

**FACTORS INFLUENCING READINESS TO ADOPT OPEN AND DISTANCE  
LEARNING IN KENYA MEDICAL TRAINING COLLEGE, LODWAR CAMPUS,  
TURKANA COUNTY, KENYA**

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULLFILMENT  
FOR THE REQUIREMENT OF THE AWARD OF DEGREE OF MASTER IN  
DISTANCE EDUCATION OF THE UNIVERSITY OF NAIROBI.**

**2017**

## DECLARATION

This research project report is my original work and has not been presented for and award in any university

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This research project report has been submitted with my approval as university supervisor

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## **DEDICATION**

I dedicate this research project to my late father Joseph Kisaka Simiyu and to my mother Florence Simiyu.

## **ACKNOWLEDGEMENT**

This research project follows contributions from individuals I would like to acknowledge. First I acknowledge The Almighty God for His faithfulness.

I am grateful to my supervisor, Dr. Anne Ndiritu. Her views and eagerness to patiently provide me with thorough comments in this study contributed to a richer presentation of ideas.

I also note with profound gratitude to Dr. John Rugendo, Dr. Naomi Gikonyo and Dr. Juliana Munialo for their intellectual contributions towards the success of this research project.

I also appreciate the faculty of the University Nairobi, Kikuyu Campus, for not only teaching but also for providing the relevant Learner Support Services towards the success of this research project. Thanks to the Library staff at Kikuyu Campus for their timely assistance in finding the relevant literature for this study.

I am truly indebted to Kenya Medical Training College and Principal Rachael Lomechu, Lodwar Campus, for their support while pursuing this study. I appreciate the staffs and students for their willingness to respond to the questionnaires during data collection.

I sincerely would like to appreciate my dear mum Florence Simiyu, and my aunty Ruth Kundu for their consistent encouragement in the light of the upshot of dad's demise while pursuing my studies.

I thank my siblings, Elizabeth Simiyu, Andrew Kisaka, Judy Nekoye, Eric Wanjala, and Niva Sara for their love and patience while pursuing my studies. God bless them all.

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## **LIST OF ABBREVIATION & ACRONYMNS**

<b>AVU</b>	African Virtual University
<b>ADB</b>	Africa Development Bank
<b>BOU</b>	Bangladesh Open University
<b>CCU</b>	Correspondence Course Unit
<b>ICT</b>	Information Communication Technology
<b>INAPS</b>	International Network for availability of Scientific Publications
<b>ITFS</b>	Instructional Television Fixed Services
<b>KESSP</b>	Kenya Education Sector Support Program
<b>KMTC</b>	Kenya Medical Training College
<b>ODL</b>	Open and Distance Learning
<b>SDE</b>	School of Distance Education
<b>SDGs</b>	Sustainable Development Goals
<b>SPSS</b>	Statistical Package for Social Sciences
<b>TVET</b>	Technical Vocational Education and Training
<b>WPI</b>	Worcester Polytechnic Institute
<b>WWW</b>	World Wide Web
<b>UCC</b>	University of Cape Coast
<b>U.S .A</b>	United States of America
<b>UNESCO</b>	United Nation Educational, Scientific, Cultural Organization
<b>USAID</b>	United State Agency for International Development
<b>UNISA</b>	University of South Africa

## ABSTRACT

The purpose of this study was to examine factors influencing readiness to adopt open and distance learning in arid and semi-arid areas, a case of KMTC Lodwar Campus. The study examined influence of learner's demographic characteristics, access to technology, availability of distance instructional materials and learner support services on readiness to adopt open and distance learning. A total number of 60 students and 12 lecturers were selected using stratified random sampling and simple random sampling techniques respectively from a population of 345 students; 210 students from nursing, 135 students from nutrition courses and 13 fulltime lecturers. Different self-administered questionnaires for students and lecturers were used to collect data from the sampled respondents. The study adopted a Descriptive Survey design. The study focused on learner's demographic characteristics, access to technology, availability of distance education instructional materials and learner support services. To capture the variables under examination, two sets of questions were developed to examine the responses of the respondents. The analysis of the data was done using Statistical Package for Social Sciences (SPSS). Percentages, means, standard deviation, chi square test, binomial regression and multinomial regression analysis were used for the data analyses. The chi square statistic ( $\chi^2$ ) was used to explain the significance level of influence at various degrees of freedom between the dependent and the independent variables. The study findings from data collected from student indicated that there was no significant level of influence of learners demographic characteristics on the readiness to adopt open and distance education: gender  $X^2$  (1, N=60) =2.584, p=0.11), age ( $X^2$  (2, N=60) =5.363, p=0.07), marital status ( $X^2$  (1, N=60) =0.475, p=0.49). The above  $\chi^2$  corresponded to p values above the conventionally predetermined alpha level of significance p=0.05. The binomial regression analysis of access to technology among students and readiness to adopt open and distance learning (p=0.03, CI=95%) showed that increase in the level of access to technology is associated with an increase in the level of readiness to adopt open and distance learning. Multinomial regression analysis indicated no significant level of influence of access to technology on readiness to adopt open and distance education among lecturers (p=0.917, CI=95%), alpha level of significance p >0.05. There was no significant level of influence of availability or lack of availability of distance education instructional materials on readiness to adopt open and distance learning: level of availability of printed distance education instructional materials ( $X^2$  (1, N=12) =2.182, p=0.14) level of availability of electronic distance education instructional materials ( $X^2$  (1, N=12) =0.218, p=0.64); alpha level of significance p >0.05. There was no significant level of influence of learner support services on readiness to adopt open and distance learning: level of tutorial support ( $\chi^2$ (4, N=60) = 1.459, P=0.83), level of counseling support ( $\chi^2$ (4, N=60) = 4.939, p=0.29), level of administrative support ( $\chi^2$ (4, N=60) = 1.329, p=0.87), p>0.05. Based on the findings, the study recommends creation of awareness on the nature of distance education among lecturers and students. Further the study recommends formulation and implementation of policies on open and distance education, staff development programs, administration and operation of distance education systems. The study also recommends trainings on how technology can be utilized in education among lecturers and students. The study further recommends training of lecturers on the nature of distance learning instructional materials and how they can be acquired. A survey to identify the specific needs of KMTC Lodwar campus learners may possibly guide the delivery of relevant learner support services to the learners. Finally, a survey to determine the emerging trends in motivation as a factor determining readiness to adopt open and distance learning among young adults aged 20-29 years is recommended.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the study**

A report by United Nations (2016) revealed its intentions of safeguarding comprehensive and justifiable educational prospects for all people at all the time. This aspiration focused on the acquisition of foundational and higher-order skills at all stages of education and development; greater and more equitable access to quality education at all levels, training in vocational and technical expertise and values needed to function well and contribute to society. Open and distance education, according to UNESCO (2002), is when a learner or group of learners are able to obtain educational training opportunities without being restricted to a fixed location and schedule. As a matter of fact, the structure of open and distance learning implies that learners can obtain education anywhere, anytime without having to attend a mandatory scheduled face to face class sessions (Olugbenga, Rotimi, and Olakulehinet, 2006).

As noted by Gakuu (2006), a mail institutionalized Distance Education was highly recognized in Russia, dating back in 1850, followed by other similar teaching institutions that started operating in the Soviet Union between 1920 and 1930. Gakuu points out that the first tentative step to enrol students in a university programme offered by distance mode was in 1858, where the University of London took in qualified students to pursue degree studies directly. Additionally, universities in the United States of America (USA) such as Illinois State University in 1874, University of Chicago in 1891 and University of Queensland in 1911 started providing tuition by mailing students outside their country (Gakuu, 2006).

In the African context, Nyerere, Gravenir and Mseet (2012) noted that Open and Distance Learning techniques were increasingly being employed by a growing number of Africans' higher education institutions. Case at hand was a South African University; UNISA, which started mailing tuition to its students from 1946 (Juma, 2003). Its achievements stimulated other African Universities in countries such as Nigeria, Tanzania and Zimbabwe to start offering distance education and learning besides their normal class oriented programme (Juma, 2003).

On the contrary, while distance education holds promises for Africa, obstacles like technological constraints, inadequate infrastructures and absence of clearly defined

distance education policies needed to provide a structural development in most African countries reinforces a potential problem towards creating a national distance education policy. Moreover, effective use of distance learning technologies demands teaching staffs that are properly trained in using distance education as a delivery mode. However Africa lacks trained cadre of professionals to support the implementation of distance education as evidenced in a study conducted in Zimbabwe that showed majority of the lecturers (97.5%) facilitating Open and Distance Learning had no experience in distance education (Mpofu, Samukange, Kusure, Zinyandu, Denhere, Huggins, Wiseman and Sithole 2012).

Other researchers like Sikwibele and Mungoo (2009) strongly considers minimal learner support services as the greatest challenge facing the open, distance and eLearning as evidenced by a study carried out in Botswana which revealed that the students' main support can be achieved through strong connection with their individual tutors (Macintyre and Macdonald, 2011) and through provision of internet connectivity, which still remains one of the major challenges in Africa, especially in rural areas.

As observed by Nyerere, Gravenir and Mset (2012), in 1966 the government of Kenya through an act of parliament sought to address open and distance learning strategy in its higher education that led to the establishment of the Board of Adult Education to address illiteracy among adults. Later in the year 1967, the University of Nairobi with the assistance of the USAID and Wisconsin University started Correspondence Course Unit (C.C.U) in Kikuyu Campus, as a service department within the University. In the recent past the Kenyan (Republic of Kenya, 2005) suggested the instituting of an open university and the use of Open, Distance and eLearning in human resource development. Additionally, the Ministry of Education in 2005 developed the Kenya Education Sector Support Program (KESSP) with the aim of prioritizing technology mediated teaching and learning. This led to the establishment of National ICT Policy in 2006 to ensure an infrastructural development of ICT service that would promote its utilization in training institutions in the country .

