DETERMINANTS OF ELEARNING ADOPTION BY LEARNERS: A CASE OF THE KENYA MEDICAL TRAINING COLLEGE, NAIROBI, KENYA

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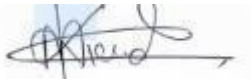
DECLARATION AND APPROVAL

Declaration by Candidate:

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

Signature:  Date…….

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DEDICATION

I dedicate my dissertation work to my spouse **Jonah**, son **Leon**, and mum **Sabina** who tirelessly encouraged me to keep moving forward and to my little daughters **Linah** and **Tabby** for their patience during my studies. Thanks for cheering me up.

God bless you.

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ABSTRACT

Background to the Study: Kenya Medical Training College initiated the Moodle-based eLearning platform in 2014. However, learners in several departments have not adopted eLearning fully. The objective of the study was to establish the determinants of eLearning adoption by learners at the Kenya Medical Training College, Nairobi.

Methodology: A descriptive design using cross sectional study was adopted as the methodology for the study. The learner population of 750 students was drawn from six departments, purposively sampled, at KMTC Nairobi. Random-stratified sampling was employed in the selection of 261 participants from the six departments. The study variables were classified as technology, learner, and institutional factors. Data was collected using a semi-structured questionnaire and 96.55% response rate was attained. The gathered data was analyzed using SPSS software. Descriptive statistical and inferential regression analysis was performed on the gathered data.

Results: The findings showed that 77% of the respondents indicated that internet connectivity hindered the ease of eLearning adoption. Further, the findings showed that the learning content in the Moodle platform was inadequate for the learners and KMTC does not have adequate infrastructure for eLearning. Multiple regression analysis was done where eLearning adoption was the dependent variable, and technology factors, learners' factors, and institutional factors were the independent variables to determine their relationships. Only institutional factors had a statistically significant positive impact on the adoption of eLearning with Beta = 0.567 and $P=0.000 < 0.05$.

Conclusion: The study concludes that the KMTC Nairobi campus has a low eLearning adoption rate due to insufficient internet in the institution. The study recommends that KMTC invest in internet and ICT infrastructure, and adequate ICT staff to support eLearning, the learners should own laptops upon enrolling for courses and regularly train on navigation and use of the Moodle Learning Management System for both learners and faculty.

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ABBREVIATIONS AND ACRONYMS

AMREF	African Medical and Research Foundation
CBT	Computer-Based Training
CSCL	Computer-Supported Collaborative Learning
ESRC	Ethics and Scientific Review Committee
HPCSA	Health Professions Council of South Africa.
ICT	Information and Communication Technology
ISO	International Organization for Standardization
IDB	Inter-American Development Bank
IORG	International Review Board Organizations
LMS	Learning Management System
MLE	Managed Learning Environment
M- Learning	Mobile learning
NACOSTI	National Commission for Science, Technology and Innovation
OECD	Organization for Economic Cooperation and Development
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UNESCO	United Nation Educational Scientific and Cultural Organization
UN	United Nations
WHO	World Health Organization.

DEFINITION OF TERMS

eLearning: This is a mode of learning that takes place electronically using the internet either in a synchronous or asynchronous learning environment.

Synchronous eLearning- This is eLearning that happens in real time. The learner and instructor are in the same place at the same time for learning to occur.

Asynchronous Learning: is a self-driven learning where the learner has an opportunity to interact with learning materials at their own pace

eLearning Adoption: This is the acceptance and use of a teaching and learning approach through the use of technological devices like computers or learning management systems

CHAPTER 1: INTRODUCTION

1.1 Overview

The chapter discusses the study's background of eLearning adoption from global, regional, and country-level perspectives, both in developed and developing countries. It covers a statement of the problem, the purpose of the study, objectives, research questions, justification, significance of the study, scope, and assumptions.

1.2 Background of the Study

Globally, the formal education systems have identified the different technology channels that could reach, teach learners, and connect faculty and learners remotely from the traditional classroom. The use of technology in both developed and developing countries depends on the ICT infrastructural level and a conducive environment for teaching and learning. In recent times since 2019, governments have settled for incorporating television, radio, social media, and digital eLearning platforms to ensure continuity and mitigate the potential loss of learning experienced during the COVID-19 pandemic (Inter-American Development Bank [IDB], 2021). For instance, radio and television were the most common technologies used in Latin America to reach learners and deliver education (World Bank, 2020).

UNESCO's 2020 report indicated that schools in about 192 countries were closed, and approximately ninety-one percent of the children and youth had to stay home during school because of the COVID-19 pandemic. This meant that there was a need for schools and

training institutions to adopt technology for formal education continuity during the pandemic and in the future. technology, therefore, was no longer a peripheral instrument but the enabler for education, becoming a critical media where both the faculty and learners would meet.

According to Dhawan (2020), eLearning is acquiring knowledge using electronic devices while allowing internet access in synchronous or asynchronous teaching and learning situations. In a synchronous environment, the instructor and learner meet online in real time, while learning occurs at the learner's pace in an asynchronous situation. Both eLearning methods allow the learning process to be more flexible and learner-driven, where the learner has more creative ways to learn (Zalat et al., 2021). According to Dhawan (2020), the UN (2020), WHO (2020), and Zalat et al. (2021), eLearning is economical for learners, faculty, and training institutions. E-learning achievement depends on the prior capacity building of learners' abilities to use the online Learning Management System (LMS). The LMS can accomplish learning in 24-hour sessions, similar to the traditional blackboard. The latter offers several advantages, such as increased effectiveness and efficiency of learning services due to improved interaction with teachers and better access to learning resources. The adoption of eLearning by faculty and learners in higher education institutions is slowed down by several factors, which include the reluctance of the learners to embrace the usage of the system, weak or lack of internet connectivity in rural and remote regions, non-skilled teaching staff in eLearning, acceptance of eLearning in training institutions and lack of practical lessons.

A study conducted by Maphosa (2021) examined the influences of learner's perceptions on eLearning acceptance and consistent use during the COVID-19 pandemic in the context of developing countries. The study established that the behavioral intention of learners to utilize eLearning is positively influenced by effort expectancy, facilitating conditions to learners, e.g., helpdesk, and performance expectancy. Maphosa's study indicated that Internet connectivity was a substantial impediment to eLearning in developing nations, with only 35% of the population accessing the Internet compared to 80% in developed countries. The study also established that limited internet access and online learning facilitating resources posed a challenge for learners to embrace the online learning environment. The digital divide has grown due to limited access to high-quality education, exorbitant internet data bundle prices, and other inequalities. According to the study, understanding factors influencing learner perceptions is critical to adopting eLearning.

Similarly, a study conducted by Ndura et al. (2024) on the challenges to the utilization of online learning that focused on the first-year nursing learners at Kemya Medical Training College campuses, it was found that the knowledge gap in the use of ICT infrastructure was a challenge shared by 38.8% of the study's participants. The authors further found that 70% of learners had devices incompatible with the media used by Kenya Medical Training College for eLearning. This limited their frequency and utilization of the eLearning system. The study also noted that the lack of orientation and inadequate preparation for online learning was cited by 5.5% of the respondents as contributing to learners' low utilization of online learning at Kenya Medical Training College campuses. The researchers held that an assessment survey needs to be conducted at Kenya Medical Training College campuses

to identify unique challenges for learners and faculty to effectively adopt the eLearning model.

A study on the satisfaction of the online learning environment among nursing learners at Kenya Medical Training College, Nairobi, by Chebii et al. (2023) found that institutional support was inadequate and affected the satisfaction of nursing learners. The study further found that the learners of Kenya Medical Training College Nairobi face challenges with reliable internet, accessing computers, and conducive study areas that significantly affect the adoption of eLearning by nursing learners. The researchers revealed that there is a higher level of satisfaction among nursing learners who are proficient in navigating online classroom features, effective in conducting online searches, and internet savvy. The study concluded that the learners of Kenya Medical Training College Nairobi must be provided with adequate training, guidance, and resources to navigate the eLearning platform effectively.

Gachanja et al. (2021) conducted a study among medical students on access and experience in research courses using eLearning during the COVID-19 pandemic at Kenya Medical Training College Nairobi. The researchers found that both challenges and opportunities exist in adopting eLearning. The study revealed that out of the nine hundred and thirty-three learners enrolled from Kenya Medical Training Colleges nationwide, 53% and 45% of the learners struggled to complete a posttest and pretest on an online course, respectively, with the asynchronous activities taught through the Learning Management System (LMS). The study established a need to orient the learners on the Learning Management System since the learners reported difficulty accessing Moodle. The learners

felt deluged because of the huge volume of materials to cover while participating in the online classes. The study also established that most learners felt there were technological challenges in the online course. The major challenge reported was the time required to navigate the eLearning classes. Against this backdrop, the researcher aims to establish determinants of electronic learning adoption by learners at Kenya Medical Training College Nairobi.

Kenya Medical Training College (KMTC), since its inception in 1927, has experienced a momentous growth of learners and a widespread expansion of campuses. The number has greatly increased to match the 47 countries as the Kenyan health system continues to devolve; increasing learners' population requires innovative strategies for Kenya Medical Training College to fulfill its mandate of teaching, research, and development towards the achievement of global health educational goals. The Kenya Medical Training College has 7 faculties with 18 departments offering 93 medical courses, according to Kenya Medical Training College 2022-2023 academic programmes.

1.3 Statement of the Problem

The COVID-19 pandemic exposed a lack of resilience in higher education in Kenya and other developing countries (Andreas, 2020). This is despite higher education institutions' efforts to develop new ideas and translate these ideas into content for teaching and delivering learner assignments. Examinations were also interrupted especially in developing countries, disrupting learning and progression. Although eLearning has several benefits, such as a flexible manner of improving access to education, its adoption has several challenges. These challenges in institutions of higher learning in Kenya include

low literacy rates of learners on ICT, unfamiliarity with technology, navigation of the learning management systems, weak infrastructure maintenance approaches, and inadequate helpdesk support (Njoroge, 2018).

The Kenya Medical Training College initiated the Moodle-based eLearning platform in 2014. Several courses were selected for teaching through the Moodle. Some courses selected include Health Records and Information Technology, Health Service Management, Pediatric Nursing, Medical Education, Critical Care Nursing, Orthopedic and Trauma Medicine, Clinical Medicine, and Surgery. In a study conducted at Kenya Medical Training College, learners struggled to undertake an online research course due to low adoption of eLearning (Gachanja et al., 2021). Findings from this study indicate that only 53% and 45% of the learners were able to complete the pretest and posttest, respectively. The struggle to complete the online course indicates a low performance among the learners.

Although Kenya Medical Training College adopted the eLearning policy in 2014 and the Nairobi campus has implemented eLearning, the institution has yet to implement eLearning for all courses. Continued expansion of Kenya Medical Training College campuses across Kenya's counties has been bedeviled by a faculty shortage, necessitating the campuses to adopt eLearning to increase access to quality health professions education in the country. The content delivery disparity in many courses within the institution does not ensure inclusivity in learners willing to undertake the courses that equip them with competencies that will translate to Kenya Medical Training College contributing to the attainment of global educational goals by 2030. The Kenya Medical Training College is

the largest public institution that produces most of the country's middle-level health workforce; their continuity in learning during a crisis or catastrophe is paramount. Failure of learners to adopt eLearning for all the courses indicates that some learners were left behind and ultimately incapable of building up their theoretical competencies for effective translation in placement facilities.

According to a study conducted by Kaloki et al. (2023) on the level of utilization of eLearning among learners at selected Kenya Medical Training College campuses, it was established that learners who did not participate in online classes indicated that they lacked compatible devices, internet bundles, and poor internet connectivity. The study noted that 76.8% of the learners preferred face-to-face and online classes. The conclusion of the study revealed that there is a high preference for face-to-face classes, and this affects the utilization of online classes at Kenya Medical Training College. The study by Kaloki et al. (2023) had a research gap in examining the determinants of eLearning adoption that would significantly boost the utilization level of online classes at Kenya Medical Training College Nairobi.

This study acknowledged the existing challenge of eLearning at Kenya Medical Training College Nairobi and the gap in research on the factors affecting the adoption of eLearning at the institution. Thus, this research aimed to establish the determinants of eLearning adoption by learners at Kenya Medical Training College Nairobi and to understand underlying challenges, making recommendations to strengthen the eLearning adoption as a mainstream teaching and learning approach in Kenya Medical Training College Nairobi and other campuses in the country.

1.4 Research Questions

i. To what extent do technology-related factors influence eLearning adoption by learners at the Kenya Medical Training College moderated by age, gender, and department?

ii. To what extent do learner-related factors influence eLearning adoption at the Kenya Medical Training College Nairobi, moderated by age, gender, and department?

iii. To what extent do institutional factors influence the adoption of eLearning at Kenya Medical Training College Nairobi, moderated by age, gender, and department?

1.5 General Objectives

To establish the determinants of eLearning adoption by learners in the Kenya Medical Training College Nairobi.

1.5.1 Specific Objectives

i. To examine the extent to which technological factors influence the eLearning adoption at Kenya Medical Training College, Nairobi moderated by age, gender, and department.

ii. To determine the extent to which learner factors influence eLearning adoption at Kenya Medical Training College, Nairobi, moderated by age, gender, and department.

iii. To assess the extent to which institutional factors influence eLearning adoption at the Kenya Medical Training College, Nairobi moderated by age, gender, and department.

1.7 Justification of the Study

The research study aimed to gain insights into the determinants influencing the adoption of eLearning, such as slow adoption of eLearning and inadequate completion of coursework by learners. The study discovered technological gaps, learner factors, and institutional factors that affect how readily learners adopt eLearning. The study's findings aim to improve the management of Kenya Medical Training College so that learners can attain full eLearning adoption. The management of the Kenya Medical Training College would develop strategies to address the institutional, technological, and learner factors that affect the adoption of eLearning at the institution. Full adoption of eLearning will increase learners' enrollment at the institution and improve their efficiency in teaching, which would lead to the learners' satisfaction after full completion of the courses.

1.8 Significance of the Study

The study findings will be useful to the leadership of Kenya Medical Training College, Nairobi formulates policies that are informed by the learner's point of view on eLearning adoption with the aim of improving the performance of the learner and that of the institution. The faculty members will be more informed on key determinants of the adoption of eLearning that influence the learner's performance levels towards the adoption of eLearning.

Most institutions, particularly universities in affluent nations, have fully embraced eLearning, allowing learners to learn from the comfort of their locations. This study will investigate the factors of eLearning uptake to provide empirical data to influence the policy framework within Kenya Medical Training College Nairobi and ensure that they attract a broader spectrum of learners. The study will provide recommendations that would improve the adoption of eLearning in the Kenya Medical Training College in general and provide baseline information in other higher learning institutions. This will help in the development of learner-centered policies for eLearning adoption.

