies incentivizing and supporting continuous professional development for teachers in ICT skills is equally crucial. Additionally, fostering public-private partnerships to facilitate the integration of emerging technologies into education. Moreover, regularly reviewing and updating policies to keep pace with technological advancements will ensure a forward-looking and adaptable education system.

5.6 Contribution of the Study to the Theory

This study applied the Technological Acceptance Model (TAM) analyze how the ICT use influenced the students’ academic performance in Tabora region as a proxy

of human resource potential. The findings revealed that the teachers positively valued the ICT tools and found that the ICT use influenced positively the academic performance of the students. Therefore, the variable of TAM of perceived usefulness was fully captured in this study. This study adds to TAM because it considered other factors that were not mentioned by TAM. These factors include the influence of short term and long term training in the adoption of the technology. Also, this study considered the financial capability of the technology users as important factors which determine the acceptance of the technology.

The study sheds light on the affordability of acquiring ICT equipment and its impact on students' academic performance. The findings align with TAM's construct of perceived ease of use, as the financial accessibility of ICT tools directly influences students' perceived ease of incorporating technology into their learning processes. Moreover, the investigation into the influence of teachers' competence on students' academic performance corresponds to the TAM construct of perceived usefulness. The study underscores that the competence of teachers in utilizing ICT plays a crucial role in enhancing students' academic outcomes, emphasizing the significance of teachers' skills in fostering positive perceptions of the usefulness of technology.

Consistently, examining teachers' perceived relevance of ICT and its connection to students' academic performance aligns with TAM's core constructs of perceived ease of use and perceived usefulness. Teachers' positive perceptions of the relevance of ICT contribute to students' perceived ease of use and their recognition of the usefulness of technology in their academic endeavors. Overall, the study enriches the

TAM framework by providing empirical evidence on the comprehensive relationships between affordability, teachers' competence, teachers' perceived relevance of ICT, and student's academic performance. Therefore, offers a valuable insight for educators, policymakers, and researchers aiming to enhance the integration of ICT in education.

5.7 The Limitations of the Study

The study faced some limitations as follows:

Firstly, the study used the descriptive analyses, which provide only the opportunity to generalize the findings in terms of mean, frequencies, standard deviations, variances, tables and figure. Use of descriptive analysis is the limitations because the analysis does not promote the testing of the hypothesis. Without testing the hypotheses, the inferential relationship between the independent and dependent variables cannot be described.

Secondly, the study employed only three independent variables which are parents and schools' ICT tool purchase affordability, teachers' ICT teaching competences and teachers' ICT use perceived teaching relevance. It is explicit, that there are many factors influencing the ICT use and its potential to human resource. Therefore, the use of the three factors only can be considered as one of the limitations.

Thirdly, the study concentrated only in Tabora municipality leaving other municipalities. This makes difficult the findings of the study to be generalized to all

municipalities of the Tabora region. Moreover, use of one municipality limit the results to be generalized to all municipalities and regions of Tanzania.

Fourthly, the study was conducted in the schools where teachers used ICT tools to teach their students. Since, the study did not consider those who do not use the ICT tools, the researcher perceives that including those who did not use the ICT tools could depict more truth on the three variables under the study which are teachers' and parents' affordability, teachers' ICT use competence and teachers perceived ICT use relevance.

5.8 The Direction for Future Studies

This study used the descriptive statistics to analyze how ICT use determined the academic performance of secondary schools' students in Tabora region. The study may be extended to other regions in Tanzania. The study also covered the private schools; hence both private and public schools may be accommodated in future studies. This study used only descriptive analysis which describes the situation. It is better to conduct another inferential study which allows explanation of the relationship between the independent and dependent variables.

Based on the study's findings, future studies can further deepen our understanding and contribute to educational advancement. Firstly, researchers could empirically analyze the affordability determinants of buying ICT equipment, exploring the impact of various socio-economic factors on students' access to and utilization of technology. Future studies may investigate the effectiveness of government

initiatives or alternative financing models to make ICT tools accessible to many students. Likewise, future studies may focus on the dynamics of teachers' competence and its impact on students' academic performance.

The studies may also explore specific teaching strategies, professional development programs, and pedagogical approaches. Additionally, future studies may examine the role of continuous training and support in sustaining and further developing teachers' ICT competencies, which could be a valuable avenue for future investigation. Moreover, the influence of teachers' perceived relevance of ICT on students' academic performance requires further exploration. Future studies might examine the factors that shape teachers' perceptions, investigating how these attitudes influence instructional practices and students' engagement with technology.

Furthermore, studies may expand the scope of inquiry by examining the interconnectedness of these factors—affordability, teachers' competence, and teachers' perceived relevance of ICT within a comprehensive framework. Exploring the synergies and potential synergistic effects of addressing these factors could provide a holistic perspective on optimizing the impact of ICT on academic performance. Future studies may also apply the mixed-method approach to investigate the three ICT use determinants better.