As desired by The Republic of Kenya(2005), education and training was expected to take leadership in development of skills and knowledge to all Kenyans geared towards the achievement of the aspirations of Vision 2030 by increasing access to education. Watiri(2013), cited Juma (2002) who noted that Kenyan Universities are turning to e-learning as a tool to facilitate improved education. For instance, the University of Nairobi offers

distance programs from certificate to postgraduate levels. Kenyatta University has open and e-learning geared towards improving the delivery of educational services to students. Africa Virtual University (AVU) used updated technology to intensify the reach of educational resources in Africa, Catholic University of East Africa on the other hand used Open and Distance e-learning while Strathmore University has since 2006, offered a diploma in Microfinance through distance education, to name but a few.

Kenya Medical Training College (KMTC) offers the largest medical and health training in East and Central Africa. Students access their training from campuses located nationally to as far as Loitokitok, Garissa, Lodwar, and Kwale (Kyalo and Hopkins, 2013). However, to date, KMTC still faces some noteworthy training related challenges that include inability to absorb a good number of qualified applicants into their courses due to inadequate infrastructure, an acute shortage of teaching staff almost across board in the 17 academic departments, inadequate training materials, inadequate funding from the government for capital development and slow embracement of relevant technology in their training of the learners among other challenges. In the bid to address the challenges, KMTC identified one of the opportunities as through utilization distance education (Kenya Medical Training College Strategic Plan Document, 2013-2017). Open and Distance Learning could potentially provide a flexible, convenient and cost efficient and effective mode of delivering learning as a solution to counter the learning challenges (UNESCO, 2000a)

## **1.2 Statement of the problem**

Although Open and distance learning is being considered as the biggest source of the much-needed prospects for furtherance of education (Agalo, 2008), Kenya has not taken its full advantage (Nyerere, 2016). A report by Ministry of State for development of Northern Kenya and other arid lands (2010) noted that little progress has been made to fully harness the benefits of distance learning. Odera and Mayeku, (2011) argue many Kenyans still remain sceptical not only about the concept of distance learning but also about the potential quality of the programmes. Additionally Mbugua (2013), in a study on determinants of educational managers' support for Open and distance learning, found that a reasonable number of educational managers were not fully exposed to the distance education mode of learning despite the many years of experience in the education sector. As a matter of fact, Tarus, Gichoya and Muumbo (2015), in their study on challenges of implementing eLearning in Kenya, found that 92% of the respondents identified inadequate ICT and eLearning

infrastructure as one of the challenges hindering the implementation of eLearning in Kenyan public universities, despite the fact that Kenya developed an ICT policy in 2006 that aimed to ensure a properly working infrastructural ICT service. Additionally, Nyerere (2016) notes that staffs are not trained distance education facilitators yet they are key stakeholders on quality of these programmes. Nyerere's argument is that implementation of open and distance learning as a mode of study requires universities to be prepared in terms of both facilities and human resources. A further emphasis was a study by Mulwa, Kyalo, Omondi, and Mboroki (2013) as cited by Nyerere (2016) which found a positive relationship between internet connectivity and electronic learning equipment as a determinant of readiness to adopt eLearning by a training institution.

Kyalo and Hopkins (2013) observed that Kenya Medical Training College advocated for and launched distance education program for continuous professional development in all its constituent campuses. However, according to the documented evidence in KMTC Strategic Plan Document (2013-2017), distance education program is only running in Kisumu, Nairobi, Thika, Kakamega Nakuru, Nairobi, Embu, Kisii and Machakos. From the statistics, the researcher has observed that Lodwar is not among them. According to KMTC Strategic Plan (2013-2017) document, KMTC still faces some noteworthy training related challenges that include inability to absorb a good number of qualified applicants into their courses, an acute shortage of teaching staff almost in the 17 academic departments, inadequate training materials and funding from the government for capital development and slow embracement of ICT in teaching and learning. The observations suggested the existence of peculiar factors influencing the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County that this study sought to establish.

### **1.3 Purpose of the study**

The purpose of this study was to investigate factors influencing readiness to adopt open and distance education in Kenya Medical Training College, Lodwar Campus, Turkana County.

### **1.4 Objectives of the study**

This study was guided by the following objectives:-

- i. To examine the influence of learner's demographic factors on the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County.



- ii. To determine the influence of access to technology on the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County
- iii. To determine the influence of availability of distance education instructional materials on readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County.
- iv. To establish the influence of learner support services on readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County.

### **1.5 Research Questions**

The study focussed on the answering the following research questions:-

- i. How does influence of learner's demographic characteristics influence readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County?
- ii. How does access to technology influence the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County?
- iii. To what extent does availability of distance learning instructional materials influence readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County?
- iv. How do learner support services influence readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County?

### **1.6 Hypotheses of the Study**

The following alternative hypotheses were tested at the significant level of 0.05:-

**H<sub>A1</sub>**: There is a significant influence between learners' demographic characteristics and the readiness to adopt open and distance learning.

**H<sub>A2</sub>(a)** There is a significant influence between access to technology among students and the readiness to adopt open and distance learning.

**H<sub>A2</sub>(b)** There is a significant influence between access to technology among lecturers and the readiness to adopt open and distance learning.

**H<sub>A3</sub>**: There is a significant influence between availability of distance instructional materials and the readiness to adopt open and distance learning.

**H<sub>A4</sub>**: There is a significant influence between learner support services and the readiness to adopt open and distance learning.

### **1.7 Significance of the study**

The findings from this research may provide useful information to be utilized by KMTC policy makers concerning training especially in the constituent colleges, when formulating policies on adopting open and distance learning programmes as modes of addressing training related challenges. Additionally, it's expected that the findings may also be utilized by the KMTC Lodwar Campus to probably embrace the benefits of open and distance learning and adopt suitable learner support services for the potential distant learners.

Besides the government, the findings of the research may also utilized by other educational stakeholders such as missionaries and technological experts on the choice of sustainable technological infrastructure that may be readily adopted for use in distance education in Turkana County. Finally, the study may provide a basis for future research studies on learning institutions' adoption of open and distance learning.

### **1.8 Limitations**

At the time of the study some students had gone for their industrial attachment and clinical placement practice outside Turkana County hence this posed a challenge on the final sample size. Stratified random sampling was used to ensure proper representation of the student population.

### **1.9 Delimitations**

The study was restricted to staffs and students of Kenya Medical Training College; Lodwar Campus, located in Turkana County, hence may not have reflected a true situation of other learning institutions in Turkana County.

### **1.10 Basic assumptions of the study**

It was assumed that all the respondents were to be available to provide accurate and reliable information during data collection.

### **1.11 Definition of significant terms used in the study**

The following were the terms used in the study:

**Access to technology**-a way of being able to get and use technology

**Availability Distance education instructional materials** -accessible, usable, handy specific items used in a lesson and delivered through various media formats used to connect learners with distributed learning

**Demographic characteristics**-attributes of a population such as age, gender and marital status

**Distance learning**- a system and a process that links learners with learning resources conducted through one or more media

**Learner support services**- all actions beyond the delivery of course materials that support the learner to progress smoothly with learning

**Open learning** - widening access and personal choice in learning

**Readiness to adopt**- preparedness to start using something

**Technology**-devices for distributing messages which involves use of media and gadgets,

### **1.12 Organization of the study**

The research study was organized into five chapters. Chapter one comprised of background to the study, statement of the problem, purpose and objectives of the study, research questions, hypotheses of the study, significance of the study, limitations and delimitations of the study, basic assumptions of the study and definitions of significant terms that were used in the study.

Chapter two consisted of the literature review which was divided into subtopics: readiness to adopt open and distance learning, learners' demographic characteristics, access to technology, availability of distance instructional materials and learner support services. The review also presented the theoretical and conceptual framework. Chapter three consisted of the research methodologies that were divided into; research design, target population, sampling and sampling procedures, research instrument, validity and reliability of the research instrument, data analysis procedures, ethical considerations and operationalization of variables. Chapter Four provided data analysis, presentation of findings, interpretation and discussion of the study findings. Chapter Five presented the summary of the study findings, conclusions, recommendations of the study and suggestions for further research studies.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter gave a brief review of past related studies on factors influencing readiness to adopt open and distance learning. It was therefore organized in the following sub-topics; readiness to adopt open and distance learning, learner's demographic characteristics, access to technology, availability of distance learning instructional materials and learner support services. These were followed by the theoretical and conceptual framework.

#### **2.2 Overview of Open and Distance Learning**

The notion of distance learning being open means that a learner or a group of learners can access the learning opportunities without being restricted to place or schedule of the learning program (Olugbenga, Rotimi, and Olakulehin, 2006). Cited by Owusu-Mensah, Anyan and Denkyi (2015), Keegan (1996) identified the key characteristics of distance education. According to Keegan, the instructor and the learners are virtually separated during the period of learning but the technology is used to bridge the separation. Additionally, Keegan says that learners are supported during the learning process to ensure they don't drop out of the learning process. Keegan adds that the distance education program may organise special time for residential classes to provide an opportunity for learners to interact and socialize personally or through technology with the purpose of ridding learners of the perceived and actual learners isolation during the learning period.

#### **2.3 Readiness to adopt open and distance learning**

Readiness to adopt open and distance learning refers to preparedness to start using this mode of learning. However as noted by Gakuu (2006), many universities introduce distance learning initiatives without first establishing the critical factors in the working environment which would enhance adoption of distance learning. For instance, adoption of distance learning in the universities depends on the environmental factors facing the lecturers, which is the most important element in any kind of education system, and should not be taken for granted since the success or the failure of any education approach depends on them (Gakuu, 2006). Researchers seem to suggest that there are many factors that influence the institutions preparedness to adopt open and distance learning, such as cost implications, education

policies, student and lecturer's attitude, change management, type of technology under use among others. However this study focussed on presence of knowledge and skill information, communication and technology and the trained distance education facilitators.

### **2.3.1 Knowledge and skills in information, communication and technology (ICT)**

Mulwa (2012), found out that the preparedness to start using e-learning was being determined by educational status and the presence of technological infrastructure. Gakuu (2006) emphasized that distance education relies heavily on information communication technology (ICT) for transmitting its educational materials to the learners. With the current developments in telecommunication, a lecturer needs to have some basic computer literacy knowledge if they have to offer their courses in any electronic form.