1.9 Scope of the Study

The study's scope was to determine the influencers of eLearning adoption among the learners of the Kenya Medical Training College Nairobi campus. The factors explored were technology, learner, and institutional factors. Technology factors will focus on information technology (IT), the flexibility of the eLearning system, perceived ease of use, and usefulness of the eLearning system. The learner factors include computer literacy, internet connectivity, affordability of laptops, attitudes, and perceptions of ease of use of the eLearning system. Institutional factors are activities that are put in place to support the learner in the use of computers, such as the availability of help desks, provision of eLearning experts, and availability of policies to guide the use of eLearning as a method of instructional design. The study involved learners from a sample of Kenya Medical Training College Nairobi departments that apply a blended instructional design (Health Records and Information Technology, Clinical Medicine and Surgery, Nursing

Department, Orthopedic and Trauma Medicine, Pharmacy and Medical Education Departments).

The learners at the Kenya Medical Training College Nairobi campus were exclusively targeted from a sample of six departments that blend face-to-face type of learning with eLearning. The study took an estimated period of five months hence the selection of a few departments for the study. Due to limited resources, the study focused only on Kenya Medical Training College's main campus, Nairobi campus. Many factors not examined in the study may influence eLearning adoption by learners and should be considered in the interpretation of results

1.10 Assumptions of the Study

The researcher expected the selected participants to be truthful in their responses and they provided the correct and accurate information on factors influencing eLearning adopt.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents the eLearning concept and related literature on determinants of eLearning adoption. The literature review narrowed down this study's objectives, which include technology factors, learner factors, and institutional factors. Theoretical and conceptual frameworks will be described, and the identification of the research gap will be discussed.

2.2 The Theoretical Framework

Many models have been utilized in various research to study the adoption of eLearning. The study will adopt the Technology Acceptance Model (TAM) theoretical framework. This model focuses on the theoretical foundation of reasoned actions. Technology Acceptance Model -1 (TAM1) was established by Davis, Bagozzi, and Warshaw in 1989. Later, other researchers innovated on TAM 1 and postulated TAM 2 (Vankatesh & Davis, 2000) and TAM 3 (Vankatesh & Bala, 2008). None of the models consists of all the criteria for adopting eLearning. For instance, Ejdys (2021) found that the availability of technology does not necessarily improve its acceptance by the learner; other aspects are needed. Theoretical models are vital in eLearning to account for learners' acceptance of learning. Learners must adopt eLearning for continuity, coursework completion, and performance improvement.

2.2.1 Technology Acceptance Model

Davis (1989) founded the Technology Acceptance Model (TAM), widely used in eLearning research studies. TAM models focus on two technological measures: the system's usefulness and ease of use. Perceived system's user-friendly is the degree to which a learner can use the system with little or no effort. The two determinants of eLearning adoption are responsible for developing an attitude toward using innovation (Davis, 1989). In the first research question, the researcher concentrated on the technological factors that influence the adoption of eLearning. TAM will address the first research question by describing the ease of use of the Learning Management System. ELearning allows the students to access more learning materials, which are available asynchronously and synchronously than teacher-centered learning.

2.2.2 Theory of Reasoned Action

The theory of Reasoned Action (TRA) was cofounded by Alzen and Fishbein in 1980. The TRA model explains that a learner's behavior is because of individual attitudes towards some behavior or any change in an individual's behaviors thoughts, or feelings that is caused by other individuals. Further, the TRA theory posits that an individual's intention to execute or not to execute a particular behavior is a fundamental determinant of the action (Alzen, 1991). This theory is essential in the careful examination of system use. In the context of this study, the learner's perception and attitudes towards adopting eLearning are well addressed using TRA. The variables will inform the study about the positive attitudes, negative attitudes, and perceptions that influence the adoption of eLearning. Alzen and

Fishbein (1980) reveal that a learner's attitude towards adopting eLearning is recognized as a function of the learner's belief system. This perception will remain so if the learner believes that eLearning is difficult.

2.2.3 Technology Acceptance Model 2 (TAM2) and Technology Acceptance Model 3 (TAM3)

Technology Acceptance Model 2 (TAM -2) model by Venkatesh and Davis (2000) informs that training is a key function that leads to successful system use and adoption by learners. Faculty facilitation of technology skills development results in improved adoption of eLearning among learners. Adequate training in ICT skills, providing helpdesk services, and providing IT experts to assist learners in using the eLearning system boost motivation and interest in adopting eLearning. According to Venkatesh and Bala (2008), learners use ICTs mostly due to perceived value and user-friendly interface. Venkatesh and Bala (2008) agree with Vankantesh and Davis (2000) on motivation as a major factor in enhancing students' eLearning adoption. The use of an eLearning system by learners is made pleasant and perceived as being easier to use, both are indicators of improved intention to adopt technology (Venkatesh, 1999). The training of learners needs to be allowed adequate time by institutions of higher learning to increase their competence in using technology, hence increasing their adoption towards learning. TAM3 recognized the training of lecturers on eLearning use, employee's eLearning experience, understanding of the self-belief of learners on the use of learning, and lecturer's variations as key influencers of perceived ease of use and usefulness of an eLearning system.

2.3 Review of Related and Empirical Literature

Globally, formal education was disrupted during the COVID-19 pandemic. A study by Clark (2020) on digital learning in United Kingdom, found that the coronavirus pandemic lead to an increase in eLearning, where 86% of class content was taught remotely; the faculty and learners could quickly transition from face-to-face to eLearning with the support of the United Kingdom government to overcome barriers such as internet connections and access to digital devices.

Eltahir (2019), in an eLearning study in Sudan, identified four central challenges of implementing the eLearning system. These challenges included poor internet service provider network infrastructure, low ICT literacy, weakness in content development, and a lack of proficiency in a second language. The researcher also found that learners' acceptance and use of eLearning depended on their perception of its usefulness, social influence, and ease of use. Further, the researcher found that learners in Sub-Saharan Africa had unfavorable attitudes toward eLearning due to a lack of expertise, resources, ICT infrastructure, skills, well-structured content, difficulties in internet connection, and insensitivity to culture and copyright illegalities.

Njoroge (2018) found out eLearning has been one of the benefits of using CBT. This reveals that learners have been empowered by mobile phones to participate in learning programs without having any geographical constraints. The provision of eLearning requires concepts, technology, and devices to reinforce each other. The current eLearning software application is the Learning Management System (LMS), which is website-based and can web host, organize, document records, and deliver eLearning.

2.3.1 Technological-related Factors Influencing eLearning Adoption

Perceived utility, perceived user-friendliness, and ICT infrastructure are examples of technological factors. One of the main factors influencing people's intentions to use computers is perceived usefulness. Davis (1989). Similar to attitude and perceived ease of use, usefulness significantly impacts behavioral intention. Regarding user adoption of eLearning, IT infrastructure's capacity and dependability are key considerations. The attitude of learners towards eLearning is an integral factor in assessing the intention of learners to use eLearning is their attitude towards it. Learners' choices when using eLearning are influenced by their norms.

Ja'ashan (2020), on challenges and prospects of university learners using eLearning, found that the accessibility of eLearning plays a significant role in the learners' behavioral intention to accept the usage of eLearning. This implies that if learners have a positive attitude, they will acquire proper ICT skills and are motivated and intend to use eLearning with confidence and in an enjoyable way. The study also established that learners are ready to accept eLearning and shift to the eLearning model when there is the accessibility of content. Ja'ashan's study found some challenges with eLearning that affected the accessibility of e-content among the learners, resulting in low adoption of eLearning. Ja'ashan (2020) further noted that learner's time constraints to do online exams and limited interaction between the teaching staff and learners are challenges for the adoption of eLearning. Amid the challenges, eLearning has benefits, including learners being able to

access their marks in time, studying at any time and checking on the course materials anywhere and anytime.

Yakubu and Dasuki (2018), on factors affecting the adoption of eLearning technologies among higher education learners, found that learners' intention to use was influenced when all instructors needed to use the ICT application to teach their course. Hence, this influences the positive behavior of learners. The results indicate that facilitation conditions and behavioral intentions were determined to be common factors that positively influenced the actual usage by the students. The results also agreed with those of Nassar et al. (2019), who noted that behavioral intention positively mediates social influence on ICT adoption. The relationship between social influence and behavioral intention is negatively moderated by age. This suggests that social influences impact users' plans to use ICT and that other users view the value of ICT as influencing their decision to use and adopt ICT. This suggests that the behavior intentions of other learners may influence an individual's intention to use technology for learning.

On the other hand, Njoroge (2018), on the influence of the adoption of eLearning among Kenyan universities, found that the rapid spread of the Internet could enhance eLearning adoption. Some challenges that delay adoption, however, include the absence of a systematic strategy for implementing ICT, attitude and awareness towards ICT, lack of ownership, and inadequate funds to facilitate the internet services required while learning.

2.3.2 Learner-Related Factors Influencing eLearning Adoption

Peng and Hwang (2021) argued that the development of the internet has improved the educational environment, with eLearning being a solution to the learning environment. This is because eLearning has many advantages, such as learning anywhere and anytime. This implies that learners can utilize the convenience of mobile data for eLearning. The location and time for learning is now expanded beyond the traditional classroom. For the effectiveness of learning, a model for teaching strategies, and information technology and design of teaching techniques provide diverse teaching materials for individual learners.

Wong et al. (2020) identified social media operation and delivery as ways to improve eLearning. For example, the cost saving that eLearning can bring to the mass media is a significant driver for implementing eLearning applications. This comes with a reduced cost from a reactive to a proactive delivery approach. The advancement of technology would, therefore, reduce the cost of internet usage, augmenting users' interest in social media platforms. Since social media have become a significant part of daily lives for many people, this would be an essential medium for education. It is imperative to recognize that social media platforms have become an essential part of eLearning in higher education as a means of communication between the faculty and the learners. Peng and Hwang (2021) found social media was helpful since it was perceived as easy to use, it was perceived less expensive, and self-belief by the learners who were motivated to adopt it as a platform for learning. The result also shows that social media, through sharing and interactions, have become an essential trait of eLearning. It also established that eLearning through social media had become more fashionable than traditional classroom learning.

The educational environment has significantly changed because of the use of technology. The availability of laptops and desktop computers in institutions and at home helps learners attend online classes. Peng and Hwang (2021) indicated that online education reduced the risk of COVID-19 during the Pandemic. The study found that learners conveniently used their devices away from the class, where the learners learned more effectively when learning using online instruction than they did when in class. According to the study, the technology acceptance model was also perceived for ease of use of technology, enhancing learner's motivation to use the eLearning platform more often.

Bervell and Umar (2017) discovered that eLearning adoption was influenced by attitudes towards performance expectations, usefulness, the perception of how LMS was easy to use, and the social influence on eLearning. The study revealed that Sub-Saharan Africa experienced challenges in eLearning adoption, including a lack of ICT infrastructure, user skills and training, system quality, user policy, and management support in various universities.

Kingori (2018) noted that internet penetration in Africa accelerated the growth and adoption of eLearning platforms. The platforms include social media such as Zoom, Facebook, and YouTube. The study found that the usability of social media was because of the perceived user-friendliness in navigation, usefulness, and the behavioral and attitude intention to use. Njoroge (2018) noted that Kenyan universities should have computer supplies to equip learners with modern information technology skills. The perceived ease of use of computers would mean that the adoption of eLearning will also be accessible. The learners, in most cases, had issues since they had low self-belief, computer anxiety,

playfulness, and the perception of being controlled externally. However, when learners gained ICT skills, they were confident using computers, encouraging eLearning adoption.

2.3.3 Institutional Factors Influencing the Adoption of eLearning

Learning institutions in technologic-deficient countries needed more time to change from the traditional teaching method to eLearning adoption during the pandemic (Peng & Hwang, 2021). Maphosa (2021), in his study on the adoption of eLearning and usage, noted that most institutions in countries such as Zimbabwe needed help to adopt eLearning. This was because they needed more content and resources to help implement the eLearning platforms. However, this was useful for institutions that had adopted online platforms and could adopt eLearning. The same author further found that moving to an online platform is convenient for the learning environment since it offers learners access to learning materials 24 hours a day, improving the learning program. Hence, this results in learner-centered learning and teaching methods. The learner-centered teaching method is essential since it allows learners to access recent multimedia learning materials compared to the physically available printed learning materials. It is imperative to appreciate that online learning approaches have blended campuses and non-campus-based learners. This enhances knowledge sharing and strengthens the communication channels, improving performance. This change has recently been witnessed in most developing countries (Maphosa, 2021).

Coman et al. (2020) noted that most institutions of higher learning have invested and are continuing to invest in online systems and devices to enhance the online learning

environment. However, the study found that even with the adoption of new technology, there have been challenges with innovative eLearning systems that reinforce and support teaching and learning. Innovation is essential since it will help to improve the various electronic devices used and can result in the integration of technology to satisfy people's learning needs.

The availability of the ICT infrastructure is fundamental for the triumph of eLearning. According to Garad et al. (2021), the availability of a Learning Management System (LMS), electronic devices, communication applications, and internet accessibility is critical. This study found that the availability of ICT infrastructure encouraged eLearning for learners, raising their cognitive competence. The study established that learners could effectively use the LMS, receive and send materials online, and do their assignments simultaneously. The study also found it important for the learners to have ICT applications to help them in the class. The study found that communication is also critical between learners and lecturers when adopting eLearning.

Njoroge (2018), in the study on eLearning adoption factors in Kenyan universities, found that the majority of Kenyan universities had yet to invest in ICT technology. However, they recognized the potential of ICT to transform their teaching and learning. The study noted successful eLearning integration at different university levels, especially in distance learning programs. The study identified that the ratio of learners to technical support was high, reducing the impact on the student's skills in ICT.

2.4 Identification of Knowledge Gap

Several studies on eLearning have been conducted on diverse subjects. Table 2.1 provides a detailed list of the challenges of adopting eLearning. This case on eLearning adoption by learners at KMTC Nairobi seeks to study Technological, Learner, and Institutional factors identified as crucial determinants of eLearning adoption.

Table 2.1: Summary Gaps of Literature Review

Author(s)	Title	Findings	Gaps
Etahir (2019)	**e**Learning study in Sudan	Poor internet, weak content development**,** ICT Infrastructure were challenge of eLearning adoption	Did not identify unique challenges for both learner and faculty
Njoroge (2018)	Influence of Adoption Factors on Implementation of eLearning in Kenyan Universities.	Basic training on eLearning and eLearning support, staff-influenced adoption of eLearning, Learning Management system availability, ICT infrastructure inefficient and nonexistence of eResources	Did not address all factors affecting learner's adoption of eLearning.