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APPENDICES

APPENDIX I: RESEARCH QUESTIONNAIRE

INTRODUCTION

QUESTIONNAIRE ON HOW ICT TOOLS INFLUENCE STUDENTS ACADEMIC PERFORMANCE

Dear Respondent,

I, **Peter Antony George**, a student at The Open University of Tanzania pursuing a Master's degree, am currently carrying out a study on the **influence of ICT use on HRM potentials for secondary school students in Tabora Municipality.**Remember that the information provided will be used for academic purpose only. Your time in filling this questionnaire is highly appreciated.

SECTION A: Demographic information:

Name of school:

_____

1. Gender: Male ( ) Female ( )*Please tick where applicable.*

2. Age: 20-24 ( ) 25-29 ( ) 30-34 ( ) 35-39 ( ) 40+ ( )

3. Highest Level of Education:

i. Certificate ( ) ii. Diploma ( ) iii. Degree ( ) iv. Masters ( ) v. PhD ( )

4. Years of training experience_____(years)

5. What type of ICT tools you are using at your school?

a) Computer ( ) (b) tablets ( ) c) Smart phones ( ) TV ( )

7. Your school has how many students? Male……female……Total…….

6. How many students learn ICT tools in your schools?.....students

7. In Which class you use ICT to teach?.....

Why you teach those classes using ICT?

……

……

SECTION B: TEACHERS' AND STUDENTS questionnaires

This section is an assessment to find out the**influence of ICT use on HRM potentials for secondary school students in Tabora Municipality.** Please indicate the level of your response by circling the number of your selection. The rating is: 5= strongly agree, 4= agree, 3= Neutral 2=Disagree, 1=strongly disagree

Affordability in buying ICT equipment's influence on students' academic performance	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 2
1. Parents contributions on buying of ICT equipment facilitate academic performance of the students					
2. Parents level of income determines the performance of student who use ICT tools					
3. Academic performance of the students is determined by buying home based student owned the additional ICT tools					
4. Academic performance is attributed by the financial strength of the school					

ICT competences influence the academic performance of secondary school students as a proxy of HRM potential in Tabora region	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
Teachers long-term training on ICT tools use influence students' academic performance					
Teachers short course training on ICT tools use determines students' academic performance					
Teachers to teacher familiarization on ICT tools use determines students' academic performance					
Teachers' perceived relevance of ICT learning influences the academic performance of secondary school students as	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
Teachers perceive the use of ICT equipment positively					
ICT use facilitates good extra training for teachers					
ICT equipment use influence the students' academic performance					

What are the challenges of using ICT tools and Equipment in students teaching in Tabora municipality? Please Tick V

Challenges	Tick **V**
Shortage of ICT facilities	
Lack of internet network	
Power off of electricity	
Shortage of qualified teachers	
Lack of exposure	
High costs to run	
Total	

THANK YOU VERY MUCH FOR YOUR COOPERATION

APENDIX 2: CLEARANCE LETTERS

2.1: OUT CLEARANCE LETTER

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/PG2014004163 **3rd Feb, 2021**

District Executive Director,

P.O Box 1204,

TABORA,

Dear, District Executive Director,

RE: RESEARCH CLEARANCE FOR MR. PETER A. GEORGE REG NO PG2014004163

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1stJanuary 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

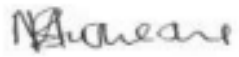
3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Mr. Peter Antony George, Reg.No:(PG2014004163),** pursuing **Masters of Human Resource Management (MHRM).** We here by grant this clearance to conduct a research titled **"Influence of ICT use on Human Resource Management Potential for Secondary School Students in Tabora Municipality."**

He will collect his data at your office from Feb 3rd, 2021 to March 3rd 2021.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA



Prof.Magreth S. Bushesha

For: VICE CHANCELLOR

2.2 LOCAL CLEARANCE LETTER

UNITED REPUBLIC OF TANZANIA

PRESIDENTS' OFFICE
AND LOCAL GOVERNMENTS AUTHORITIES

TABORA MUNICIPAL COUNCIL

In reply please quote:
Ref.No. TMC/U/32 VOL XVII/95

DATE: 05.02.2021

Fr Peter Antony George
P.O.BOX 1204
TABORA

RE: PERMISION GRANTED FOR DATA COLLECTION AT TABORA MUNICIPALITY

Refer the above heading and your letter without reference number dated on 28nd January ,2021 in favor of the above subject.

2. Tabora Municipal Council would like to inform you that your permission to collect data at Tabora Municipal has been received and approved according to request to collect data on exploring the impact of Information and communication Technology (ICT) usage on the Human Resource Management (HRM) potential among Secondary school students.

We wish you all the best during data collection and hope that your findings contribute positively and academic pursuits.

Regards

Revocatus P.Rugeiyam

For: TABORA MUNICIPAL COUNCIL
DIRECTOR

P. O. Box 174
TABORA