Mac-Ikemenjima (2005) in Nigeria noted that the technological know-how has become a changing determinant of every person's way of living. According to him, technological know-how is the ability to establish and find the particular information and avail it for the development of a certain phenomenon of interest. He also noted the critical change that technology is initiating globally in the systems of education, in class and within distance education programs. However, Brodin and Lindstrand (2003) supports Nihuka (2008) with the argument that the impact technology is creating in the education sector has not been disseminated throughout the world and proposes the need to have it known among many instructors and learners presently.

The Federal Republic of Nigeria (2004) concluded that technology was a key component that would ensure that higher education contributed maximally to the Nigeria's development, although distance education programs in Africa have not been fully embraced it (Ololube, 2006b). Marc Prensky (2002) observed that learning institutions' system appeared not to be supporting an enabling environment for technology to thrive, hence resulted in creating a technological gap between instructors with technological know-how and those without. For instance, Mbwette (2009) illustrated a Tanzanian Open University, whose challenges were that lecturers did not only lack technological information and skills, but the technological gadgets themselves. Other notable challenges included a visual impairment and blindness yet no critical and relevant training was given by training institutions to fill the gap created in technological know-how among the disadvantaged staffs (UNESCO, 2002).

### **2.3.2 Trained staff for open and distance learning**

Researchers have observed that open and distance learning makes new demands on both the providers and learners, which in turn affects their way of working and learning respectively. Panda (2004) as cited by Owusu-Mensah, Anyan and Denkyi (2015) notes that if open and distance learning staff are not equipped with the necessary skills, it can lead to high dropout rate among distance learners. He adds that the situation raises the need for institutional emphasis on staff development programmes and human resource development policy for teaching, technical, administrative staff and part-time staff associated with the operations of distance education institutions and continuous updates on areas of information and technology (Panda, 2004). On the other hand, Smith (2003) proposes an interactive forum where the interested staffs can learn from each other, online trainings, use of books, mentorship, periodic discussion among equals or observation of other participants running distance learning programs. Similar efforts for instance are being done in China, where the China Television Teacher's College uses audio-visual-based distance education to equip new teachers and as a result it has helped to provide a range of distance education professional development programmes, school instructors and administrators (UNESCO, 2002).

Owusu-Mensah, Anyan and Denkyi (2015) cited O'Rourke (1993) who identified that those in direct contact with learners, in teaching, tutoring and student support roles need to be at ease with adult learners and their dynamics, understand the administration and organization of distance learning systems, the required resources and the scheduling of distance education course delivery. Additionally, they should be team players mediating between the learners and the institution and be equipped with the relevant support to the learners to ensure they don't drop out of the learning process, foresee and plan for logistical needs of distance education schedule, allocate resources and anticipate potential difficulties. They should be able to communicate equally with clients, learners and with teaching and administrative staff within the institution to address problems and issues of concern and help to resolve them. This seems to be the indicator of how well the staffs may be adequately prepared for adoption of the open and distance learning.

### **2.4 The influence of learner's Demographic characteristics on the readiness to adopt open and distance learning.**

Distance learning environment differs from traditional classroom (Seckel, 2007) because the responsibility of learning falls on the learner. Researchers have observed that in the past,

distance learners tended to be older, committed to learning, self-motivated and took responsibility for their learning, had responsibilities such as families, employment and may have had interferences that might have affected their learning such as transportation, childcare and the need to earn an income (Cercone, 2008). These make distance learners to be very heterogeneous (Simonson, Smaldino, Albright and Zvacek, 2009). According to a study that sought to examine the relationship of study habits and demographic variables on academic performance by Rugendo (2014), demographic variables were referred to as personal circumstances of the learner that were considered to have had an influence on the academic performance and consisted of age, gender, marital status, income and education background (Rugendo, 2014). This study focussed on the influence of age, gender and marital status on the readiness to adopt open and distance learning.

#### **2.4.1 Age and the readiness to adopt open and distance learning.**

A survey conducted in Worcester Polytechnic Institute in United State of America (USA) indicated that the 73% of potential graduate school students were under the age of 35. In an April 2007 survey of distance learning students (Worcester Polytechnic Institute (WPI), 2007), it was found that only 58% of students are under the age of 35. Another survey conducted by Owusu-Mensah (2007) found that one-third of a sample picked from University of Cape Coast (UCC) distance education programme, 42% of males and 37% of females fell within the 30-39 years age range while over half of the sample from the University of Education, Winneba, 51.7% of males and 54.9% of females fell within age group 40-49. Thus, the studies seemed to suggest that majority of the population in distance education were adults. Malcom (2012) identified characters of an adult learner as being autonomous and prefer a sense of control and self-direction. The like options and choice in their learning environment, are goal oriented may drop out of learning if their expectations aren't met. They also prefer practical knowledge and experiences that will provide important skills to gain competence in workplace skills to boosts confidence and improve self-esteem. Adults prefer to learn by doing, are self-directed and prefer a learning community with same experiences with whom they can interact and discuss questions and issues. They have accumulated a unique store of knowledge and experiences which they bring to the learning situation but may also fear or have anxiety about a subject which can interfere with the learning process. Malcolm (2012) brought to attention the fact that adult learners may present with potential physical limitations related to age such as loss of sight, hearing sense and coordination of psychomotor skills which may reduce their ability in learning. This may seem

to suggest that age of the learners may have an impact on how institution may be prepared to utilize distance learning.

#### **2.4.2 Gender and the readiness to adopt open and distance learning**

WPI Academic Technology Centre (2007) observed that in most distance learning programmes in North America, distance learning students are predominantly female, with different studies indicating that between 60% and 77% of students are female but the WPI Academic Technology Centre did not follow this trend as 75% of the students responding to the April 2007 survey of distance learning students were male. A report by Peebles (2014), on Gender Analysis of Caribbean Region revealed that gender issues affected both women and men with reference to their utilization of distance learning. For instance, the study revealed that the access of female to open and distance learning outstripped men. More women that enrol for distance education completed training at a distance. The report also seem to suggest that with reference to human resource and professional development, women tend to be concentrated in socially accepted, non-technological and traditionally female dominated streams hence seem to widen gender disparities in access to and use of distance education as a mode of learning. The different flexible delivery approaches for distance education makes it more accessible for women who have multiple demands on their opt for this mode of education in significantly greater numbers than men who are more reluctant to take time away from earning an income to pursue further training after high school. The report pointed out the numerous studies on the different ways boys and girls learn due to the differences in their brain development and the pace of this development, with the view that open and distance learning should look into different learning styles from a gender perspective and make a conscious effort to include teaching approaches that take both male and female learning patterns into account, as these underlying social values have contributed to a high degree of occupational segregation based on gender lines within open and distance learning programmes.

#### **2.4.3 Marital status and the readiness to adopt open and distance education**

Osei (2012) noted that distance learning is most utilized by married student population, while Boston, Ice and Gibson (2011), indicated that older undergraduates and those with a dependant, a spouse, or full-time employment participated in both distance education classes and degree programmes relatively more often than their younger counterparts. Female aged between 18 and 40 years seem to be the most motivated to choose take up distance



education due to commitments from their family and work and possibly they seem to get time for scheduled face to face classes as noted by (Quereshi, Morton and Antosz,2012). Various studies tend to suggest that more than half of distance learning students are married with dependents, juggling between a family and a job with their coursework (Worcester Polytechnic Institute, 2007).

## **2.5 The influence of access to Technology on the readiness to adopt Open and Distance Learning**

Access to technology means a way of being able to get and use technology. Researchers suggest that distance education utilizes certain technological features required in the design of special applications for instructional design and communication between learners and instructors. Chaney, Stollefson and Eddy (2008) emphasized that distance learning is done in the course of group interaction hence instructional designers will be required to integrate the technologies to meet the needs of every distance learner and foster collaboration and interaction among these learners.

### **2.5.1 Internet connectivity's influence and the readiness to adopt open and distance learning.**

Researchers suggest that in distance education, there is diminished instructor-learner interaction. However, Bernard, Abrami, Borokhovski, Wade, Tamim and Surkes (2009) noted that besides the fact learning content can be contained in the utilization of networked computers, they in addition provide a forum for the nature of interaction that allows for communication between learners and instructors and among learners too. It also guarantees cost effectiveness of the communication happening between the learner and instructors while allowing for diversified learning activities to take place anywhere and anytime (Shayo, Olfman, Iriberry, and Igarria. (2007).

As noted by Yusuf (2006), relevant operational communication and technological tools are a pre-requisite of a prosperous distance education program. However, Mayeku and Odera (2011) noted that with regard to open and distance learning, many institutions' programmes in Kenya had not embraced latest technology; due to the lack of necessary ICT and audio-visual equipment. Another challenge as noted by the International Network for the Availability of Scientific Publication (2003) is that the presence of inexpensive internet is met by challenges of logging into on the network .For instance in Tanzania, the internet

services were availed through phones and modem but learners who possessed unsuitable phones and modems could not be configured to the available internet (The International Network for the Availability of Scientific Publications [ITFS], 2003).

Another case was that of Nigeria, where Yusuf (2006) notes the absence of electricity and erratic electricity supply in major areas within the country, besides other Nigerians not having the technological gadget that utilize internet. In conclusion, according to Samans (2008), distance education was already a mature field when the Internet became public. Its three sub-fields (correspondence, audio-only, and audio-visual) had each developed as a result of specific technologies but were constrained by the limits of those media. The internet has served to fill those gaps. The emergence of the Internet and related networks has had and will increasingly have radical effect on the transformation of education (UNESCO, 2002).

### **2.5.2 Technological gadgets' influence and the readiness to adopt open and distance learning**

Gulati (2008) argues that utilization of technology mediated communication removes the various obstacles that are experienced with the various approaches that are used in the delivery of distance education. However, Nwagwu and Ahanihe (2006) observed that Africa's significant drawback has been lack of manpower with technological capabilities, and inadequate gadgets that can be used together with the available internets occasioned by their high cost. For instance, an observation made in Nigeria by Ifinedo and Ololube, (2007) indicated that simple information and communication gadgets are not financially accessible among middle income earners, hence the benefits of technology are not realized in distance education in Nigeria. Another case was illustrated by Ololube, Ubogu and Egbezor (2007) who cited a survey conducted in ten African countries which indicated that Botswana had the highest fixed line household penetration at 22.4%, South Africa was at 22.1%, Zambia was at 18.6% while Namibia was at 14%, Tanzania was at 6.1% fixed line penetration, Ethiopia at 5% , Rwanda at 4.4% while Uganda had the least fixed line penetration below 1% as cited by (Gillwald and Esselaar, 2005).Donald (2003) emphasises that special considerations for distance learning should be made to select and provide appropriate technological gadgets and media that will ensure the achieving of learning objectives in the most cost-effective manner.