Peng and Hwang (2021)	An empirical study to explore the adoption of eLearning Social Media Platform in Taiwan: An Integrated	Supported perceived usefulness, cost, effectiveness, self-efficacy Perceived susceptibility,	The study did not seek to establish the learner influencing factors in motivation behavior and avoidance behavior
	Conceptual Adoption Framework Based on Technology Acceptance Model and Technology Threat Avoidance Theory.	threat appraisal, and severity are not significant factors for predicting the motivation of students to adopt eLearning	in adopting efficient eLearning

Ejdys (2021)	Factors affecting the adoption of eLearning at the university level, faculty of Engineering Management.	Perceived usefulness played a crucial role in building the attitude of students towards eLearning and achieved satisfaction and personal development of users	The study failed to examine learner factors affecting early stage of eLearning adoption and creating conditions for further practical use of new technologies
Maphosa (2021)	This study evaluates university students' perceptions regarding eLearning	Performance expectancy, effort expectancy and facilitating	The study lacked to show factors that influence learner adoption of

	deployment during COVID-19 and the factors that affected usage	conditions affected students' intention to use the LMS There was positive perception from the students on use of eLearning	eLearning through loss of learning due to unavailability of Technology and cost of data
Kaloki et al. (2023)	Utilization of eLearning among learners at Kenya Medical training College	Learners did not participate on online class due to lack of internet connectivity and incompatible devices	Did not examine the determinants of Elearning adoption hat would boost utilization level of online classes

Zalat et al. (2021)	The experiences, challenges, and acceptance of eLearning as a tool for teaching during the COVID-19 pandemic among university medical staff.	Perceived ease of use, usefulness, and acceptance of eLearning Barriers of eLearning were limited internet connection, computer labs, computers and technical challenges	Lack of internet connectivity, limited number of computers/ laptops, inadequate computer labs, and technical challenges. Indicators for lack of acceptance include less than 40 years in age, teaching experience less than ten years and male gender.

Kingori (2018).	Factors Affecting Adoption of eLearning Technology in Kenya.	Self-efficacy had little effect on the adoption of eLearning System accessibility had a positive relation on increased use of eLearning	This study did not focus on a large group hence recommended a further study on a larger population to understand the attitude and behavior intention for ease use or adoption of eLearning.

2.5 Conceptual Framework

Considering various factors identified in the literature review, this study proposes the following conceptual framework. The independent variables for this study are vital determinants of the adoption of eLearning (technology, learner, and institutional factors). The mediating variable is demographic characteristics, and the dependent variable is eLearning adoption. The indicators for eLearning adoption are performance, accessibility, cost-effectiveness**,** support, and acceptance.

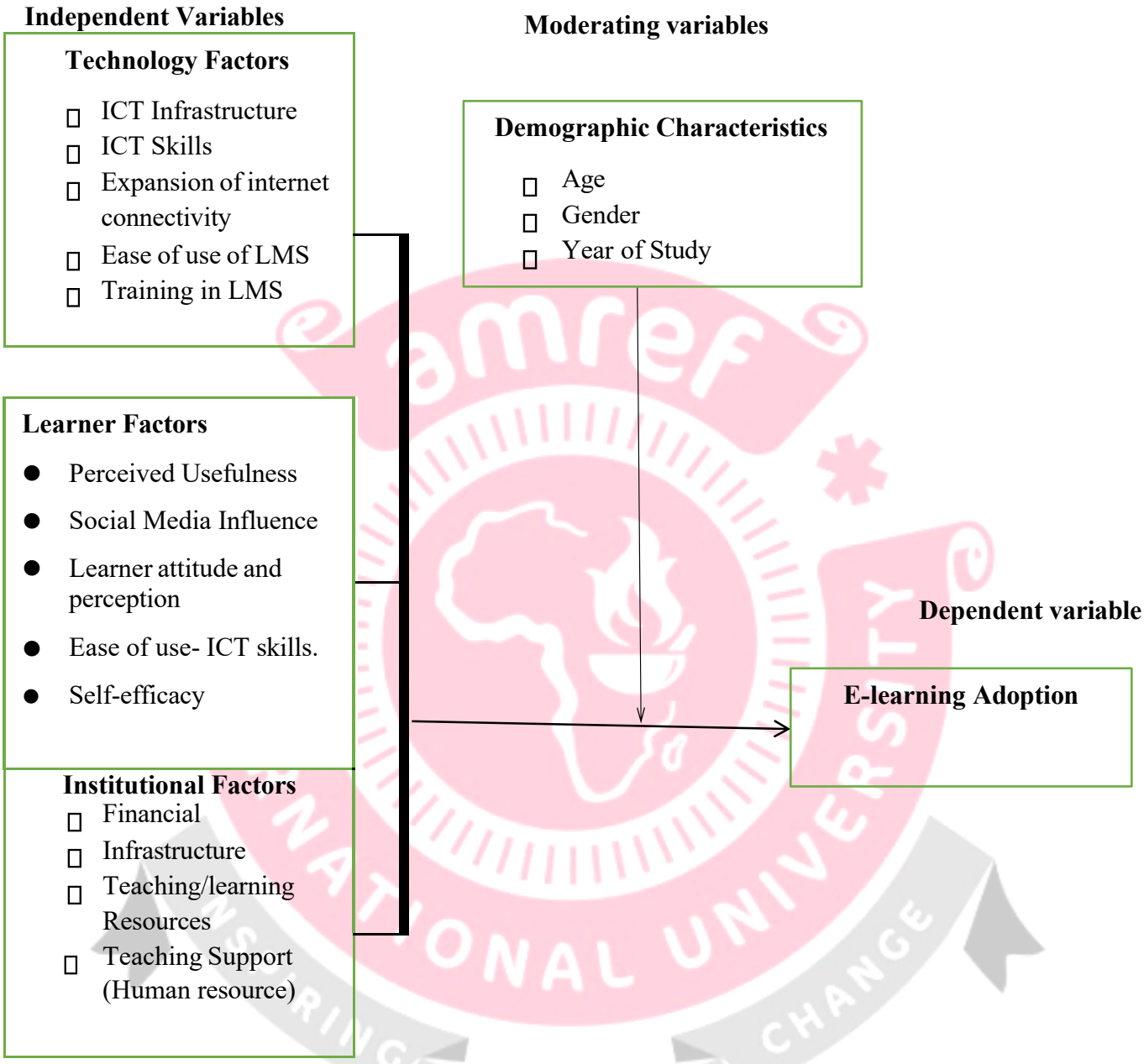

Figure 1: Conceptual Framework

(Source: Author 2023)

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter presents the research design, the site of the research, the target population, data collection methods, sampling process, and sample size. It also gives details of the instrument used to collect the data, data analysis, reliability validity, and ethical considerations.

3.2 Research Design

The research employed a descriptive design using a cross-sectional study and a quantitative data collection approach. A cross-sectional study involves data collection from many subjects at a single time (McCombes, 2020). A cross-sectional study gathers data at a single point where the issues under study are documented during the data collection period, the population is well-defined, and the variables are specified (Mugenda & Mugenda, 2003). The cross-sectional design suits this study since the data was collected simultaneously without interfering with the examined variables. Participants are less likely to withdraw before the data is obtained, allowing the researcher to analyze the selected departments quickly.

Although a cross-sectional study does not allow for the separation of causes and effects, the researcher will clarify the determinants of eLearning adoption across six departments that use the eLearning instructional design method and investigate any relationships between the variables. Mann and Stewart (2003) and Kothari (2011) stated that a good survey design provides precise descriptions, which lowers bias and maximizes reliability.

Data is used in quantitative cross-sectional design to make statistical inferences about a specific population of interest or to compare groupings.

The cross-sectional study approach is chosen because findings can easily be generalized to a large population. It provides numerical data that is highly accurate and can be analyzed quickly. Comparing dispersion measurements and discovering the most relevant determinants of eLearning adoption from the learner's perspective is possible. The study can potentially add to the existing literature on eLearning adoption by obtaining instant results in a relatively short period and at a low cost.

3.3 Study Setting

The study was conducted at the Kenya Medical Training College Nairobi campus, the main campus of other KMTCs in Kenya. The campus is on the northern side of Nairobi, off Ngong Road, opposite the Kenyatta National Hospital.

3.4 Target Population

Borg and Gall (2003) define a population as "all members of an actual or imaginary set of people, events, or things to which we intend to generalize research results." The target population is all learners in all eighteen (18) departments in Kenya Medical Training College, Nairobi. There are about 4500 students in KMTC Nairobi, and the learning activities are blended face to face and use the eLearning system.

3.5 Sample and Sampling Procedure

Mugenda and Mugenda (2003) stated that a sample ‘’is the fraction of the defined target population chosen for observation and analysis.’’ Best and Khan (2011) indicate that a

sample of 30 percent or more in a population could be perceived to be a big sample, while Kerlinger and Lee (2000) viewed such a sample as adequate for detecting a crucial effect. In this study, the number of participants included in the sample size was determined through stratified proportionate sampling procedure and purposive sampling. The stratified proportionate sampling involves a sub-division of the population into smaller homogenous groups or strata when the population is composed of different groups to get a more accurate representation.

The learners were the main participants in this study for drawing a random sample. However, a representative sample of the faculty was purposively sampled to give views on issues affecting the adoption of eLearning since the faculty is closely linked with the learning activities of a learner on day-to-day activities. The sampling frame for the learners was made up of eighteen (18) departments i.e., Clinical Medicine, Community Oral Health, Dental Technology, Health Promotion and Community Health, Health Records and Information Technology, Medical Education, Medical Engineering, Medical Laboratory Sciences, Nursing, Nutrition and Dietetics, Occupational Therapy, Optometry, Orthopedic Technology, Pharmacy, Public Health, Radiology and Imaging, Orthopedic and Trauma Medicine and Physiotherapy. Thirty (30) percent of the departments were identified, and six (6) departments were purposively sampled for the study, ensuring the departments integrated eLearning and face-to-face learning. The departments selected were Medical Education; Health Records and Information Technology; Pharmacy Department; Nursing Department; Clinical Medicine and Surgery; and Orthopedic and Trauma Medicine.

The target population in the six departments was 750 learners. The selection of learners involved stratified sampling, where learners were stratified according to year of study and gender. These divisions were clearly defined to prevent overlapping issues.

Stratified sampling was used because it assists the researcher in getting a sample population that represents the defined target population. Stratified sampling was preferred because it enhances the inclusivity of the defined target population. After all, the researcher controlled the subgroups to ensure they had equal representation in the sampling. Furthermore, the stratified sampling assisted the researcher in comprehending the existing relationship between different groups. From the stratum, the researcher used a simple random sampling technique to identify the desired sample size from the subgroups. A list of learners per department was requested from departmental heads for sampling to ensure a non-discriminatory selection of participants. Each learner from the sampling frame was given an equal chance of being selected. A sample of departmental heads or representatives as key informants were interviewed.

Inclusion Criteria: The learners in the selected six departments, which offer a blend of eLearning and face-to-face teaching methods, were selected for the study, and a representative sample of faculty who were heads of departments with experience in both face-to-face and eLearning. Two Key Informants were sampled from the six departments.

Exclusion Criteria: The learners unwilling to sign the informed consent form were excluded from the study. Individuals who took part in the pilot study, including learners and department heads or representatives, were excluded from the study

3.5.1 Sample Size Determination

3.5.2 Learners Sample Size

The sample size was determined from a population of seven hundred fifty (750) learners from six departments where eLearning mode is part of teaching and learning. Yamane (1967) gave the formula to calculate and determine the size of the study's sample. This sample size was determined by using a statistical formula (when population N is known) at a confidence level of 95%, with p = .5 assumed as equation 5.

$$n = \frac{N}{1+N(e)^2}$$

Where n is the sample size. N is the population size e is the level of precision (acceptance sampling error)

Therefore, the sample size will be

$$n = \frac{750}{1+750(0.05)^2} = 261 \text{ learners.}$$

A representative population is shown in Table 3.1.

Table 1:List of Respondents

Respondents	**Target Population**	**Sample size**	**Per cent**
Nursing department	170	59	22.7
Clinical Medicine	110	38	14.6
Medical Education	120	42	16.0
Health Records and Information Technology	120	42	16.0
Pharmacy Department	140	49	18.7
Orthopedic and Trauma Medicine	90	31	12.0
Total	**750**	**261**	**100.0**

3.5.3 Key Informants Sample Size Determination

The sample size was determined from the six departments, and two key informants, who were heads of departments, were purposively sampled. These are experts in charge of departments who had experience with eLearning adoption issues within Kenya Medical Training College Nairobi.

3.6 Data Collection Instrument

A structured questionnaire for the learners was administered in a face-to-face interview to get measurable data with a high response rate. The researcher's presence allowed clarification of unclear questions by answering questions from the participants. In the presence of the researcher, the participant's response increased, and the researcher was able to evaluate the respondent's attitudes.

A structured questionnaire is an instrumental tool for gathering quantitative data in a standardized way that is internally consistent and relevant for analysis. Questionnaires have a definite relationship with the study objectives (Roopa & Rani, 2017). The questionnaire utilized in this study was designed based on the researched literature focusing on crucial determinants (Technology, Learner, and Institutional factors) determining eLearning adoption. Social demographics characteristics like gender, age, department, and year of study were captured in the first part of the learner's questionnaire; the questions were detailed and brief to ensure ease of response.

The learner's questionnaire sections B, C, D, and E was a Likert scale of questions ranging from 1(lowest to 5(greatest) (5 strongly Agree. 4 Agree, 3. Neutral, 2. Disagree, and 1. Strongly Disagree). The Likert scale helps measure the extent of learners' perceptions and attitudes and rates the indicators of the variables under study. Section E involved questions on institutional factors. The rate at which institutional factors affect eLearning adoption was rated as follows: greatest extent, greatest extent, moderate extent, lowest extent, and lowest extent.

The survey questionnaire for the key informants' demographic characteristics (part A) was designed to reflect the key informant's academic experience. Parts B, C, and E reflected on their learners' challenges. This is because the faculty is experienced in matters involved with learning. Part D dwelled on Institutional factors such as teaching resources and financial and infrastructure support.

3.7 Validity and Reliability

3.7.1 Validity

Mugenda and Mugenda (2003) explain the concept of validity by indicating that the validity of findings denotes that the analyzed data gathered represent the phenomena under study. There are three types of validity.

Construct validity evaluates the measure of what it constructs to measure. Therefore, construct validity was handled by formulating an instrument based on previous literature that was related. A preamble statement was included in the structured questionnaire that the study is for academic purposes. The participants were requested to keep their names private. This instilled confidence in the study participants to give objective responses. The researcher's presence during data collection enabled respondents to seek clarity of the questions where needed. Questionnaires with missing data were eliminated during data analysis.

Content Validity is the extent to which items in an instrument portray the content diverse to which the instrument will be generalized (Taherdoost, 2016). This suggests that the content validity of all three independent variables (Technology factors, Learner factors,

and Institutional factors) necessary to support the study were identified from the literature review.

A pilot study was carried out to check for bias, identify errors, and check for ambiguity in the questionnaire. Ten percent of the sample size, 26 participants, was involved in the pilot study.

3.7.2 Reliability

Refers to the extent to which a phenomenon or an event can be analyzed and have stable and consistent results. This suggests that the outcomes are repeatable. When performing a reliability test, it is crucial to consider the consistency between a measuring instrument's components (Taherdoost, 2016). Cronbach's alpha was used to gauge the study's dependability. The Statistical Package for Social Sciences was used to calculate the Cronbach alpha reliability coefficient. A statistic above 0.7 score of reliability is acceptable for the study.

The reliability statistics determined using Cronbach Alpha are presented in Table 2. Technology factors had a reliability of 0.848, Learner factors 0.927, Institution factors 0.751, and eLearning adoption 0.886. This shows that all the factors tested had high reliability, with Cronbach's Alpha being greater than 0.7. To estimate reliability, Cronbach's coefficient alpha calculates the test's internal consistency or the average correlation of its items. (SAS, 2013).