## **2.6. The influence of availability of Distance Education instructional Materials' on the readiness to adopt Open and Distance Learning.**

Gujjar and Malik(2007) define instructional material as those used to describe specific items used in a lesson and delivered through various media formats. The success of distance learning program is tied to the availability of distance learning instructional materials that are enough for the learners and suitable and designed for self-instruction by the learner (Gbenoba & Opeyemi, 2014).The designed self –instructional materials should be learner-oriented, self-explanatory, self-contained, self-directing, self-motivating and self-evaluating because the learner often feels isolated in the absence of the teacher and peer-learners (Gbenoba & Opeyemi, 2014).Commonwealth of Learning( 2005) elaborates that distance learning materials should state learning objectives and that learning task should be broken down into small steps. The Commonwealth of Learning adds that learners should be assessed against the stated learning objectives and that the learning tasks should reflect learning objectives. The Commonwealth of Learning further emphasises that the material should be ‘chunked’ into small, meaningful pieces, that mnemonics should be used to aid memory, and that real-world situations should be simplified and that the learning package should prescribe what is to be learnt. Further, that they should address the learner directly and have a generous layout for learners to write and that they should include a study guide on how to use the materials and how to study by self (Commonwealth of Learning, 2005).

Awolalu (2010) as cited by Gbenoba and Opeyemi (2014) says consideration should be made when deciding on the media mix for delivering the learning material as most instructional media are multifunctional and can be adapted to a wide range of purposes hence the simplest, most accessible and most cost effective medium should be used. Media options include: print, with text, illustrations, photographs, audio tape, videotape, computer-aided learning, and computer managed learning, e-learning platforms, for example, electronic mail, teleconference, computer conference or video conference. Gujjar and Malik (2007) emphasized that the valuable function of presenting the instructional materials in multimedia is that some students learn more effectively from television or film, and others from print as well as making a course more interesting, providing for alternative modes and styles for learners, and encouraging learners to think about the material rather than just memorize it. This study focussed on print and electronic instructional material.

### **2.6.1 Print Medium Distance Education instructional materials and readiness to adopt open and distance learning**

Printed instructional materials include, but not limited to textbooks, journal articles, instructor manuals and guides, student workbooks, assignments, and other reference materials (Onyilagha and Nnajofofor,2016).Of all teaching media, printed material is important and significant. The stimulus to learning which it offers depends primarily on the teaching skills which it incorporates, and on the sense of progressive mastery of the subject which the student derives from it. Further, the printed material can be integrated into broadcast programmes, directed activities, discussion groups and face to face teaching, be packaged and dispatched to the students at regular intervals (Gujjar and Malik,2007). Siraj (2008), notes that in other approaches of distance education, a guide is provided alongside textbook with an audio or audio-visual learning media as a complement; a case in Pakistan and a the Open University of Bangladesh (Islam, Rahman,and Rahman ,2006)

### **2.6.2 Electronic Distance Education instructional materials and readiness to adopt open and distance learning**

The other essential component of any distance education program is the availability of electronic learning materials that are not only networked across computers but presented in multiple media as cited by (Tang, 2009).As a matter of fact, advances in computer systems and technology have resulted in the introduction of internet resources and use of interactive multimedia instructional material (Sun and Chen, 2007). This ensures their accessibility and availability to every distant learner (Lo and Dale, 2009).Due to its utilization of internet technology, it creates flexibility and convenience to the learner irrespective of place and time where the learner is (Mashhour,2007). As noted by Towhidi(2010), communication between the learners and instructors through multimedia is enabled through the use if the various communication tools that are provided for by the internet.

### **2.7 Learner Support Services' influence on the readiness to adopt Open and Distance Learning.**

Student attrition, as noted by Watiri(2013) is one of the notable emerging challenges in distance education programs. A study by Rugendo (2014) on the influence of study habits and demographic variables on academic performance, he cited Moore and Kearsley (1996) and Evans and Juler (1991) who argued that the distance learning students experience many barriers to learning such as: lack of study rooms within and outside the university, lack of

feedback or contact with tutors, lack of support services, alienation, lack of finances to make copies of learning materials and inability to meet the cost of travel, lack of time to study, demands from the employer, and poor reading and note taking skills. Distance learning students also lack an opportunity for learner to learner interactions. They should therefore be equipped with appropriate study skills. According to Zawacki-Richter, Brown and Delpont,(2009), provision of support to the learners in distance education has a fundamental importance because in open and distance learning, the students assume most of the responsibilities on their own.

According to Simpson (2000), all other comprehensive activities besides essential learning that ensure the smooth achievement of the learning objectives in distance learning constitute the learner support systems. Simpson (2000) adds that they include educational and non-educational support. The goal of student support is linked with the expression of scaffolding of students in order to promote independent and mobile learning in which they are enabled to have solution of their own problems thus, providing a platform for help in academic and non-academic issues (Zawacki-Richter, Brown and Delpont,2009). Its through the learner support services program that these needs can be addressed. Tait (2003) agreed with other researchers' views by that the core aims of support of a student in distance learning are cognitive, affective, and systemic Tait (2003).

### **2.7.1 Tutorial support and the readiness to adopt open and distance education**

Panagiotis(2010), noted that regardless of distance learning students' autonomy, self-motivation and interaction with the learning material, they are vulnerable regarding the application of the acquired knowledge, hence a cordial relationship should exist between learners and instructors that will facilitate them to learn and overcome all other problems that may affect their academic life. Commonwealth of Learning(2005) noted that the tutor is to among others things give information about the objectives of the study programme, regularly assess students' progress, and provide opportunity for students to ask questions, respond to questions raised by students and control the learning experience. According to Jelfs, Richardson and Price (2009), periodic feedback by the instructors should be availed to the learners correctly. Donkor, (2012) cited the Namibia Polytechnic Face-to-Face Manual (2009) that recognises the primary role of tutors as not only making learning materials more understandable but also to encourage and motivate students by using assignments to support tutoring, devise ways of encouraging interaction among students, aid students to improve

academically at all times, be in tune with the learners' characteristics and ensure that the learning materials of distance students are disbursed on time to them.

### **2.7.2 Counselling and the readiness to adopt open and distance learning**

Counselling play a vital role in education settings; identifying potential barriers to learning, developing and assisting learners to overcome these barriers, assisting their transition from education to work, or supporting a transition into higher education or into further career opportunities. Therefore, guidance and counselling interventions may target academic, social, personal, occupational, health, family and spiritual aspects of a student's life (Sekyi , 2013).

Kangai, Rupande and Rugonye(2011) cited Robinson (1991) who categorised guidance and counselling interventions in three ways. First are those relating to study techniques and learning difficulties because distance students face frequent learning difficulties mostly relating to how to learn effectively, how to use learning times judiciously and being able to exhibit knowledge attained when required to do so. Next are those arising from an individual trying to interact with another distant learner and sometimes impersonal institution because distance students are likely to feel isolated from their various institutions due to the distance barrier compared to the on-campus students who are physically present at the campus and has access to all the facilities provided by the institution. Distance students may therefore encounter problems with accessing learning facilities such as libraries, laboratories and also, problems with contacting counsellors or friends who may assist in overcoming a difficulty. Finally, are Personal problems which affect the student's work? This relates to the day-to-day occurrences that impact a student's academic life. Distance students may face such problems with regards to family commitment, work matters and also financial difficulties. These issues may be recurring and unpredictable. Therefore, the existence of guidance and counselling support for distance learning students is therefore vital throughout their programme duration (Sekyi , 2013).

### **2.7.3 Administrative services and the readiness to adopt open and distance education**

Sekyi (2013),cited Welch and Reed (2005) who were of the view that administrative support in Distance education aims at providing adequate facilities and learning resources to distance students. According to the University of Birmingham, The University of Birmingham Code

of Practice for Distance Learning (2012-13: 9) as cited by (Sekyi , 2013), the prospective student should have a direct access to information about the admission requirements of the programme, particularly where these include access to resources, hardware, and/or software. Next students should be made aware of whether on-going access to these is a requirement for continued registration on the programme, expectation and time commitment that would be placed upon them. Additionally, students should also be notified of the nature and extent of independent, collaborative and supported study contained within the programme, any requirement for attendance at any location at any time throughout the programme and additional costs which might be associated with the programme such as travel and subsistence, or necessary provision for personal tutors to visit the student's location.

For instance, a study conducted in a Malaysian University's distance education program as illustrated by Sim ,Atan and Rozhan (2005), revealed that most students utilized the rigorous annual course that was conducted by the institution, while least of the students utilized the educational guide booklet. Additionally, the quality of the learner support system was achieved by the printed learning materials (Sim, Atan,and Rozhan Idrus,2005).

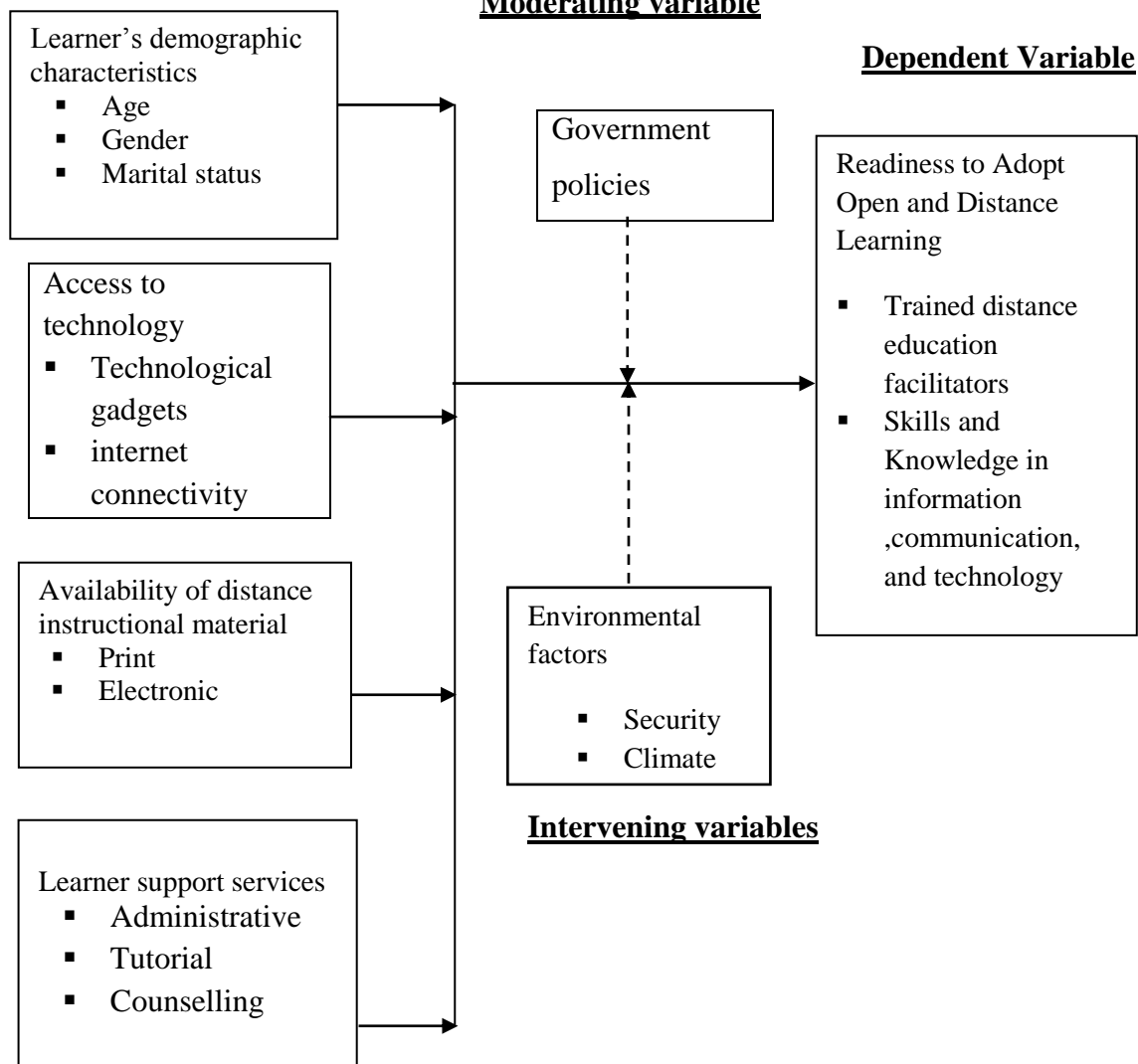
## **2.8 Theoretical Framework**

The study adopted a theory of transactional distance proposed by Moore in (1990). Moore proposed that there exist distance in all educational relationships: teaching-learning relationship, which may include physical distance but also distance of understandings and perceptions hence transactional distance. The learners, teachers or training professionals and educational organisations have to develop procedures to overcome their separation such as use of technology, have knowledge and skills to utilize technological gadgets, be able to provide the relevant support to the learner at a distance, and develop instructional materials that suits distant learner.

## **2.9 Conceptualization**

This study sought to find out factors influencing readiness to adoption of Open and Distance Learning at KMTC Lodwar Campus. The factors that were investigated included the learners' demographic characteristics, access to technology, availability of distance learning instructional materials and learner support services as shown in Figure 1.

**Independent variable**



**Figure 1: Conceptual framework**



## 2.10 Knowledge Gap

The study therefore sought to fill the following identified gaps as shown in Table 2.1.

**Table 2.1: Knowledge gap**

<b>Researcher(s)</b>	<b>Focus</b>	<b>Findings</b>	<b>Knowledge Gaps observed</b>
Rugendo,2014	The influence of study habits and demographic variables on academic performance	There was no significance relationship of students' of gender, marital status, age, and occupation on the academic performance except for students' highest qualification	The study focused on the distant learner's demographic characteristics distance learners. There is need for a study of how non-distant learner's demographic characteristics from face to face program influence their preparedness for the distance education programme.
Yusuf,2006	"Problems and prospects of open and distance learning"	Successful distance education cannot be assured without the use of effective communication and technological tools.	Focus should not only be on effective technology for the success of distance education because other significant factors such as access to the technology and the technological gadgets and possession of knowledge, skills in information, communication and technological are needed for their utilization of technological
Gbenoba and Opeyemi (2014)	Instructional material development in open and distance learning	Consideration should be made when deciding on the media mix for delivering the learning material as most instructional media are multifunctional	Faculty need to be trained on how to instruct learners using the available distance instructional materials and so meet the learning needs of a distance learner
Sim , Atan and Rozhan (2005)	Learner support in distance education	The printed learning materials are the most important dimension in the learners' support system and contributed the most to the overall satisfaction of quality	Leaner support does not only involving interaction with the learning materials .Other support such as counselling and administrative supports are needed

## **2.11 Summary**

Researchers seem to suggest that there are many factors that influence the institutions' preparedness to adopt open and distance learning. This chapter reviewed the literature that focused mainly on learners' demographic characteristics, access to technology, availability of distance learning instructional materials and learner support services. The chapter ended with the presentation of the theoretical and conceptual framework.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter was organised under the following sub headings: research design, target population, sample size and sampling technique, research instrument, validity and reliability of the instrument, data collection procedure, data analysis technique, ethical consideration and operationalization of the variables.

#### 3.2 Research Design

This study employed descriptive survey design. Descriptive designs are employed when the objective of the study is concerned with specific forecasts, description of facts and attributes about individual, group or a phenomenon (Kothari,2004). This study sought to establish factors influencing the readiness to adopt open and distance learning in Kenya Medical Training College, Lodwar Campus in Turkana County.

#### 3.3 Target Population

According to Mugenda and Mugenda (2003), a population that bears attributes of interest for study to the researcher and whose findings can be generalized to the whole population is the target population. In KMTC Lodwar Campus, the study targeted all the ongoing one hundred and thirty five (135) community nutrition students, two hundred and ten (210) community nursing students, thirteen (13) lecturers. This made the target population to be heterogeneous, a total of three hundred and fifty eight (358), as shown in Table 3.1.

**Table 3.1 KMTC Lodwar Target Population**

<b>Respondents</b>	<b>Total Number of Population</b>
Community Health Nursing Students	210
Community Nutrition Students	135
Lecturers	13
<b>Total</b>	<b>358</b>

(Source: The KMTC Lodwar Campus College Administrator)

### 3.4 Sample Size and Sampling Technique

The KMTC Lodwar targeted population involved both the students and the lectures. Since the students took different courses; nursing and nutrition, the course was the basis of student population stratification as shown in the Table 3.2.

**Table 3.2 Stratification of KMTC Lodwar Student Population**

<b>Course of study[stratum]</b>	<b>Number of students</b>
1. Community Health Nursing Students	210
2. Community Nutrition Students	135
<b>Total</b>	<b>345</b>

Each course was considered as a stratum hence stratified random sampling technique was used. The sample size was therefore determined by a statistical formula recommended by (Mugenda and Mugenda, 2003):

$$n = \frac{z^2 p q N}{e^2 (N - 1) + z^2 p q}$$

Where:

n = Size of sample

N = Size of population.

P = Sample proportion estimated to have characteristics being measured. Assume a 95% Confidence level of target population

q = 1 - p

e = Tolerable error level (assume 0.05 since the estimate should be within 5% of the true Curve)

z = The standard normal deviation at the required confidence level that is 1.96.

The researcher assumed a 95% confidence level of the target population and that the response achieved was to be within + 5% of the true state of the population targeted.

$$\begin{aligned} \text{Hence the student stratified sample size } n &= \frac{(1.96^2) (0.05)(1-0.05)(345)}{(0.05)^2(345-1) + (1.96)^2(0.05)(1-0.05)} \\ &= 60.389 \end{aligned}$$

Rounded to a whole number =60

Therefore the stratified sample size of 60 was proportionately distributed among the two groups of student as follows:

$$\text{Community health nursing students} = \frac{210}{345} \times 60 = 37$$

$$\text{Community Nutrition Students} = \frac{135}{345} \times 60 = 23$$

Since lectures were all involved in the teaching of all the students, they were treated as a homogenous population hence the researcher applied a simple random sampling method. To obtain the sample size, a statistical method proposed Kish (1965) was used. Hence;

$$n = \left[ \frac{n'}{1 + \frac{n'}{N}} \right]$$

Where:

n = Sample Size

$$n' = \frac{S^2}{V^2}$$

S = Maximum standard deviation in the population element (total error = 0.5 at a confidence level of 50%)

N = Population Size

V = Standard error of sampling distribution = 0.05

$$\text{Hence lecturers sample size } n = \frac{\left[ \frac{(0.5)^2}{(0.05)^2} \right]}{1 + \left[ \frac{(0.5)^2}{\frac{(0.05)^2}{13}} \right]} \quad \text{hence } n=12$$

The total sample size was as shown in the Table 3.3.

**Table 3.3 KMTC Lodwar Campus Staffs and Students total sample size**

<b>Population</b>	<b>Total Population</b>	<b>Sample size</b>
CommunityNursing		
Students	210	37
Community Nutrition		
Students	135	23
Lecturers	13	12
<b>TOTAL</b>	<b>358</b>	<b>72</b>

### **3.5 Data Collection instruments**

Two different self-administered questionnaires were used to collect qualitative and quantitative data from the sampled respondents of lecturers and students. Both the student's and lecturers' questionnaire were divided into sections A that contained items on learners' demographic characteristics , section B contained items on access to technology and section C of the students questionnaire contained items on learner support services, while section C of staffs' questionnaire contained items on distance learning instructional materials. The questionnaire was used because (Kothari, 2004) cites that it is free from the bias of the interviewer.

### **3.6 Validity of the research instruments**

Validity is the magnitude of a tool measuring the items it was intended to measure (Rugendo, 2014).Content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study (Mugenda and Mugenda, 2003). The appropriateness of the content of the research instrument was determined through an examination by experts in the field of distance learning. The instrument was tested for adequacy of content, adequacy of work space, size of font type and clarity of printing. The recommendations from the experts were taken into consideration in order to improve the instrument.