Table 2:Reliability Test

Scale	Cronbach's Alpha	Number of items
Technology factors	0.848	8
Learner Factors	0.927	8
Institution factors	0.726	9
eLearning adoption	0.886	8

3.8 Data Collection Procedure

Data collection is gathering and assessing information on specific variables to answer questions and assess outcomes. (Kombo & Tromp, 2006). Initial contact with the Kenya Medical Training College Nairobi academic research department was established to seek authority to carry out the research and discuss the purpose and significance of the study. During the meeting, arrangements were made to reach various heads of departments who had previously linked the researcher with the respondents. Once the researcher contacted the respondents, the time for data collection was planned and organized. The researcher collaborated with heads of department to ensure respondents were available for data collection activity on the scheduled date.

The respondents were classified into different strata, which were coded for data labeling instead of any personally identifiable information; the coding of data transformed the collected information into a set of meaningful categories to provide proper data records for

analysis. Data was collected by taking a cross-section of a group (department). The participants filled out the questionnaires.

3.8 1 Key Informant Interview

The researcher introduced herself to the faculty heads of the department sampled through the purposive sampling technique. The researcher explained to the faculty that the interview was anonymous and was requested to read and sign the informed consent. A questionnaire with both closed-ended and open-ended questions was administered to collect responses from knowledgeable key informants who could offer relevant views on issues affecting eLearning adoption and have first-hand knowledge about the learners.

3.8.2 Data Management

The researcher solely managed data. Codes were generated for labeling data according to study objectives concerning participant identifiers such as department, gender, age, and year of study. Access to master code lists was limited to the researcher only. The only person involved in data collection was the researcher. Data was secured by installing antivirus software and a strong password on the laptop used for storing data records. The hand copies of the raw data collected were stored in lockable cabinets. Files containing electronic data were protected using strong passwords, and consent forms were secured separately from raw data in locked cabinets. Paper records kept in lockable cabinets will be shredded after six years of the study. The shredding of paper will ensure that all sensitive information is securely destroyed.

3.9 Data Analysis and Presentation

Data was collected, coded, and analyzed using Statistical Package for Social Sciences (SPSS). The data collected was analyzed according to the responses from the survey and put into categories such as age, gender, department, and year of study. Classifying the features from the data in numerical form allowed for counting the features and, hence, attempting to explain what was observed through descriptive statistics, frequency, percentage, and means. This provided a good insight into the learner's experiences and behavior regarding the adoption of eLearning. The quantitative data provided acceptable levels of accuracy, and the comparison of measures of dispersion allowed the presentation of the analysis in a graphical form. The findings of the study will be shared with the study supervisors, Amref International University, and the Kenya Medical Training College research department. The research will be published in an appropriate academic journal. The researcher will keep the hard copy of the filled questionnaires for six years post-publication of the research according to the Health Professions Council of South Africa (HPCSA), guidelines on keeping records (HPCSA, 2008), and dispose of it at the expiry of this period by shredding of papers to ensure confidential data is securely destroyed.

3.10 Ethical Consideration

Permission to conduct the study was obtained from Amref International University (AMIU) graduate school. The Amref Health Africa Ethics and Scientific Review Committee (ESRC) obtained the study's approval. The National Commission accredits the ESRC for Science, Technology, and Innovation (NACOSTI), registration number NCST/NBC/AC/0912. The ESRC is also registered with the Office for Human Research

Protections (OHRP), U.S. Department of Health and Human Services. The International Review Board Organizations (IORG) registration number is IORG0007315, and the Federal Assurance (FWA) number is FWA00018713. Permission to carry out the study was sought from Kenya Medical Training College Nairobi.

The respondents' privacy was respected during the study by providing consent forms. Only the respondents who consented to participate in the study were allowed to participate; while recruiting respondents, a list of learners with their gender was requested from the department heads for sampling. Gender matters in stratified sampling. Other information was optional to recruit respondents. The interviews were conducted while the learners were on learning breaks, in collaboration with the faculty, to ensure that their everyday learning was not disrupted.

The participants voluntarily participated in the study without coercion and had the right to ask questions during the interviews. After a full disclosure, the respondents made informed, voluntary decisions about study participation. This information was captured in a written consent administered to the participants individually before the interview. The written consent contained elements: disclosure of essential information to participants, participants' understanding of the information, voluntary participation, and the liberty to discontinue their participation at any stage without prejudice. The participants who signed the written consent were allowed to participate in the study.

Participants in this study were required not to share their names or any other form of identity to maintain confidentiality. The information obtained was used for this research

and will not be shared for other purposes. No inducement was given to the respondents for them to participate in the research. Respondents in this study participated in this study voluntarily and were at free will to withdraw whenever they felt discomfort to proceed in the study. All information given by participants was guarded in a relationship of trust. The anonymity of the participants in filling out the questionnaire without indicating their identity ensured that their privacy was protected as they participated in the study. Data was coded to ensure the anonymity of the respondents.

Privacy of the venue where the data collection was done was observed. Data collection occurred in a secluded interview room from the typical daily classroom activities. The interview room door was locked to restrict access to unauthorized persons. Privacy was enhanced by placing a poster on the door as a warning that the area was restricted. The sign of a restricted area/warning restricted any movements or noise within the spaces where the interview took place. Privacy and data protection laws were respected during the research process.

3.11 Study Constraints and Limitations

The learners at the KMTC Nairobi campus were exclusively targeted from a sample of six departments that blend face-to-face learning with eLearning. The study took an estimated five months, hence the selection of a few departments. Due to limited resources, the study only focused on Kenya Medical Training College's main campus, the Nairobi campus. Many factors not examined in the study may influence eLearning adoption by learners and should be considered in the interpretation of results.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents the findings from the data collected under the study's objectives, which were to determine the extent to which technological, learner, and institutional factors influenced the adoption of eLearning at the Kenya Medical Training College Nairobi.

4.2 Presentation of Results

4.2.1 Descriptive Statistics

4.2.1.1 Response rate

The response rate of the study is presented in Table 3. The study targeted 261 respondents, and 252 responded, yielding a response rate of 96.55%. The response rate of 100 percent was not achieved due to the data cleaning. The respondents were chosen based on the six departments sampled at the Kenya Medical Training College Nairobi. A response rate of 94.92% was achieved in the nursing department, with 56 responses out of the targeted 59. A response rate of 94.74% was achieved in the clinical medicine department, with 36 responses out of the targeted 38 respondents. The response rate for the medical education department was 97.62%, with 41 responses achieved compared to the 42 targeted responses. A response rate of 95.25% was recorded in the Health Records and Information Technology Department, where out of the targeted 42 responses, 41 were achieved. A response rate of 97.96% was recorded in the Pharmacy Department; out of the targeted 49, there were 48 responses. The Orthopedic and Trauma Medicine Department showed a 100% response rate.

Table 3: Response Rate

Sample respondent Response Department	target s	rate
Nursing department 59	56	94.92%
Clinical Medicine 38	36	94.74%
Medical Education 42	41	97.62%
Health Records and Information Technology 42	40	95.24%
Pharmacy Department 49	48	97.96%
Orthopedic and Trauma Medicine 31	31	100.00%
Total 261	252	96.55%

Source: Field Data 2023

4.2.1.2 Department of the Respondents

Figure 2 presents the composition of the study's respondents based on their departments. The research was carried out in six departments. The Clinical Medicine Department received 36 (14.3%) responses, the Nursing Department received 56 (22.2%), the Orthopedic and Trauma Medicine Department received 31 (12.3%), the Medical Education Department received 41 (16.3%), the Health Records and Information Technology Department received 40 (15.9%), and the Pharmacy Department received 48(19.4%).

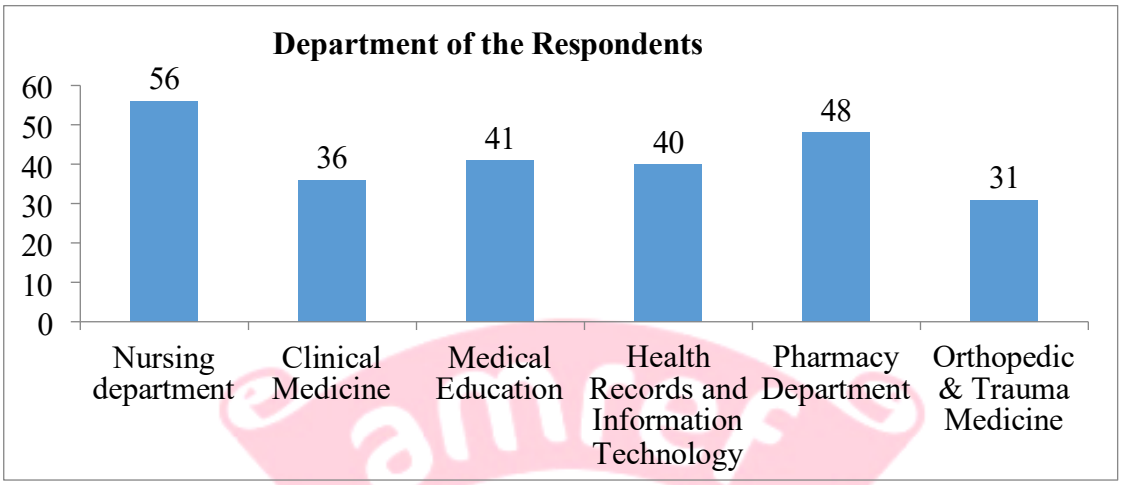

Figure 2: Department of Respondents

Source: Field Data 2023

4.2.1.3 Gender Distribution

Figure 3 represents the Gender distribution of the respondents. Male participants in the study were 107, accounting for 42.5% of the total participants; female participants were 145, accounting for 57.5% of the total participants. Though there was no exact ratio of female to male distribution within the institution, key informants indicated that the institution has more female students than male students.

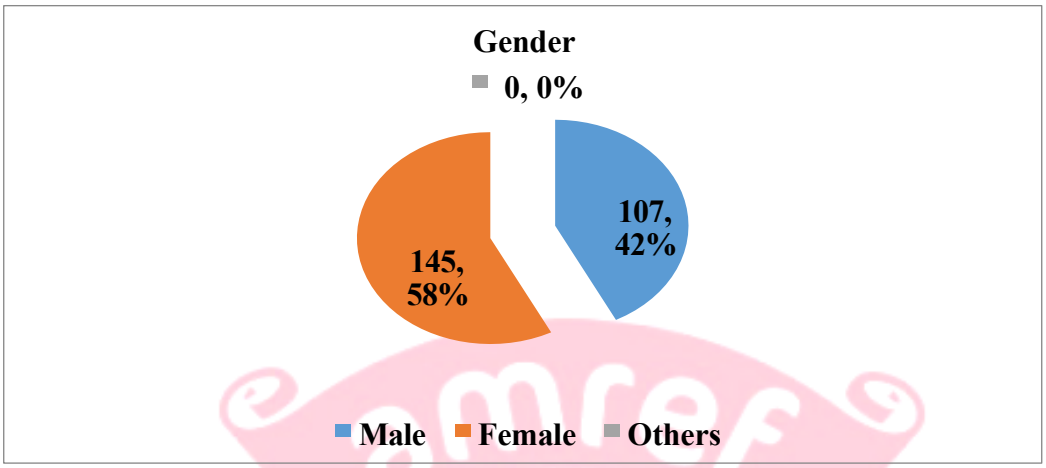

Figure 3 Gender Distribution

Source: Author Field Data 2023

4.2.1.4 Age Distribution

Figure 4 depicts the composition of the study respondents based on age. There were 83 (32.9%) respondents between the ages of 18 and 22, 76 (30.2%) between the ages of 23 and 25, 51 (20.2%) between the ages of 26 and 28, and 42 (16.7%) over the age of 28. This demonstrates that most students at KMTC Nairobi are between 18 and 22.

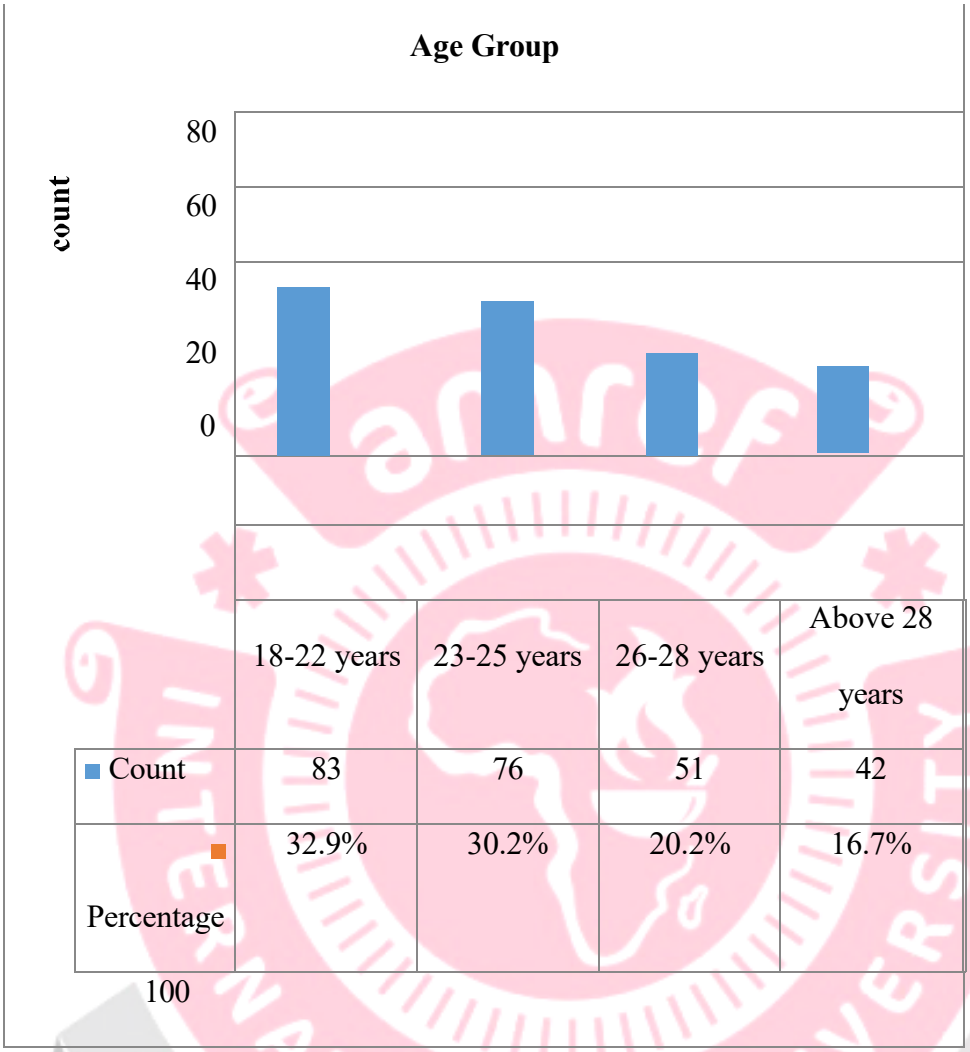

Figure 4: Age Group Source

Author Field Data 2023

4.2.1.5 Year of Study

Figure 5 depicts the composition of the participants in the study based on their year of study. The study focused on students in their second and third years of study who had prior experience with eLearning. 139 (55.2%) respondents were in their second year and 113 (44.8%) respondents in their third year. The majority of the participants were second-year students, and this was influenced by the unavailability of third-year students. According to

the heads of respective departments, many third-year students were on their industrial attachment.