### **3.7 Reliability of the instruments**

Mugenda and Mugenda (2008) defined reliability is a measure of the degree to which a research instrument yields consistent results after repeated trials. This study utilized the split-halves method .A one-time administration of research instruments was done. The total numbers of items in student's and lecturer's instrument were divided into halves (odd numbers and even numbers), then the two total scores were correlated using the Spearman rank correlation. There was a strong positive spearman's correlation coefficient of  $r_s = 0.72$  of student's, and a positive strong spearman's correlation coefficient of  $r_s = 0.74$  of lecturer's questionnaire. This indicated a high level of consistency of the results that were obtained.

### **3.8 Data Analysis procedures**

The collected data was cleaned and coded for entry into the computer. The Data was analysed using Statistical Packages for Social Sciences. The analysis and interpretation of the data was done based on the objectives and research question. Percentages were used to present and analyse the proportions of the respondents by their demographic characteristics, access to internet and technological gadgets, possession of ICT skills, mode of internet access, location of access to internet. Mean scores and Standard deviations were calculated to get the averages and deviation levels of the learner support services. Chi square test was used to predict the significant level of influence the independent variables: demographic characteristics, availability of distance learning instructional materials and learner support services on the readiness to adopt open and distance learning. Binomial regression analysis and multinomial regression analysis were used to determine relationship of the independent variable; access to technology and readiness to adopt; among students and the lecturers. The hypotheses were formulated to test dependent and independent variables at significant level of 0.05. These are shown in Table 3.4.

**Table 3.4 Tests of Hypotheses**

	<b>Objectives</b>	<b>Hypothesis</b>	<b>Types of analysis</b>
<b>1.</b>	To examine the influence of learner's demographic characteristics on the readiness to adopt open and distance learning in arid and semi-arid areas.	There is a significant influence between learners' demographic characteristics and the readiness to adopt open and distance learning.	Chi square test
<b>2.</b>	To determine the influence of access to technology on the readiness to adopt open and distance learning in Arid and Semi-arid areas	i. There is significant influence between access to technology among students and the readiness to adopt open and distance learning.	Binomial regression analysis
		ii. There is significant influence between access to technology among students and the readiness to adopt open and distance learning.	Multinomial regression analysis
<b>3.</b>	To determine the influence of availability of distance education instructional materials on readiness to adopt open and distance learning in arid and semi-arid areas.	There is a significant influence between availability of distance instructional materials and the readiness to adopt open and distance learning	Chi square test
<b>4.</b>	To establish the influence of learner support services on readiness to adopt open and distance learning in arid and semi-arid areas	The is a significant influence between leaner support services and the readiness to adopt open and distance learning	Chi square test



### **3.9 Ethical Consideration**

The researcher obtained an introductory letter from the University of Nairobi to apply for a research permit from the National Commission for Science, Technology and innovation. The research permit was presented to County Commissioner and County Director of Education Turkana County for research authorization. The permit and the research authorization were presented to Kenya Medical Training College Research and Ethics Review Committee, which gave permission to carry out the research at Kenya Medical Training College, Lodwar Campus. Communication was done to the Principal Kenya Medical Training College Lodwar Campus and the Heads of department in Nursing and Nutrition. The respondents were explained to the nature of the study, to obtain their informed consent of participation. There were informed of their freedom to decline participation and withdraw from the study without any penalty. Confidentiality and anonymity was assured by the respondents not giving their names, but the questionnaires were numbered. In addition, they were offered the opportunity to receive a report about the results and conclusions of the research project.

### **3.10 Operationalization of Variables**

Rugendo (2014) cited Martyn (2008) who clarified that the strict definition of variables in factors that can be measured is called operationalization of variables. Table 3.5 shows the operationalization of the variables that were used in this study.

**Table 3.5 Operationalization of Variables**

<b>Objective of the study</b>	<b>Variables independent</b>	<b>Indicators</b>	<b>Measuring scale</b>	<b>Data Collection Method</b>	<b>Data Analysis</b>
To examine the influence of learner's demographic characteristics on the readiness to adopt open and distance learning in arid and semi-arid areas.	Learner's demographic characteristics	Age Gender Marital status	Nominal	Interview through questionnaire	Chi square test  Mean mode
To determine the influence of access to technology on the readiness to adopt open and distance learning in Arid and Semi-arid areas	Access to technology	Technical gadgets  Internet connectivity	Ordinal scale	Interview through questionnaire	Binomial regression  Multinomial regression test
To determine the influence of availability of distance education instructional materials on readiness to adopt open and distance learning in arid and semi-arid areas.	Availability of distance education learning materials	Printed Electronic	Nominal	Interview through questionnaire	Chi square test
To establish the influence of learner support services on readiness to adopt open and distance learning in arid and semi-arid areas	Learner support services	Administrative  Tutorial  Counseling	Ordinal	Interview through questionnaire	Chi square test  Mean

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

#### 4.1 Introduction

This chapter was organized in subsections; first, preliminary matters of instrument return response are addressed. Secondly, the results of data analysis and findings of the study are presented anchored on each specific objective and the corresponding research question. The objective of the study was to examine factors influencing the readiness to adopt open and distance learning in arid and semi-arid areas. The study was based on four independent variables and the dependent variable.

#### 4.2 Questionnaires Return Rate

Questionnaire return rate is the proportion of the sample that participated as intended in all the research procedures. Table 4.1 shows respondents grouped into three groups of lecturers, nutrition and nursing students.

**Table 4.1 Questionnaire Return Rate**

	<b>Questionnaire issued</b>	<b>Questionnaire returned</b>	<b>Percent</b>
Student	60	60	100%
Lecturer	12	12	100%
<b>Total</b>	<b>72</b>	<b>72</b>	<b>100%</b>

Mugenda and Mugenda (2009) notes that if half (50% ) of issued questionnaires are returned, they are adequate for analysis and reporting, while above 70% is considered excellent. In this study, 72 questionnaires issued to the respondents were completed and received giving a respondents' return rate of 100%. This was therefore an excellent response rate.

#### 4.3 Demographic Characteristics of respondents

This section presented the demographic characteristics of the respondents: age, gender and marital status.

### 4.3.1 Distribution of respondents by age

Table 4.2 shows the distribution of respondents by age.

**Table 4.2 Distribution of respondents by age**

<b>Age in years</b>	<b>(18-19)</b>	<b>(20-29)</b>	<b>(30-39)</b>	<b>(40-49)</b>	<b>(50-59)</b>	<b>Total</b>
<b>N</b>	1	49	6	2	2	<b>60</b>
<b>%</b>	1	82	10	4	3	<b>100</b>

From findings in Table 4.2, majority of the respondents (82%) were aged between 20 to 29 years, 10% aged between 30 to 39 years, 4% aged between 40 to 49 years, 3% aged between 50 to 59 years and the least (1%) aged between 18 to 19 years. The findings agrees with Boston, Ice and Gibson (2011), who indicated that older undergraduates participated in distance education programmes relatively more often than their younger counterparts. The findings were also similar to a survey conducted in Worcester Polytechnic Institute in United State of America (USA) that indicated that the 73 % of class based potential graduate were under of 35 years contrary to 58% of students in distance learning student (Worcester Polytechnic Institute (WPI), 2007). It implies lack of commitments such as family responsibilities seems to be motivating majority (82%) of the respondents at a younger age (20-29) to enrol in the campus based learning over distance education, immediately after secondary school.

### 4.3.2 Distribution of respondents by Gender

Table 4.3 shows distribution of respondents by gender

**Table 4.3 Distribution of respondents by gender**

<b>Category</b>	<b>N</b>	<b>%</b>
Female	29	49%
Male	31	51%
<b>Total</b>	<b>60</b>	<b>100%</b>

From findings in Table 4.3, there was a near equal distribution of respondents across gender. 51% of the respondents were male, while 49% of the respondents were female. These findings seemed to address and support a report by United Nations (2016) which revealed its

intentions of safeguarding comprehensive and justifiable educational prospects for all people at all the time. However they seemed to contradict a report by Peebles (2014), on Gender Analysis in the Caribbean which revealed that the access of female to open and distance learning outstripped men. This seemed to imply that female were equally seeking opportunities of higher education as men in spite of the commitments that were likely to keep them from learning opportunities, such as child bearing, housewife and being a home maker. This implied that female seemed to find time to participate in face to face equally as their male counterparts hence reduce gender disparities with regard educational access.

### 4.3.3 Distribution of respondents by marital status

Table 4.4 shows distribution of respondents by marital status

**Table 4.4 Distribution of respondents by marital status**

Category	N	%
Single	44	74%
Married	12	26%
<b>Total</b>	<b>60</b>	<b>100%</b>

From the findings in Table 4.4, majority (74%) of the respondents were single while only 26% were married. This study seemed to agree with Osei (2012) who noted that distance learning is most utilized by married student population.

The study's findings seemed to suggest that majority (74%) of the respondents do not have family responsibilities that might have interfered with them seeking higher education. Besides majority (82%) of the respondents were between 20-29 years. Hence this implied that other types of motivations should be provided to influence the respondents' readiness to adopt open and distance learning.

### 4.4 Access to Technology

The study sought to find out whether the respondents had access to technology. This was divided into access to technological gadgets, knowledge and skills in information and technology, mode of access to technology and other locations of access to internet.

#### 4.4.1 Access to technological gadgets

The study findings on access to technological gadgets by the respondents are in Table 4.5.

**Table 4.5 Access to technological gadgets**

<b>Tech. Gadget</b>	<b>YES N</b>	<b>NO N</b>	<b>Yes %</b>	<b>No %</b>	<b>Total (%)</b>
<b>Computer</b>	62	10	86.1%	13.9%	<b>100%</b>
<b>Cell Phone that accesses internet</b>	69	3	95.8%	4.2%	<b>100%</b>
<b>Flash disk</b>	46	26	63.9%	36.1%	<b>100%</b>
<b>Television</b>	56	16	77.8%	22.2%	<b>100%</b>
<b>Radio</b>	56	16	77.8%	22.2%	<b>100%</b>
<b>CD player</b>	42	30	58.3%	41.7%	<b>100%</b>
<b>DVD player</b>	37	35	51.4%	48.6%	<b>100%</b>
<b>Source of Electricity</b>	61	11	84.7%	15.3%	<b>100%</b>
<b>Postal services</b>	45	27	62.5%	37.5%	<b>100%</b>

From the Table 4.5, most of the respondents (95.8%) could access phone that accesses internet followed by access to a computer by 86.1% of the respondents. Access to Television and radio was by 77.8% of the respondents. Flash disks, CD player and DVD player were access by 63.9%,58.3%,51.4% of the respondents respectively.84.7% of the respondents could get access to the source of elcetricity.62.5% of the respondents could access the postal services. As noted by Yusuf (2006), relevant operational communication and technological tools are a pre-requisite of a prosperous distance education program. From the findings, there seemed to be variation in the level of access of the technological gadgets among the respondents. This may seem to suggest the existence of an opportunity for possible two way-communications between lecturers and learners. Therefore, integration of technological tools suitable for the utilization in teaching and learning among lecturers and students at a distance may probably influence the readiness to adopt open and distance learning.

#### 4.4.2 Knowledge and skills in information communication and technology

The study findings on possession of knowledge and skills in communication and technology by the respondents are in Table 4.6.

**Table 4.6 Knowledge and Skills in information communication and technology**

<b>Category</b>	<b>N</b>	<b>%</b>
Yes	68	94%
No	4	6%
<b>Total</b>	<b>72</b>	<b>100%</b>

From the above table (94%) of the respondents were found to possess ICT skills while only 4% of the respondents did not possess ICT skills. Gakuu (2006) notes that a lecturer's knowledge of ICT and particularly its use in Distance Education can facilitate their readiness to adopt distance education. Brodin and Lindstrand (2003) supported Nihuka (2008) in the argument that technological know-how is critical for both the learners and the instructors. From the findings, possession of ICT knowledge and skills by majority (94%) of the respondents from the findings, may facilitate the readiness to adopt open and distance learning by KMTC Lodwar Campus. Gakuu (2006) noted that the gap between the teacher and the learner is bridged by some form of ICT. The instructional materials are transmitted to the learner through the various forms of media i.e. print, electronic, and e-learning. Therefore, a lecturer's knowledge of ICT and particularly its use in DE may seem to facilitate their readiness to adopt distance education.

#### **4.4.3 Mode of access to internet**

The study findings on mode of access to internet by the respondents are in Table 4.7.

**Table 4.7 Mode of access to internet**

<b>CATEGORY</b>	<b>YES</b>	<b>NO</b>	<b>Yes</b>	<b>NO</b>	<b>TOTAL</b>	<b>TOTAL</b>
	<b>N</b>	<b>N</b>	<b>%</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Modem</b>	4	68	6%	94%	72	100%
<b>Phone</b>	7	65	10%	90%	72	100%
<b>Wifi</b>	70	2	97%	3%	72	100%

The findings from Table 4.7 indicated that the mode of access to internet by most of the respondents (97%) was through Wi-Fi, followed by access through phone by 10% of the respondents and mode of access through the modem by 6% of the respondents. As noted by the International Network for the Availability of Scientific Publication (2003), the presence

of inexpensive internet was met by challenges of logging into on the network .For instance in Tanzania, the internet services were availed through phones and modem but learners who possessed unsuitable phones and modems that could not be configured to the available internet (The International Network for the Availability of Scientific Publications [ITFS],2003).From the above findings, it may seem to suggest that KMTC Lodwar Campus have no challenge in accessing the internet hence may facilitate its readiness to adopt open and distance learning.

#### 4.4.4 Other locations of access to internet

Table 4.8 shows the study findings of other locations of access to internet by the respondents.

**Table 4.8 Other locations of access to internet**

CATEGORY	YES	NO	YES	NO	TOTAL	TOTAL
	N	N	%	%	N	%
Home	18	54	25%	75%	72	100%
Workplace	6	66	8%	92%	72	100%
Cyber	59	13	82%	18%	72	100%

From the Table 4.8 other locations where internet could be accessed, most of the respondents (82%) could also access internet from a cyber, 25% of the respondents could also access the internet from home and only 6% of the respondents could also access internet from their work place. This may imply that most of the respondents may be able to utilize distance education technologies flexibly and conveniently irrespective of their location from KMTC Lodwar Campus. However, the respondents may also be inconvenienced due to the fact that most (82%) may access internet from a cyber which is outside the comforts of their homes and work place. This may seems contrary to the benefit of convenience, that distance education purports to offer and hence may seem to influence the readiness to adopt open and distance learning by KMTC Lodwar Campus.

#### 4.5 Availability of distance learning instructional materials

The study sought to find out the availability of distance learning instructional materials. Table 4.9 shows study findings of the respondents on availability of distance learning instructional materials.



**Table 4.9 Availability of distance instructional materials and Readiness to adopt ODL**

CATEGORY	YES	NO	Yes	No	TOTAL	TOTAL
	N	N	%	%	N	%
Printed	4	8	33%	67%	12	100
Electronic	2	10	17%	83%	12	100

Lecturers were asked to respond to the availability of distance learning instructional materials in KMTC Lodwar Campus. 33% of the lecturers responded that printed ODL materials were available while 17% of the lecturers responded that electronic ODL materials were available. The success of distance learning program is tied to the availability of distance learning instructional materials that are enough for the learners and suitable and designed for self-instruction by the learner ( Gbenoba and Opeyemi, 2014).

#### 4.6 Trained distance education facilitators

The study sought to find out if the KMTC Lodwar campus were trained distance education facilitators. Table 4.10 shows the study findings of respondents of the proportion of trained distance education facilitators.

**Table 4.10 Trained distance education facilitators**

CATEGORY	YES	NO	Yes	No	TOTAL	TOTAL
	N	N	%	%	N	%
Trained ODL Facilitators	1	11	8%	92%	12	100

Lecturers were asked to indicate whether they were trained distance education facilitator using a yes or no.92% of respondents indicated as not having been trained as distance education facilitators. Only 8% of the respondents indicated as having been trained as a distance education facilitator. Owusu-Mensah et al., (2015) cited O'Rourke (1993) who emphasized that those in direct contact with learners should have knowledge about how distance education works within the organization, the kinds of requirements and durations needed for distance education course delivery. From the above findings, it may imply that most (8%) of trained distance education facilitators among the lecturer respondents may influence the readiness to adopt open and distance learning by KMTC Lodwar.

#### 4.7 Learner Support Services

The respondents were asked to indicate how frequently they received the learner support services using a 5-point likert scale (Always, Very often, Sometimes, Rarely, Never) with three indicators measuring learner support, tutorial support and counseling support. Table 4.11 shows the study findings of the respondents.

**Table 4.11 Learner Support Services**

<b>Learner support services</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Tutorial Support	60	1.00	5.00	3.0000	1.42615
Counseling Support	60	1.00	5.00	3.4407	1.41752
Administrative support	60	1.00	5.00	3.2000	1.41752

The findings showed that students received the administrative, tutorial and counseling support with little variation among them. However, the findings indicate learner support services were sometimes offered by the institution. It implies that student support has not been given adequate attention by the institution, possibly because the same staffs are engaged in other institutional commitment hence may perhaps not be getting the necessary time to support to learners.

#### 4.8 Hypothesis Testing

The hypotheses were stated in the alternative form and tested at 0.05 level of significance. The results of the hypotheses testing were used to determine the significant level of influence of demographic characteristics, access to technology, availability of distance instructional materials and learner support services and readiness to adopt open and distance learning. The hypotheses included the following;

**H<sub>A1</sub>**: There is a significant influence between learners' demographic characteristics and the readiness to adopt open and distance learning.

**H<sub>A2</sub>**:(a) There is a significant influence between access to technology among students and the readiness to adopt open and distance learning.

**H<sub>A2</sub>(b)** There is a significant influence between access to technology among lecturers and the readiness to adopt open and distance learning.

**H<sub>A3</sub>**: There is a significant influence between availability of distance instructional materials and the readiness to adopt open and distance learning.

**H<sub>A4</sub>**: There is a significant influence between learner support services and the readiness to adopt open and distance learning.

To test the hypotheses the study utilised the Chi Square, binomial and multinomial regression analysis. Each of the hypotheses was tested independently to establish if level of influence was statistically significant. Additionally, p value ( $p < 0.05$ ) indicated that the results were statistically significant and in such a case the alternative hypothesis is not rejected. A p-value ( $p > 0.05$ ) showed that the results were not statistically significant hence the alternative hypothesis is rejected

#### **4.8.1 Influence of demographic characteristics and readiness to adopt open and distance learning**

The first hypothesis sought to establish the influence of learner's demographic characteristics: age gender and marital status on the readiness to adopt open and distance learning. Table 4.12 shows the study findings after Chi Square testing of the hypothesis testing on demographic characteristics of age, gender and marital status and readiness to adopt open and distance learning.

**Table 4.12 Learner’s demographic characteristics on the readiness to adopt open and distance**

<b>Demographic variable</b>	<b>N</b>	<b>Test used</b>	<b>Co-efficient</b>	<b>p-value</b>	<b>Degree of freedom(df)</b>	<b>Confidence interval</b>
Age	60	Chi-square	$X^2=5.363$	p=0.068	2	95%
Gender	60	Chi-square	$X^2=2.584$	p=0.108	1	95%
Marital status	60	Chi-square	$X^2=0.475$	p=0.491	1	95%

**4.8.1.1 Age and readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $x^2 = 5.363$ ), with a degree of freedom (df=1.corresponded to a probability level of p=0.068.This was above the conventionally accepted significance level of 0.05. Hence study findings indicated that there was no significant level of influence of age on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus

**4.8.1.2 Gender and readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $x^2 = 2.584$ ), with a degree of freedom (df=1.corresponded to a probability level of p=0.108.This was above the conventionally accepted significance level of 0.05.Hence the study findings indicated that there was no significant level of influence of gender on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus.

**4.8.1.3 Marital status and readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $x^2 = 0.475$ ), with a degree of freedom (df=1.corresponded to a probability level of p=0.49.This was above the conventionally accepted significance level of 0.05.The study findings showed that there was no significant level of influence of marital status on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus.