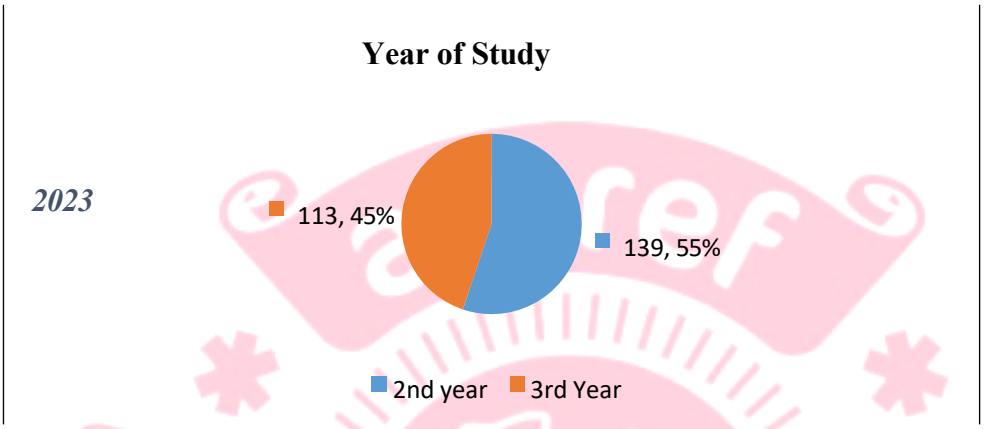

Figure 5: Year of Study

Source: Author Field Data

4.2.2 Technological Factors Influence eLearning Adoption at Kenya Medical Training College Nairobi

Respondents were asked to rate statements about technological factors on a 5-point Likert scale, with one representing strongly disagree (Lowest extent) and five representing strongly agree (Greatest Extent). The overall average rating of the technology factors was 3.239±0.89, which indicates that technological factors have a **moderate extent in influencing the eLearning adoption at Kenya Medical Training College Nairobi.**

Table 4:Technology Factors

Technology factors items	strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	mean ± SD
I can comfortably use the Moodle eLearning application software	22(8.7%)	27(10.7%)	57(22.6%)	92(36.5%)	54(21.4%)	3.51±1.19
I find it easy to log in to the Moodle eLearning system	20(7.9%)	42(16.7%)	43(17.1%)	87(34.5%)	60(23.8%)	3.5±1.24
I can download files from the Moodle eLearning system	42(16.7%)	42(16.7%)	62(24.6%)	65(25.8%)	41(16.3%)	3.08±1.32
I find it easy to navigate through the Moodle eLearning system	19(7.5%)	33(13.1%)	67(26.6%)	87(34.5%)	46(18.3%)	3.43±1.15
I was trained on Moodle eLearning tools before commencing the use of eLearning.	49(19.4%)	65(25.8%)	49(19.4%)	59(23.4%)	30(11.9%)	2.83±1.31
I can access the Moodle help desk easily when I encounter challenges.	34(13.5%)	50(19.8%)	64(25.4%)	67(26.6%)	37(14.7%)	3.09±1.26
I own a laptop /Computer/Mobile Phone to facilitate eLearning.	27(10.7%)	25(9.9%)	30(11.9%)	64(25.4%)	106(42.1%)	3.78±1.36
Internet connectivity is adequate within KMTC- Nairobi.	67(26.6%)	55(21.8%)	53(21.0%)	43(17.1%)	34(13.5%)	2.69±1.38

Source; Field Data 2023

Table 4 shows how the respondents ranked individual technology factors. Six technology factor statements were rated as neutral that's is at a mean of 3.0 to 3.7. These technology statements included the ability to download files from the Moodle eLearning system, which received a mean rating of 3.08±1.32, the ability to navigate the Moodle eLearning system, which had a mean average rating of 3.43±1.15, , easy access to the Moodle help desk when there are issues with a mean average rating of 3.09±1.26, familiarity with eLearning software with an average rating of 3.51±1.19, and ownership of laptops/computers to facilitate eLearning which had an average rating of 3.78±1.36.

Two factors had a score of less than 3.0 mean, adequacy of internet connectivity within Kenya Medical Training College Nairobi with an average rating of 2.69±1.38. training on the Moodle eLearning tools before beginning eLearning, which had mean average rating of 2.83±1.31

4.2.2.1 Thematic Analysis of Technological Factors

Internet Connectivity Issues

There were challenges with internet connectivity reported by 171 respondents, or 77% of the total respondents. Learners felt that the institution's internet connectivity was inadequate even though they were paying for it. As a result, they resorted to using mobile data bundles, which were more expensive and strained their finances. Here are some of the responses;

"Inadequate internet connectivity throughout the institution forcing us learners to use alternative measures which are expensive to a student"

"Lack of internet access for learners." we pay for Wi-Fi which we can't access"

"Student has to cater for the internet charges. Poor students will find it challenging and extra cost from the basic school fees"

The learners claim that the institution has few WI-FI routers, contributing to poor internet connectivity. Due to traffic from many learners using the internet at once, the speed is also slow. Here are some of the responses;

"Internet connectivity to be improved hence installation of Wi-Fi routers"

"The internet connectivity is low due to many numbers of students"

The learners experience system issues as a result of internet connectivity issues. The system frequently hangs, according to the learners, especially during exams. Some of the responses from the learners were as follows

"Hanging of the system while doing online exam leading to wastage of allocated time"

"System failure especially during Exams"

"System hanging mostly during online examination"

Log-in and Navigate the Moodle System

36% of respondents indicated that the major technological problem faced by the institution in the adoption of eLearning was logging in and navigating within the Moodle system. The students indicated that there are certain units that are restricted to a certain number of students, and whenever there is more than the set number, the other ones are logged out.

Students also indicated that there is a challenge in password recovery. Some of the respondents said that;

"It is a challenge when it comes to harmonized units that have a certain number of participants to log in and some are unable to join the lesson"

"Sometimes the system is down but it's easy to access and in case of passwords loose to retrieving the account takes some time"

Logging in and navigating the system is also affected by internet connectivity. The respondents indicated that when there is a huge amount of traffic of students accessing the system simultaneously, logging in may take quite some time, and navigating the system also becomes slow. Some of the respondents said;

"Logging in issues and while using it with so many other students it gets very slow"

"The Moodle eLearning system is a little bit difficult to navigate and the internet connectivity is not that strong"

A few learners also indicated that the navigation process is too cumbersome and there was less support to them. Some of the respondents said;

"Long navigation process"

"You have to navigate the system on your own most times"

Training and Support

About 3% of the learners have technological challenges since they were never trained and lack support, especially from the faculty. Some learners believe that the faculty have never used the Moodle system. One of the respondents said;

"Since i joined eLearning system, I have seen challenges in terms of accessing. It is not easy to use it because none of our teachers have tried to use it"

Some of the learners believe that the training on the eLearning system is inadequate. When asked the technological challenge faced, one of the learners said;

"Inadequate training on the Moodle eLearning system"

Supporting learners was also a challenge since they indicated that they had to navigate the system independently and locate the needed files. Some learners felt that their lectures did not provide enough support. Some of the respondents said;

"There was no prior training on system usage"

"Lack of easy access with lecturer due to main applied Google meet"

"The internet is not adequate to download the information so you are forced to use bundles. We lack attention from our lecturers and yet we are available for 1 week"

"No prior training of learners on how to use the noodle. Files cannot be downloaded from the module and finding help is hectic."

Moderation Analysis on Technology Factors

To examine the extent to which Technological factors influence the eLearning adoption at Kenya Medical Training College Nairobi, Moderation analysis was done to show how moderator variables (age, gender, department, and year of study) influence the effects of Technological factors on the adoption of eLearning. The regression findings showed that $R^2 = 0.065$ at a 0.05 significant level, implying that the independent variables technological factors, age, and year of study) can elucidate that the independent variables can explain the

6.5% variations in eLearning adoption. The residual 93.5% can be elucidated by other variables not considered in this study.

Analysis of Variance (ANOVA) indicates that F (5, 246) = 3.432, p=0.05 since p<0.05, then it implies that the relationship between the independent (predictor) variables and the dependent variable is statistically significant. The coefficient table shows that B=-0.077 with p=0.209>0.05 for technology factors. This indicates that there is a positive statistically insignificant relationship between technology factors and the adoption of eLearning. The moderation effect shows that the department of learners and the year of study have an effect on the relationship between technology factors and the adoption of eLearning. This is shown by the p-value of the interaction term of the department of the learner and the year of study with p= .043 <0.05 and p=0.007<0.05, respectively.

Key Informants Responses on Technological Factors Influence on eLearning Adoption

Descriptive statistical analysis was conducted on the responses from the key informants, and the results are presented in Table 5. The overall mean rating on learners' ICT skills and proficiency utilizing the eLearning system is 3.5625±0.64. According to the key informants ' point of view, the results signify that the learners at KMTC Nairobi have moderate proficiency in ICT skills to utilize the eLearning system.

Table 5:Results of Key Informants on Learners' ICT Skills and Proficiency

Technological factors	**Mean Response**
Learners comfortably use the Moodle eLearning application software	3.0
Learners can easily log in to the Moodle eLearning system	3.0
Learners can download files from the Moodle eLearning system	2.5
Learners find it easy to navigate through the Moodle eLearning system	2.5
Learners are trained on Moodle eLearning tools before commencing the use of eLearning.	4.0
Learners can access the Moodle help desk easily when they encounter challenges.	4.0
Learners own a laptop /Computer/Mobile Phone to facilitate eLearning.	5.0
Internet connectivity is adequate within KMTC- Nairobi.	4.5

4.2.3 Learner Factors Influence eLearning Adoption at Kenya Medical Training College Nairobi

Respondents were asked to rate learner factors statements on a 5-Likert scale, with one representing strongly disagree (**Lowest Extent**) and five representing strongly agree (**Greatest Extent).** The overall average rating of the learner factors was 3.5038±0.94, indicating that learner factors have a **moderate extent** in influencing the adoption of eLearning at Kenya Medical Training College Nairobi.

Table 6: Learners' Factors

Learners factor items	strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	mean ± SD
Accessibility to Moodle eLearning system has improved my knowledge, skills, and attitude	20(7.9%)	28(11.1%)	71(28.2%)	88(34.9%)	45(17.9%)	3.44±1.14
I intend to use eLearning now and, in the future, to progress my studies	16(6.3%)	26(10.3%)	45(17.9%)	84(33.3%)	81(32.1%)	3.75±1.19
I can explore social network websites in addition to the Moodle eLearning system for learning purposes.	17(6.7%)	31(12.3%)	50(19.8%)	106(42.1%)	48(19.0%)	3.54±1.13
I would recommend the Moodle eLearning system to someone else.	21(8.3%)	34(13.5%)	49(19.4%)	90(35.7%)	58(23.0%)	3.52±1.22
I can explore the Moodle eLearning platform	16(6.3%)	27(10.7%)	68(27.0%)	101(40.1%)	40(15.9%)	3.48±1.08

The Moodle platform promotes an easy understanding of the coursework	15(6.0%)	42(16.7%)	60(23.8%)	82(32.5%)	53(21.0%)	3.46±1.17
Learning using the Moodle digital platform promotes fast access to course information	18(7.1%)	30(11.9%)	63(25.0%)	80(31.7%)	61(24.2%)	3.54±1.19
I find interacting with eLearning content in the Moodle platform is fun	21(8.3%)	42(16.7%)	70(27.8%)	84(33.3%)	35(13.9%)	3.28±1.15

Source; Field Data 2023.

As shown in Table 6, respondents were required to rate learners' factors statements. All the statements related to learners' factors received a mean rating of over 3.0 which represents neutral. Out of the eight statements, four statements had a mean rating of over 3.5. these statements included; the intention to use eLearning now and in the future to progress studies (Mean = 3.75±1.19), the ability to explore social network websites in addition to the Moodle eLearning system for learning purposes (3.54±1.13), the fact that learners find Learning using the Moodle digital platform promoting fast access to course information (Mean = 3.54±1.19), and the fact that they could recommend the Moodle eLearning system to someone else.+3.5±1..08.Interacting with eLearning content in the

module platform was fun had a score of mean 3.2±1.15 which was the lowest mean score among the learner factors.

Thematic Analysis of Learner Factors

Internet Connectivity

Learners reported that it was challenging for them to access all of the materials in the Moodle system, particularly large files like videos, due to the unstable and unreliable internet. Weak internet connectivity was attributed to the institution's slow Wi-Fi and a lack of funds for mobile internet bundle purchases. The learners also mentioned that some rural areas lack internet access, which makes it challenging for them to access the Moodle away from school. Learners also mentioned that Moodle's navigation is weakened because some contents are hidden. Here are some of the verbatim responses;

"While away some areas don't have internet so communication is a problem"

"Can't access without adequate internet"

"Difficult to log in at times and inadequate internet connection"

"Downloading of files require internet as eLearning is concerned"

Content in the Moodle Learning System

The learners also had a problem with the content; they indicated delays in updating it in the Moodle System. The learners also had difficulty navigating the system to get their desired content. Some of the verbatim responses are;

"Difficult to navigate. Some content is hidden not easy to access"

"Some of the lecturers are yet to update their content"

"The platform lacks content or it is too shallow"

One of the key informants indicated no issues with the Moodle content. However, the other key informant hinted that there is an issue with system overloading; hence, there was a need to regulate the usage of the system so that there is a plan for how departments and learners can utilize the platform differently.

Moderation Analysis on Learner Factors

To determine the extent to which Learner factors influence eLearning adoption at Kenya Medical Training College Nairobi, Moderation analysis was done to show how mediating variables (gender, age, department, and year of study) influence the effects of Learner factors on the adoption of eLearning. The regression findings showed that $R^2 = 0.0065$ at a 0.05 significant level, implying that the independent variables (learner factors, gender, age, and year of study) can elaborate the 6.5% variations in eLearning adoption. The residual 93.5% can be elucidated by other variables not considered in this study.

Analysis of Variance (ANOVA) indicates that $F(5, 246) = 3.440$, $p=0.05$ since $p<0.05$then it implies that the relationship between the independent (predictor) variables and the dependent variable is statistically significant.

The coefficient table shows that $B=-0.074$ with $p=0.204>0.05$ for learner factors. This indicates a negative statistically insignificant relationship between learner factors and the adoption of eLearning. The moderation effect shows that the year of study has an effect on the relationship between learner factors and the adoption of eLearning.

This is shown by the p-value of the interaction term the year of study with $p=0.007<0.05$.

4.2.4 Institutional Factors Influence eLearning Adoption at the Kenya Medical Training College, Nairobi.

Respondents were asked to rate institution factors statements on a 5-Likert scale, with 1 representing the **greatest extent** and 5 representing the **lowest extent**. The overall average rating of the institution factors was 3.2123±0.88, indicating that institutional factors generally had a **moderate extent in influencing eLearning adoption at the KMTC Nairobi.**

Table 7: Institution Factors

Institution factors items	**Greatest extent**	**Great extent**	**Moderate extent**	**Low extent**	**Lowest extent**	**mean ± SD**
The institution provides internet connectivity to facilitate eLearning activities.	34(13.5%)	43(17.1%)	62(24.6%)	62(24.6%)	51(20.2%)	3.21±1.31
There are technological tools, such as interactive whiteboards, used in the courses to keep learners engaged.	47(18.7%)	64(25.4%)	56(22.2%)	47(18.7%)	38(15.1%)	2.86±1.33
The institution provides laptops/Computers to learners for eLearning	43(17.1%)	30(11.9%)	37(14.7%)	39(15.5%)	103(40.9%)	3.51±1.53
The institution provides laptops/Computers to learners for eLearning	38(15.1%)	32(12.7%)	31(12.3%)	31(12.3%)	120(47.6%)	3.65±1.53

The institution provides internet bundles to the learners	39(15.5%)	59(23.4%)	83(32.9%)	28(11.1%)	43(17.1%)	2.91±1.28
There are competent staff who manage the eLearning platform	32(12.7%)	47(18.7%)	85(33.7%)	54(21.4%)	34(13.5%)	3.04±1.21
I am happy with the support offered by the institution to enable eLearning.	35(13.9%)	56(22.2%)	76(30.2%)	52(20.6%)	33(13.1%)	2.97±1.23
The educational content in Moodle is well developed.	34(13.5%)	61(24.2%)	69(27.4%)	45(17.9%)	43(17.1%)	3.01±1.28
The teaching staff offers support to access contents, materials, and resources for the eLearning courses	33(13.1%)	42(16.7%)	37(14.7%)	33(13.1%)	107(42.5%)	3.55±1.49

Source: Author's Field Data 2023

As shown in Table 7, respondents were required to rate statements on institutional factors. The average rating for five of the nine statements related to institution factors ranged from 2.86±1.33 to 3.21±1.31. This suggests that learners rated these institutional factors to a moderate extent. However, three of the statements received a low rating. The average rating for providing laptops or computers to learners for eLearning was 3.51±1.53; for offering internet bundles to learners, it was 3.65±1.53; and for the financial structure, it was

3.55±1.49. This suggests that the institution's provision of laptops/computers, internet plans, and financial infrastructure is moderate, according to the learners.

4.2.4.1 Thematic Analysis of Institutional Factors

Internet Connectivity

The learners indicated that there is a need for the provision of internet for all. They suggested that for reliable internet connectivity within the institution, more "internet spots" are needed. According to the researchers' observation, internet connectivity is absent in all the departments. Some of the responses from the learners were;

"Increase internet spots in the school and make the available Wi-Fi to be strong"

"Provision of laptops/Computers. Provision of internet connectivity to all departments"

The learners also felt a need to have a different, reliable server for administering exams. This was because of internet overloading and server failures that occur during exams, which are crucial to their performance. One of the respondents suggested that;

"Improve internet in the school environment, and find a better server for administering exams"

They also recommended that the institution create a modern computer lab where learners could easily access the online system. Additionally, some learners proposed providing data bundles specifically for eLearning when they are within and outside the school environment. The recommendations from some of the learners were;

"To come up with a computer lab and improve internet within the college"

"Increase internet coverage, provide laptops, and internet bundles for continued study at home during breaks and holidays".

Provision of Computers/Laptops

Even though the researcher was unaware of the availability of computers for eLearning, the learners suggested a need to equip the institution with more computers to ensure more learners' access. On the other hand, other learners suggested a need to create a modern computer labs within the institution. Some of the suggestions were

"Add more computers for more students to get access, network to be of high quality to avoid jamming and overcrowding"

"Come up with modern computer lab"

Training and Support

Apart from providing reliable internet connectivity and laptops, the learners suggested the need for orienting or training them with the Moodle system before use. Additionally, they recommended that the institution employ an IT support staff to ensure that there is no internet failure and also to support managing the Moodle system. The verbatim responses from the students were;

"Provide adequate internet connectivity for the learners and employ competent staff to manage the eLearning system"

"Provide internet, laptops and train on system usage"

"Provide bundles employ it support staff to support in ensuring that there is good internet."

The KIIs interviewed agreed with the learners that data bundles and computers or laptops are needed. However, they never suggested any training to either the faculty or the learners.

"To provide data bundles and computers/laptops to learners"

"Offer bundles when the internet becomes unstable"

This finding implies that according to the faculty, all the learners and faculty are conversant with using the Moodle system. In reality, some of the faculty and learners struggled to navigate and use Moodle.

Moderation Analysis on Institutional Factors

To assess the extent to which Institutional factors influence eLearning adoption at the Kenya Medical Training College, Nairobi, Moderation analysis was done to show how mediating variables (age, gender, department, and year of study) influence the effects of Institutional factors on the adoption of eLearning. The regression findings showed that R^2 = 0.301 at a 0.05 significant level, implying that the independent variables can elaborate on the 30.1% variations in eLearning adoption. The residual 69.9% can be elucidated by other factors not considered in this study.

Analysis of Variance (ANOVA) indicates that F (5, 246) = 22.296, p=0.000. Since $p<0.05$, it implies that the relationship between the independent and dependent variables is statistically significant.

The coefficient table shows that B=0.529 with $p=0.000<0.05$ for institutional factors. This indicates a positive statistically significant relationship between institutional factors and the adoption of eLearning. Since the $p>0.05$ for all the moderator variables implies that

moderator variables do not affect the relationship between institution factors and the adoption of eLearning.

4.2.5 eLearning Adoption

Respondents were asked to rate eLearning adoption factors statements on a 5-Likert scale, with 1 representing the **greatest extent** and 5 representing **the lowest extent**. The overall average rating of the eLearning factors was 2.8435±0.88, which indicates a **moderate extent rating.**

Table 8 depicts the rating of the eLearning adoption statements by the respondents. All the statements on eLearning adoption were rated by the learners to a **moderate extent**. The rating ranged from an average of 2.68±1.3 for determination to achieve education goals through Moodle to 3.03±1.2 for being able to afford internet bundles to access Moodle Learning.

Table 8: eLearning Adoption

eLearning adoption items	Greatest extent	Great extent	Moderate extent	Low extent	Lowest extent	mean ± SD
Moodle Learning has greatly improved my performance	32(12.7%)	55(21.8 %)	106(42.1%)	31(12.3 %)	28(11.1 %)	2.87±1. 13
I complete assignments on Moodle on time.	35(13.9%)	61(24.2 %)	95(37.7%)	29(11.5 %)	32(12.7 %)	2.85±1. 18
Accessibility of course content is easy through Moodle.	40(15.9%)	72(28.6 %)	76(30.2%)	42(16.7 %)	22(8.7%)	2.74±1. 17
I have been supported with course content, materials, and learning resources	42(16.7%)	65(25.8 %)	72(28.6%)	38(15.1 %)	35(13.9 %)	2.84±1. 27
I can afford internet bundles to access Moodle Learning.	33(13.1%)	44(17.5 %)	90(35.7%)	52(20.6 %)	33(13.1 %)	3.03±1. 2

I easily understand all the course contents and learning materials provided.	24(9.5%)	39(15.5 %)	95(37.7%)	72(28.6 %)	22(8.7%)	07	2.85±1.	
I have gained the expected competencies through Moodle courses.	21(8.3%)	38(15.1 %)	92(36.5%)	76(30.2 %)	25(9.9%)	08	2.88±1.	
I am determined to achieve my education goals through Moodle	57(22.6%)	60(23.8 %)	74(29.4%)	28(11.1 %)	33(13.1 %)		2.68±1. 3	

Source; Author's Field Data 2023

4.2.5.1 Thematic analysis on eLearning Adoption

Internet Connectivity

Since eLearning through the Moodle system uses the Internet, reliable internet connectivity is important. Poor internet connectivity hinders the adoption of eLearning at the KMTC Nairobi Campus. Poor internet connectivity negatively affects the interaction between the learners and the lecturers through the Moodle System.

"Poor internet connection leading to poor interaction between learners and tutors"

The number of internet users within the institution is too many, and they need to regulate the population of people who can effectively use the internet for academic purposes, especially eLearning through the Moodle system. The learners are discouraged by internet failures, especially during exam periods.

"Poor internet connectivity, loading, infective for assessments and assignments, buffering isn't repaired quickly"

Content in the Moodle

The main challenge the students' learners face while accessing the Moodle system is access to all the course content as per the course outline. According to the students, the Moodle System does not cover everything that the students need to cover.

"Problem accessing all course content"

"Lack of enough content in some course units"

It also takes some time before all the learners are enrolled in the system. The lectures are the ones that enroll learners, and they take too much time, implying that learners cannot access the course content on time. Not all the content is uploaded to the platform.

"Not being enrolled, cannot access course content"

"The lecturers take a lot of time before enrolling students' hence limited access to the course content on time"

Learners must be enrolled on time on the Moodle system, and all the course outlines must be uploaded on time so that learners can access them.

Training on the Moodle System

According to the learners, there is inadequate Moodle system training. It could be prudent to have training sessions on how to use the system and give the learners a guide to follow while using the system. The learners also indicated inadequate personnel at the ICT office to support the use of the system. Additionally, there was less support from the lecturers to

encourage the usage of the system, and they believed that they should be given adequate support while using the system. The learners also admitted that they have inadequate knowledge of using the system. Some of the verbatim responses given by students on the challenges faced in the adoption of the eLearning platform were;

"Inadequate technical personnel at the ICT office"

"Lack of adequate training on the use of the system"

"Lack of support by teachers.it is good to support learners on how to use the Moodle system"

When asked about obstacles preventing the adoption of eLearning, the tutors mentioned a lack of staff and their expectation that the institution would hire additional employees, particularly those with ICT expertise, to support eLearning. Additionally, they suggested that lecturers have a negative attitude towards online learning. This resonates with the learners' findings.

4.2.6 Regression Analysis

Multiple regression analysis was done where technology factors, learner factors, and institution factors are predictors of the adoption of eLearning. The model summary showed that $R^2 = 0.438$ and Sig. F Change = 0.000. R square indicates that 43.8% variance in the dependent variable (Adoption of eLearning) can be elucidated by the predictor variables (technology, learner, and institution factors). The remaining 56.2% can be elaborated by factors not considered in this study.

Further analysis of ANOVA showed that F (3, 248) = 39.268, p=0.000. Since p< 0.05, it implies that the relationship between the predictor (independent) variables and the dependent variable is statistically significant. Table 9 presents the beta coefficients of all independent variables versus the dependent variable.

Table 8:Regression Table

Model Coefficients – eLearning Adoption				
Predictor	**Estimate**	**Standard Error**	**t**	**p**
Intercept	1.0503	0.2867	3.663	< .001
Technology Factors	-0.1670	0.0742	5.861	0.057
Learner Factors	0.0213	0.0711	0.300	0.765
Institution Factors	0.7064	0.0605	11.680	< .001*

Regression Equation

$$EA = 1.05 - 0.167TF + 0.021LF + 0.706IF + \varepsilon$$

Where EA is eLearning Approach

TF is Technology Factors

LF is Learners Factors

IF is Institution Factors

The regression model above shows that technological institutional and learner-related factors have a positive relationship with the adoption of eLearning. The findings also show that institution issues are the only statistically significant variable with p < 0.05.

Table 9: Mediating Variable Regression Table

Model Coefficients – eLearning Adoption				
Predictor	**Estimate**	**SE**	**t**	**p**
Intercept [a]	0.9565	0.3080	3.106	0.002
Technology	-0.1678	0.0757	5.827	0.052
Learner	0.0339	0.0720	0.471	0.638
Institution	0.6956	0.0612	11.370	< .001*
Mediating variables				
Gender	0.1550	0.1032	1.502	0.135
Age	0.1881	0.1601	1.175	0.242
Year of study	-0.0261	0.1106	-0.236	0.814

Table 10 presents a regression analysis of the mediating variables. The mediating variables (age, gender, and year of study) are not statistically significant ($p>0.05$) in moderating the influence of the independent variables (technology, learner, and institutional factors) on the adoption of eLearning by learners at Kenya Medical Training College Nairobi. The mediating variables have a positive relationship with the independent variables.

CHAPTER 5: DISCUSSIONS

5.1 Introduction

This chapter focuses on summarizing the study's main findings, which are in line with the study objectives, which were to determine the extent to which technological factors, learner factors, and institutional factors influenced the adoption of e-learning at the Kenya Medical Training College in Nairobi.

5.2 Discussion of Results

5.2.1 Technology Factors

The adoption of eLearning is hindered by technological issues such as lack of software familiarity, difficulty logging into Moodle, and lack of access to computers for eLearning. The learners' lack of system orientation is implied by their low familiarity with the software. The eLearning Moodle system is introduced to the learners when they enroll at Kenya Medical Training College, so a thorough orientation is required. Technology Acceptance Model 2 asserts that training is fundamental to facilitate successful eLearning system usage and adoption by learners (Venkatesh & Davis, 2000). Thus, the lack of orientation to the Moodle system to the learners at KMTC, Nairobi, is a significant factor contributing to the low adoption of eLearning because training is a key aspect, as posited by TAM2. Houcine and Slim (2021) research on the adoption of eLearning Technology by learners during the COVID-19 Quarantine Period demonstrated that the willingness to adopt eLearning systems is significantly influenced by the availability of technical

assistance, which was alluded to by the faculty interviewed in Kenya Medical Training College Nairobi campus.

One of the technological factors influencing the adoption of eLearning is logging into the Moodle eLearning system. The slow internet connectivity and the large number of learners trying to access the Moodle system concurrently led to problems logging into the system. This finding concurs with the study by Eltahir (2019), which found that poor internet services, network coverage, and infrastructure affect the adoption of eLearning platforms. Poor internet connectivity at Jomo Kenyatta University of Agricultural Technology also impacted eLearning adoption, according to Kingori (2018). This suggests that the issue with internet connectivity affects other Kenyan institutions and other developing nations, in addition to the Kenya Medical Training College Nairobi campus. A report by the World Bank (2020) indicated that due to connectivity constraints, in developing nations, approximately 35% of the population can access the internet, which is significantly low compared to the 80% of the population in developed nations that have access to the internet. Higher education institutions in developing nations must invest in internet connectivity to achieve full eLearning adoption.

The other technological factor hindering eLearning adoption is the lack of computers. The faculty, however, indicated that the learners can access eLearning through their mobile phones. The finding of this study aligns with the findings of Njoroge (2018), which found that inefficient ICT infrastructure, including the Internet, affects the utilization of eLearning platforms. According to Paul and Thuthukile (2020), lacking ICT resources denies school learners learning opportunities. Computers improve young minds' education

in a variety of ways. This includes helping them with their schoolwork and other assignments; as a result, its availability is a requirement, not a luxury. Both learners and faculty mentioned the need to provide computers to learners; in fact, learners suggested that the institution create a modern computer lab.

The Technology Acceptance Model is anchored on the premise that the usefulness and ease of using an online learning system are critical aspects of using the eLearning system (Davis, 1989). This study recognizes the integral role of the eLearning system in enhancing the learning process. However, the utilization of eLearning at KMTC, Nairobi, has been low due to challenges associated with the ease of usage of the system. The findings of this study indicate that students at KMTC, Nairobi, face difficulties logging into Moodle and limited ICT resources. This affects ease of usage, a critical pillar for eLearning adoption as posited by the Technology Acceptance Model.

Technological factors negatively impact the adoption of eLearning. According to the results of the bivariate regression, when eLearning adoption increases by 1, technological factors decrease by 0.077. Further analysis reveals that the learner's department and academic year are the moderating factors that influence the relationship between technological factors and eLearning adoption. Technological factors less impact learners in their third year than students in their second year.

5..2.2 Learners' Factors

Learners like the Moodle platform and desire to use eLearning now and in the future. The theory of reasoned action argues that an individual's behavior predominates a function of

one's intention and attitude toward the respective behavior (Alzen, 1991). Thus, learners are expected to reason out the adoption of eLearning and demonstrate their reception based on their behavior. The system works well for learners who frequently utilize social networking sites in addition to Moodle for educational purposes. The findings of this study revealed that the Moodle system was beneficial to learners because of its simple accessibility to course materials.

The study by Bervell and Umar (2017) discovered that attitudes towards performance expectations influenced eLearning adoption. Thus, if the learner is not satisfied with the eLearning system, the learner will develop a negative attitude towards the eLearning platform. The finding in this study concurs with the finding by Bervell and Umar (2017) that the learners at KMTC, Nairobi, were unhappy with Moodle's content, and they believe the content is inadequate and want the faculty to update the system regularly. Even though learners like the system, a bad internet connection makes it difficult for them to access it. The faculty also hinted that learners are overloading the platform. According to Peng and Hwang (2021), the technology acceptance model recognizes that the perceived ease of using technology enhances the learner's motivation to use the eLearning platform more often. Thus, the technological difficulties highlighted by the students at KMTC, Nairobi, in the study, affected their attitude towards eLearning adoption.

Bivariate regression analysis found a weak negative relationship between learner factors and eLearning adoption. When the learners' factor goes up by 1, eLearning adoption falls by 0.074. Additionally, the year of study affects how learners' characteristics and the uptake of eLearning are related.

5.2.3 Institution Factors

The findings in this study revealed that to adopt eLearning effectively, learners want KMTC, Nairobi, to give them computers. This study's finding aligns with the study by Maphosa (2021) that learning institutions need to expand their online content and resources that would help implement the eLearning platforms. Thus, well-equipped computer labs with adequate computers and laptops would be significant in adopting eLearning at KMTC, Nairobi. The findings of this study indicated that the learners would like the institution to provide them with data bundles to supplement the erratic internet connectivity already present there. According to a study by Zalat et al. (2021), the barriers to eLearning were limited internet connection, computer labs, computers, and technical challenges. The findings by Zalatet al. (2021) concur with the view of learners at KMTC, Nairobi, that the institution needs to offer data bundles to address the limited internet challenge affecting eLearning adoption. The faculty suggested that the school provide the learners with laptops, which was in line with the learners' suggestions.

Bivariate regression analysis found a strong positive relationship between institution factors and eLearning adoption. Adoption of eLearning increases by 0.529 when the learners' factor increases by 1. Additionally, all the mediating variables tested did not affect the relationship between institutional factors and the adoption of eLearning. It is crucial to remember that the mediating variables tested, which included department, age, gender, and year of study, have no bearing on the relationship between institutional factors and eLearning adoption.

5.2.4 Adoption of eLearning

The faculty emphasized the need for more staff, particularly those with ICT expertise, to support the full implementation of eLearning. The institution's understaffing and the difficulty of updating and implementing Moodle were raised by faculty. The faculty also stated that most have a bad opinion of online learning. However, according to the learners, eLearning adoption requires a reliable internet connection and technical assistance from the faculty.

According to the multiple regression analysis, institutional factors are the only statistically significant variable. Kenya Medical Training College Nairobi campus should, therefore, focus more on institutional factors to ensure the adoption of eLearning within the institution.

CHAPTER 6: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

The study's conclusions and recommendations are summarized in this chapter. It summarizes how technology, learner, and institutional factors affect the adoption of eLearning at Kenya Medical Training College Nairobi campus. It also gives the conclusion of the study and recommendations and suggestions for further research

6.2 Conclusion

The purpose of this study was to find out the determinants of learners' adoption of electronic learning. The following objectives guided the study: To examine the extent to which technological factors influence the eLearning adoption at Kenya Medical Training College Nairobi, to determine the extent to which learner factors influence eLearning adoption at Kenya Medical Training College Nairobi, to assess the extent to which institutional factors influence eLearning adoption at the Kenya Medical Training College, Nairobi.

6.2.1 Technology Factors

The institution's technological aspects were assessed. Despite Moodle being accessible within the organization, the results indicated that several learners are not knowledgeable about how to use it effectively. As a result, the institution needs to take additional steps to orient learners to the system better. Additionally, there are not enough computers or reliable internet for the learners to use the Moodle system.

6.2.2 Learners' Factors

The online content has not piqued the interest of learners. They attribute the delays in updating the system's content to the faculty. Due to overload, learners find it challenging to use the Moodle system due to inadequate internet connectivity and the high number of learners who are using it concurrently. These learner-related factors negatively impacted the Kenya Medical Training College Nairobi campus's adoption of eLearning.

6.2.3 Institutional Factors

There is a need for the institution to build a modern computer lab so that learners can access online materials. In the opinion of the learners and faculty, the institution needs to do more to help learners access online information by giving them access to computers and data bundles. Additionally, more ICT-savvy employees are required to support the adoption of eLearning.

6.3 Recommendations

According to the study, the KMTC Nairobi campus has a low eLearning adoption rate. Technological factors and institutional factors are significant factors that contribute to the low adoption of eLearning by learners at the Kenya Medical Training College Nairobi. The study suggests the following recommendations -.

6.3.1 Technological Factors

The institution must improve its infrastructure for internet connectivity and have more internal internet routers to serve its learners.

6.3.2 Learner Factors

According to the study, Kenya Medical Training College Nairobi should either make a computer or laptop a prerequisite for enrollment or increase training fees to raise money for computer purchases by learners. This will guarantee that all of the institution's learners have access to computers and that eLearning is fully implemented there.

6.3.3 Institutional Factors

The study also recommends that the institution employ more staff. To support the implementation of eLearning, the institution can hire more ICT professionals or more faculty who have those skills.

Regular training of the teaching staff is necessary to ensure the adoption of eLearning. Additionally, since most learners have just completed their secondary education and have never engaged in eLearning, more time is needed to orient them when they enroll at Kenya Medical Training College Nairobi.

6.4 Suggestions for Further Research

The study was conducted at the Kenya Medical Training College Nairobi campus, 3 kilometers north of Kenya's capital. To determine the factors that influence learners' adoption of electronic learning, the study recommends that further study be conducted to examine the determinants of electronic learning adoption by learners on other campuses

outside Nairobi. Further study on learners' perception of internet connectivity within Kenya Medical Training College is recommended.

REFERENCES

Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*. Englewood cliffs.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes,* 50(2), 179-211.

Andreas, S. (2020). The Impact of COVID-19 on education–insights from education at a glance 2020. *OECD, Accessed December 3*, 2023.

Bervell, B., & Umar, I. N. (2017). A decade of LMS acceptance and adoption research in Sub-Sahara African higher education: A systematic review of models, methodologies, milestones and main challenges. *Eurasia Journal of Mathematics, Science and Technology Education*, *13*(11), 7269-7286.

Best, J.W. & Kahn, J.V. (2000). *Research in education*. (7thed). New Delhi: Prentice Hall of India Private Limited.

Borg, W., & Gall, M. (2003). *Educational research: An introduction* (7th Ed.). New York, Longhorn Publishers.

Chatti, H., & Hadoussa, S. (2021). Factors affecting the adoption of e-learning technology by students during the COVID-19 quarantine period: The application of the UTAUT model. *Engineering, Technology & Applied Science Research*, *11*(2), 6993-7000.

Chebii, M. Mutinda, A.K., & Njuguna, S. (2023). Assessment of Satisfaction with Online Learning Environment Among Nursing Students in Kenya Medical Training College (KMTC) Nairobi. Innovative Journal of Social Sciences,3(2), 22-31.

Clark D. (2020). Tech and me: An autoethnographic account of digital literacy as an identity performance. *Research in Learning Technology*, *28*. https://doi.org/10.25304/rlt.v28.2389

Coman, C., Țîru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability*, *12*(24), 10367.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-340.

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, *49*(1), 5-22.

Ejdys, J. (2021). Factors affecting the adoption of e-learning at university level. *WSEAS Transactions on Business and Economics*, *18*(3), 13-323.

Eltahir, M. E. (2019). E-learning in developing countries: Is it a panacea? A case study of Sudan. *IEEE Access, 7, 97784–97792.*

Gachanja, F., Mwangi, N., & Gicheru, W. (2021). E-learning in medical education during COVID-19 pandemic: Experiences of a research course at Kenya Medical Training College. *BMC Medical Education*, *21*(1), 612.

Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *International Journal of Academic Research in Management (IJARM)*, *5*.

IDB, (2021). Latin American and Caribbean Macroeconomic Report. Opportunities for stronger and sustainable post growth. Available at https://publications.iadb.org/publications/english/document/2021-LatinAmerican-and-Caribbean-Macroeconomic-Report-Opportunities-for-Stronger-and-Sustainable-Postpandemic-Growth.pdf.

Ja'ashan, M.M.N. H. (2020). The challenges and prospects of using eLearning among EFL students in Bisha University. *Arab World English Journal, 11 (1) 124-137.*

Kaloki, L. N., Ombasa, Z. O., Mutiso, U. M., Mutiso, R. N., Kwinga, N. M., Nyachae, J. R., Musovya, J., Kinyae, V. N., Nguutu, G. K., Kalunda, E. K., Mwangi, L. W., Jonah, L. M., & Mutisya, R. M. (2023). Level of utilization of eLearning among students at selected KMTC campuses. *International Journal of Community Medicine and Public Health*, *11*(1), 20–27. https://doi.org/10.18203/2394-6040.ijcmph20234103

Kerlinger, F. N.& Lee, H. B. (2000). *Foundations of behavioral research* (4th Ed.). New York, NY: Thompson Learning.

Kingori, R. M. (2018). *Factors affecting adoption of e-learning technology in Kenya* (Doctoral dissertation, United States International University-Africa).

Kothari, C. R. (2011). *Research methodology: Methods and techniques*. (2nded). New Age International Publishers: New Delhi.

Mann, C., & Stewart, F. (2003). Internet interviewing. *Inside interviewing: New lenses, new concerns*, 241-265.

Maphosa, V. (2021). Factors influencing student's perceptions towards elearning adoption during COVID-19 Pandemic: A developing country context. *European Journal of Interactive Multimedia and Education, 2*(2), e02109. https://doi.org/10.30935/ejimed/11000

McCombes, S. (2020, June). *How to do a case study*. Retrieved November 30, 2023, from https://www.scribbr.com/methodology/case-study/

Mugenda, O. M. & Mugenda, A.G. (2003*). Research methods: Quantitative and qualitative approaches.* Nairobi: Kenya; Acts Press.

Nassar, A. A. M., Othman, K., Nizah, M. A. B. M. (2019). The impact of the social influence on ICT adoption: Behavioral intention as mediator and age as moderator. *International Journal of Academic Research in Business and Social Sciences, 9(11), 963–978.*

Njoroge, H. (2018). *Influence of adoption factors on implementation of eLearning in Kenyan universities* (PhD Thesis, Kenyatta University).

Ndura, E. W., & Sitati, G. W. (2024). Challenges to utilization of online learning: A study on first-year nursing students at selected KMTC campuses. *East African Journal of Education Studies*, *7*(1), 562-571. doi:10.37284/eajes.7.1.1846

Peng, M.-H. & Hwang, H. G., (2021). An empirical study to explore the adoption of eLearning social media platform in Taiwan: An integrated conceptual adoption framework based on Technology Acceptance Model and Technology Threat Avoidance Theory. *Journal of Sustainability.* 2021, 13, 9946. https://doi.org/10.3390/ su13179946

Roopa, S., & Rani, M. S. (2012). Questionnaire designing for a survey. *Journal of Indian Orthodontic Society*, *46*(4_suppl1), 273-277.

SAS. (2013). Base SAS 9.4 procedures guide: Statistical procedures. *Cary, NC, USA: SAS Institute Inc*.

UNESCO. (2020). *COVID-19 educational disruption and response.* https://en.unesco.org/covid19 /education response. Retrieved January 01st, 2022.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204.

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273-315.

Wong, A., Ho, S., Olusanya, O., Antonini, M. V., & Lyness, D. (2021). The use of social media and online communications in times of pandemic COVID-19. *Journal of the Intensive Care Society*, *22*(3), 255-260.

World Bank. (2020). *Connecting for inclusion: Broadband access for all*. https://www.worldbank.org/en/topic/digitaldevelopment/brief/c connecting-for inclusion-broadband-access-for-all

World Bank. (2020). *Digital technologies in education.* World Bank. http://worldbank.org/en/topic/edutech#1

Yakubu, M. N., & Dasuki, S. I. (2020). Adoption of e-learning technologies among higher education students in Nigeria. *Education and Information Technologies*, *2*(1), 12-18.

Zalat, M.M., Hamed, M.S., Bolbol, S.A., (2021). The experiences, challenges, and acceptance of eLearning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PLoS ONE 16(3), e0248758. https://doi.org/10.1371/journal.pone.0248758*

APPENDICES

Appendix 1. Consent form

DETERMINANTS OF ELECTRONIC LEARNING ADOPTION BY LEARNERS, A CASE OF THE KENYA MEDICAL TRAINING COLLEGE, NAIROBI, KENYA.

I am a postgraduate student at AMREF International University. My research is on determinants of eLearning adoption by learners at the Kenya Medical Training College Nairobi Kenya.

The researcher proposes to establish determinants of electronic learning adoption by learners at the Kenya Medical Training College, Nairobi, Kenya. The study variables are classified as technological factors, learner factors and institutional factors.

Individual responses will remain confidential and do not identify yourself in any form in the course of the study. Participation in the study is voluntary and participants may withdraw from the study at will, no inducement will be given to participants. All ethical considerations will be respected.

The study is important since it seeks to understand the determinants influencing adoption of eLearning. The study recommendations will aim at improving the performance of the learners and that of the institution.

There are no known risks or discomforts during the study.

Consent. I have read and understood the provided information, I understand that the participation is voluntary. I voluntarily agree to take part in the study.

Participants Signature----------Date----------

Investigators Signature----------Date----------

Appendix 2. Approval and Authorization

NACOSTI approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 980182

Date of Issue: 22/November/2022

RESEARCH LICENSE

This is to Certify that Ms. Mary Kiende Mugathia of Amref International University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: DETERMINANTS OF ELECTRONIC LEARNING ADOPTION BY LEARNERS: A CASE OF THE KENYA MEDICAL TRAINING COLLEGE, KENYA. for the period ending : 22/November/2023.

License No: NACOSTI/P/22/21656

980182

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i. Endanger national security

ii. Adversely affect the lives of Kenyans

iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive

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v. Adversely affect the environment

vi. Adversely affect the rights of communities vii. Endanger public safety and national cohesion viii. Plagiarize someone else's work

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14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.

15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and Innovation (NACOSTI),

Off Waiyaki Way, Upper Kabete,

P. O. Box 30623 - 00100 Nairobi, KENYA Telephone: 020 4007000, 0713788787, 0735404245

E-mail: dg@nacosti.go.ke

Website: www.nacosti.go.ke

Graduate school approval

OFFICE OF THE DEAN SCHOOL GRADUATE STUDIES

15th February 2022

MARY KIENDE MUNGATHIA SHS/MSHPE/497-2/2020.

PROPOSAL TITLE: DETERMINANTS OF ELECTRONIC LEARNING ADOPTION BY LEARNERS: A CASE OF THE KENYA MEDICAL TRAINING COLLEGE, KENYA.

Following your full proposal presentation on 19th November 2021 and subsequent review of your revised proposal, Graduate School has approved your work for submission for ethical review before the commencement of fieldwork.

You are advised to update the Graduate School of your progress every three months by submitting progress reports using the forms attached.

Dr Alice LakatiDean, Graduate School & Director, Research Innovation and Consultancy

CC: HOD Health Systems & Supervisors.

ESRC-approval

amref health africa

Amref Health Africa in Kenya

REF: A MREF — ESRC P1181/2022 **October 6, 2It22**

Mary Mungathia
Amref International University
P.O Box 27691 — 00506
Nairobi, Kenya
Tel: 0722171840.
Email: Marykiende3@gmail.com

Dear Mary Mungathie,

RESEARCH PROTOCOL DETERM I NANTS OP E LECTRON IC LEARN I NG ADOPTION BY LEARNERS A CASE OF THE KENYA MEDICAL TRAINING COLLEGE, KENYA.

Ttiank you for submitting your protocol to the Amref Ethics and Scientific Review Committee (ES R U)

This is to inform you that the ESRC has res iewed and approved your protocol Your application approval number is ESRC P1 1 8 I -2022. The approval period is from October 6, 2022, to October 5, 2023, and is subject to compliance with the following requirements

a) Only approx ed documents (including inti›rmed consents, study instruments. adverti sing materials, materi£ transfer agreements, etc.) will be used
b) All changes inc1udind (amendments, deviahons, violations, etc) are submitted for rex'iew and approval by Amref ESRC before implementation.
c) Death and iife-threatening problems and severe ad•'erse events (SAEs) or unexpected adverse evenls whether related or unrelated to the study must be reported to the Amref ESRC wi]hin 72 hours of not ification.
d) Any changes, anticipated or otherwise that may increase the risLs or affect safety or we1fare of study participants and others or affect the integrity of the research must be reported to A mref ESRC wnhin 72 hours.
e) Clearance for expon of' biological specimen must be obtained from the relevani go vemirent authorities for each batch of shipment/export.
f) Submission of'a request tiir renewal ot'approval at least 60 days prior to expiry of' the appro›al period. Attach a comprehensive progress report to support the renewal
g) In case of late renewal, the Arnref ESRC shall not be held responsible for any severe adx'erse events (SAEs) that may occur as a resu It of" research am iv ities that were carried out dfter the expiry of approx at.
h) Submission of an executive summary repon within 90 days upon compleuon of the study to the Amrel" USRC".
i) All go emment regulations for prevention and control of the spread of COVJ D- 19 including social distancing, provision of personal protective equipment for participants and research assistants should be adhered to during data collection All research aSSisJants should be monitored for *CO*¥'ID 1 9 symptoms and referred for testing in case they present with

Appendix 3: Research Tools

Learners' questionnaire.

Instructions

There are 12 (Twelve) Questions in this survey. There is section A to E. The first section (A) is on learner demographic characteristics, and section B, will focus on the variables that influence Technology as a determinant of eLearning adoption. Section C focuses on Learner factors, section D focuses on Institutional factors and section E focuses on eLearning adoption indicators, a case of Kenya Medical Training College. The interview will take approximately 15 minutes. The learners are kindly requested to tick

(√) by selecting the response option that answers the questions correctly in sections A, B, C, D and E. Write your response on the open space provided for the open-ended questions**.**

Please do not identify yourself by Name on this survey.

Section A: Demographic Characteristics.

1. Which Department do you prescribe?

Pharmacy [ ] Nursing [ ] Orthopedic and Trauma Medicine

Health Records and Information Technology [ ] Medical Education [ ]

Clinical Medicine [ ]

2. What is your gender?

Male [ ] Female [ ] Others [ ]

3. What is your age? (In years)

[

18-22 years [ ] 23-25 years [ ] 26-28 years]

Above 28 years [ ]

4. What is your year of study? 2nd year [ ] 3rd Year [ ]

Section B: To examine the extent to which Technology factors influence the eLearning adoption at Kenya Medical Training College Nairobi.

5. Please tick (√) the response option to rate the level that best describes your ICT proficiency when using the eLearning system at your institution.

Key: 1 strongly Disagree .2 Disagree 3. Neutral 4. Agree 5. Strongly Agree

Technology factors	**1**	**2**	**3**	**4**	**5**
I can comfortably use the Moodle eLearning application software					
I find it easy to log in to the Moodle eLearning system					
I can download files from the Moodle eLearning system					
I find it easy to navigate through the Moodle eLearning system					
I was trained on Moodle eLearning tools before commencing the use of eLearning.					
I can access the Moodle help desk easily when I encounter challenges.					.
I own a laptop /Computer/Mobile Phone to facilitate eLearning.					

Internet connectivity is adequate within KMTC- Nairobi.					

6. What is the main Technological challenge you face while using Moodle eLearning system in KMTC Nairobi?

……

……

……

……

Section C: To determine how learner-related factors influence eLearning adoption at Kenya Medical Training College Nairobi.

7. Usage of eLearning

Kindly tick (√) to rate the level of usage of eLearning.

Key: 1 Strongly Disagree 2. Disagree 3 Neutral 4 Agree 5. Strongly Agree

Learner Factors	**1**	**2**	**3**	**4**	**5**
Accessibility to Moodle eLearning system has improved my knowledge, skills, and attitude					
I intend to use eLearning now and, in the future, to progress my studies					
I can explore social network websites and the Moodle eLearning system for learning purposes.					
I recommend the Moodle eLearning system to someone else.					

I can explore the Moodle eLearning platform					
The Moodle platform promotes an easy understanding of the coursework					
Learning using the Moodle digital platform promotes fast access to course information					
I find interacting with eLearning content in the Moodle platform fun					

8. What would you consider the Moodle System's weakness?

……

……

……

…

Section D. To evaluate Institutional factors that affect eLearning adoption

9. Kindly tick (√) to rate the institutional factors influencing eLearning adoption in KMTC Nairobi.

Key: 1. Greatest extent. 2. Great extent. 3. Moderate extent. 4. Low extent. 5. Lowest extent.

Institution factors	**1**	**2**	**3**	**4**	**5**
The institution provides internet connectivity to facilitate eLearning activities					

Technological tools such as interactive white boards keep learners engaged in the courses.					
The institution provides laptops'/Computers to learners for eLearning					
The institution provides internet bundles to the learners.					
There are competent staff who manage the eLearning platform					
I am happy with the support offered by the institution to enable eLearning.					
Educational content in the Moodle is well developed.					
The teaching staff offer support to access contents, materials and resources for the eLearning courses.					
The staff offer support to the learners by repairing the broken laptops and desktops					

10. Which support would you like the institution to give priority in order to improve eLearning?

……

……

……

……

Section E. To evaluate the eLearning adoption

Kindly tick (√) to evaluate appropriately the level of eLearning adoption at KMTC Nairobi.

Key: 1 Greatest Extent. 2. Great Extent 3 Moderate Extent

4. Low Extent. 5 Most Minor Extent.

E-learning Adoption	**1**	**2**	**3**	**4**	**5**
Moodle Learning has dramatically improved my performance					
I complete assignments on Moodle on time.					
I can access course content easily through Moodle.					
I have been supported with course content, materials and learning resources					
I can afford internet bundles to access Moodle Learning.					
I quickly understand all the course contents and learning materials provided.					
I have gained the expected competencies through Moodle courses.					
I am determined to achieve my education goals through Moodle					

12. What is the greatest challenge affecting eLearning adoption at Kenya Medical Training College?

……

……

Thank you for taking part in the study.

Faculty Questionnaire.

Introduction

The interview aims to identify the determinants of eLearning adoption by learners at the Kenya Medical Training College Nairobi. The interview will focus on the following key thematic areas that determine the uptake of eLearning adoption: Technology factors, Learner Factors, Institutional Factors and eLearning adoption Indicators.

Research Questionnaire-Faculty

Instructions

There are 12 (Twelve) Questions in this survey. There is section A to E. The first section (A) is a section on Demographic characteristics, section B, will focus on the variables that influence Technology as a determinant of eLearning adoption. Section C focuses on Learner factors, section D focuses on Institutional factors and section E focuses on eLearning adoption indicators, at the Kenya Medical Training College Nairobi.

The interview will take approximately 15 minutes. The Head of Department or Faculty representative is kindly requested to select and tick (√) the appropriate response option that answers the questions to their satisfaction in sections A, B, C, D and E. Write your response on the open space provided for the open-ended questions. The interview will take approximately 15 minutes. Please do not identify yourself by Name on this survey.

Section A: Demographic Characteristics.

1. Which Department do you prescribe?

Pharmacy [ ] Nursing [ ] Orthopedic and Trauma Medicine

Health Records and Information Technology [ ] Medical Education [ ]

Clinical Medicine [ ]

2. What is your gender?

Male [ ] Female [ ] Others [ ]

3. What is your experience? (In years) ……

4. How long have you been teaching in KMTC Nairobi (In years) **……**

In your study exclusion criteria please indicate that your study excludes departments that do not use the eLearning platform.

Section B: To examine the extent to which Technology factors influence the eLearning adoption at Kenya Medical Training College Nairobi.

5. Please tick (√) the response option to rate the level that best describes the learner's ICT proficiency when using the eLearning system at your institution.

Key: 1 strongly Disagree .2 Disagree 3. Neutral 4. Agree 5. Strongly Agree

Technology factors	**1**	**2**	**3**	**4**	**5**
Learners comfortably use the Moodle eLearning application software					
Learners can easily log in to the Moodle eLearning system					
Learners can download files from the Moodle eLearning system					
Learners find it easy to navigate through the Moodle eLearning system					

Learners are trained on Moodle eLearning tools before commencing the use of eLearning.					
Learners can access the Moodle help desk easily when they encounter challenges.					.
Learners own a laptop /Computer/Mobile Phone to facilitate eLearning.					
Internet connectivity is adequate within KMTC- Nairobi.					

6. What is the central Technological challenge student's face while using Moodle eLearning system in KMTC Nairobi?

……

……

……

……

……

Section C: To determine how learner-related factors influence eLearning adoption at Kenya Medical Training College Nairobi.

7. Usage of eLearning System

Kindly tick (√) to rate the level of usage of eLearning.

Key: 1 Strongly Disagree 2. Disagree 3 Neutral 4 Agree 5. Strongly Agree

Learner Factors	**1**	**2**	**3**	**4**	**5**
Accessibility to Moodle eLearning system has improved the learner's knowledge, skills, and attitude					
Learners can use eLearning now and, in the future, to progress in studies					
Learners can explore social network websites in addition to the Moodle eLearning system for learning purpose.					
Learners have recommended friends and family to join the institution.					
Students can explore the Moodle eLearning platform					
The Moodle platform promotes easy understanding of the course work among the learners.					
Learning using the Moodle digital platform promotes fast access to course information among the learners					
Learners find interacting with eLearning content in the Moodle platform as fun					

8. What would you consider the Moodle System's weakness?

……

……

……

……

…….

Section D. To evaluate Institutional factors that affect eLearning adoption.

9. Kindly tick (√) to rate the institutional factors influencing eLearning adoption in KMTC Nairobi.

Key: 1. Greatest extent. 2. Great extent. 3. Moderate extent. 4. Low extent. 5. Lowest extent.

Institution factors	**1**	**2**	**3**	**4**	**5**
The institution provides internet connectivity to facilitate eLearning activities					
Technological tools such as interactive white boards are used in the courses to keep learners engaged.					
The institution provides laptops'/Computers to learners for eLearning					
The institution provides internet bundles to the learners.					
There are competent staff who manage the eLearning platform					
I am happy with the support offered by the institution to enable eLearning.					

Educational content in the Moodle is well developed.					
The teaching staff offer support to access contents, materials and resources for the eLearning courses.					
Staff offer support to the learners by repairing the broken laptops and desktops					

10. Which support would you like the institution to give priority to improve eLearning?

……

……

……

……

……

Section E. To evaluate the eLearning adoption

Kindly tick (√) to evaluate appropriately the level of eLearning adoption at KMTC Nairobi.

Key: 1 Greatest Extent. 2. Great Extent 3 Moderate Extent

4. Low Extent. 5 most minor Extent.

E-learning Adoption	**1**	**2**	**3**	**4**	**5**
Moodle Learning has greatly improved learners' performance.					
Learners complete assignments on the Moodle on time.					

Learners can access course content easily through the Moodle.					
Learners are supported with course content, materials and learning resources.					
Learners can afford internet bundles to access Moodle learning.					
Learners easily understand all the course contents and learning materials provided.					
Learners have gained expected competencies through Moodle courses.					
Learners achieve education goals through the Moodle					

12. What is the greatest challenge affecting eLearning adoption at Kenya Medical Training College?

……

……

Appendix 4: Introductory Letter

Mary Kiende Mungathia C/O AMREF International University.

TO WHOM IT MAY CONCERN

Dear respondent:

Re: A request to collect data for a research project on determinants of eLearning adoption a case of Kenya Medical Training Institute.

I am a graduate student at the AMREF International University pursuing a Master of Science degree in Health Professions. My admission Number is SHS/MSCHPE/4972/2020.The focus of my research is on determinants of eLearning adoption institutions of learning and the KMTC is my case study of choice. The study involves use of questionnaires administered in person or face to face by the researcher. I request your assistance to participate in the study by completing the questionnaire to the best of your knowledge and experience. Kindly note that you are free to decline my request should you choose not to participate. I will be available during the data collection activity i.e. the interview period, to provide prompt clarification of questions, if any. The research will generate insights into the determinants of eLearning adoption from a learner's point of view. The study adheres to high ethical standards. Your information will be treated with strict confidentiality and used solely for academic purposes. Your assistance and cooperation will be highly appreciated.

Yours faithfully,

Mary Kiende Mungathia.

Appendix 5: Similarity Report

THESIS DOCUMENT-MARY KIENDE FINAL DRAFT May 29 2024.docx

ORIGINALITY REPORT

15%	14%	4%	6%
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