#### **4.8.2 Influence of access to technology on the readiness to adopt open and distance learning.**

The second hypothesis sought to establish the influence of access to technology on the readiness to adopt open and distance learning.

##### **4.8.2.1 Student access to technology on the readiness to adopt open and distance learning**

Table 4.13 shows the study findings after Binomial regression analysis of access to technology on readiness to adopt open and distance learning among students.

**Table 4.13 Student access to technology on the readiness to adopt open and distance learning**

<b>Access to technology</b>	<b>Test used</b>	<b>p-value</b>	<b>Confidence interval</b>
	Binomial regression analysis	p=0.03	95%

From the study findings, the chi square statistic ( $\chi^2 = 0.779$ ), with a degree of freedom (df=1) corresponded to a probability level of p=0.38. This was above the conventionally accepted significance level of 0.05. The study findings indicated that there was a significant level of influence of level of access to technology on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus. (p=0.03, CI=95%). An increase in the level of access to technology is associated with an increase in the readiness to adopt open and distance learning.

##### **4.8.2.2 Lecturers' access to technology on the readiness to adopt open and distance learning**

Table 4.14 shows the study findings after multinomial regression analysis of access to technology on readiness to adopt open and distance learning among lecturers.

**Table 4.14 Lecturers access to technology and readiness to adopt open and distance learning**

<b>Access to technology</b>	<b>Test used</b>	<b>p-value</b>	<b>Degree of freedom (df)</b>	<b>Confidence interval</b>
	Multinomial regression analysis	p=0.917	1	95%

The study findings indicated that there was no significant level of influence of access to technology on the readiness to adopt open and distance learning among lecturers in KMTC Lodwar Campus.

#### **4.8.3 Influence of availability of distance education instructional materials on the readiness to adopt open and distance learning**

The third hypothesis sought to establish the influence of availability of distance instructional materials on readiness to adopt open and distance learning.

Table 4.15 shows the chi square test findings of availability of distance education instructional materials on readiness to adopt open and distance learning

**Table 4.15 Availability of distance education instructional materials on readiness to adopt open and distance learning**

<b>Availability of distance instructional materials</b>	<b>N</b>	<b>Test used</b>	<b>Co-efficient</b>	<b>p-value</b>	<b>Degree of freedom(df)</b>
<b>Printed</b>	12	Chi-square	$X^2=2.182$	p=0.14	1
<b>Electronic</b>	12	Chi-square	$X^2=0.218$	p=0.64	1

#### 4.8.3.1 Printed distance instructional materials on the readiness to adopt open distance learning

From the study findings on printed instructional, the chi square statistic ( $\chi^2 = 2.182$ ), with a degree of freedom (df=1) corresponded to a probability level of  $p=0.14$ . This was above the conventionally accepted significance level of 0.05. The study findings indicated there being no significant level of influence of availability or lack of availability of printed distance education instructional materials on readiness to adopt open and distance learning in KMTC Lodwar Campus.

#### 4.8.3.2 Electronic distance instructional materials on the readiness to adopt open distance learning

From the study findings on electronic instructional materials, the chi square statistic ( $\chi^2 = 0.218$ ), with a degree of freedom (df=1) corresponded to a probability level of  $p=0.64$ . This was above the conventionally accepted significance level of 0.05. The study findings indicated there being no significant level of influence of availability or lack of availability of electronic distance education instructional materials on readiness to adopt open and distance learning in KMTC Lodwar Campus.

#### 4.8.4 Influence of learner support services on readiness to adopt open and distance learning

The fourth hypothesis sought to establish the influence of learner support services on the readiness to adopt open and distance learning.

Table 4.16 shows the findings of chi square test of learner support services on readiness to adopt open and distance learning.

**Table 4.16 Learner support services on readiness to adopt open and distance learning**

Learner support services	N	Test used	Co-efficient	p-value	Degree of freedom(df)
Tutorial	60	Chi-square	$\chi^2 = 1.459$	$P=0.834$	4
Counseling	60	Chi-square	$\chi^2 = 4.939$	$p=0.294$	4
Administrative	60	Chi-square	$\chi^2 = 1.329$	$p=0.850$	4

#### **4.8.4.1 Level of tutorial support on readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $\chi^2 = 1.459$ ), with a degree of freedom ( $df=4$ ) corresponded to a probability level of  $p=0.83$ . This was above the conventionally accepted significance level of 0.05. The study findings indicated that there was no significant level of influence of the level of tutorial support on the readiness to adopt open and distance learning in KMTC Lodwar Campus. This seems to suggest students' lack of knowledge on the type of tutorial support needed in open and distance that may perhaps not facilitate their readiness to adopt open and distance education. Students seem to identify with tutorial support they seem to receive for the face to face mode of learning.

#### **4.8.4.2 Level of counseling support on readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $\chi^2 = 4.939$ ), with a degree of freedom ( $df=4$ ) corresponded to a probability level of  $p=0.29$ . This was above the conventionally accepted significance level of 0.05. The findings of the study indicated that there was no significant level of influence of counseling support on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus. Students seem to identify with counseling support they seem to receive the face to face mode of learning.

#### **4.8.4.3 Level of administrative support on readiness to adopt open and distance learning**

From the study findings, the chi square statistic ( $\chi^2 = 1.329$ ), with a degree of freedom ( $df=4$ ) corresponded to a probability level of  $p=0.87$ . This was above the conventionally accepted significance level of 0.05. The findings of the study indicated that there was no significant level of influence of level of administrative support on the readiness to adopt open and distance learning among students in KMTC Lodwar Campus. Students seemed to identify with administrative support they seem to receive for the face to face mode of learning.



## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presented the summary, conclusions, recommendations, and suggestions for further research.

#### **5.2 Summary of the findings**

The study sought to examine factors influencing readiness to adopt open and distance learning in arid and semi-arid areas, a case of KMTC Lodwar Campus. Research question one sought to examine the influence of learner's demographic factors on the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County. The study established that there was a near equal distribution of respondents across gender. 51% of the respondents were male, while 49% of the respondents were female. From the study, majority of the respondents (82%) were aged between 20 to 29 years, 10% aged between 30 to 39 years, 4% aged between 40 to 49 years, 3% aged between 50 to 59 years and the least (1%) aged between 18 to 19 years. From the study, majority (74%) of the respondents were single while only 26% were married.

Research question two aimed to determine the influence of access to technology on the readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County. With regard to the access to the technological gadget, 95.8% had access to a cell phone that access internet, 86.1% had access to a computer, 84.7% has a source of electricity, 77.8% had access radio, while 77.8% had access to television while access to flash disk, postal services CD player, and DVD player as 63.9%, 62.5%, 58.3% and 51.4% respectively. The study revealed that 94% of the respondents possessed the skills and knowledge in information communication and technology, while 6% did not possess the knowledge and skills in information communication and technology. The study further showed that most (97%) of the respondents accessed their internet through a wifi, 10% through their phone while 6% through a modem within Kenya Medical Training College Lodwar Campus. Additionally, 82% of the respondents could access internet from a cyber, 25% from home while 8% could access internet at their work place. However, the study findings showed that there was a significant level of influence of access to technology on the readiness to adopt open and distance learning among students but not among lecturers in KMTC Lodwar Campus.

Research question three sought to determine the influence of availability of distance education instructional materials on readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County. The study findings indicated that there was no significance level of influence of availability or lack of distance education instructional materials on the readiness to adopt open and distance learning in KMTC Lodwar Campus.

Research question four sought to establish the influence of learner support services on readiness to adopt open and distance learning in KMTC Lodwar Campus, Turkana County. The study findings indicated that there was no significance level of influence of learner support services on the readiness to adopt open and distance learning in KMTC Lodwar Campus.

### **5.3 Conclusion of the study**

From the study findings, the following conclusions were made:-

1. There was no significance level of influence of learners' demographic characteristics on readiness to adopt open and distance learning
2. (a) There was a significance level of influence of access to technology among learners on the readiness to adopt open and distance learning.  
(b) There was no significance level of access to technology among lecturers on readiness to adopt on readiness to adopt open and distance learning
3. There was no significance level of availability of distance learning instructional materials on readiness to adopt open and distance learning
4. There was no significance level of learner support services on readiness to adopt open and distance learning

### **5.4 Recommendations of the study**

The study recommends the following:-

1. It seems that face to face teaching is more popular than distance education among potential students possibly because KMTC Lodwar Campus has not implemented its infrastructural development of open and distance education. Hence students seeking enrolment to KMTC straight from secondary schools seem not to have other option of learning mode other than the well-established face to face teaching. This study therefore recommends that policies of open and distance education should be

implemented and awareness created to the potential students. This will facilitate their choice and adoption of the established open and distance learning.

2. Researches have observed that the nature of distance education utilizes technology as a critical component in communication and interaction between the instructor and the learner and among learners. KMTC Lodwar Campus already has accessible technology and technological gadgets among lecturers and learners. This seems to be a great opportunity for it to harness the benefits of technology in education, to achieve the learning objectives. However there seems not to be aware of how the accessible technologies and technological gadgets can be integrated to be utilized by both lecturers and students not only in face to face mode but also in distance education. This study therefore recommends that KMTC administration should equip their lecturers and learners with the technological skills and knowledge used in distance teaching and learning which may facilitate their readiness to adopt open and distance learning.
3. Open and distance education places new demands on instructors and the institutional systems. The study therefore suggests development of policies associated with staff development programs on administration, operations and relevant resources needed for distance teaching and learning program. This may equip and facilitate lecturers' readiness to adopt open and distance learning as trained distance education facilitators.
4. The study recommends training of lecturers on the nature of the distance learning instructional materials among lecturers and development of policies on how to acquire them based on the accessible technology .This may facilitate the lecturers' readiness to adopt open and distance education.

### **5.5 Suggestions of further research**

The study suggests the following:

- i. A further research to be conducted to determine the specific needs of KMTC Lodwar campus learners that will possibly guide the formulation learner support services policies, which once implemented may possibly ensure delivery of relevant learner support services designed to support learners' self-direction and interaction.

- ii. The study mainly focused on availability of distance learning materials, learner support services, access to technologies and learner support services only. A further research on other variables that affect readiness to adopt open and distance learning in arid and semi-arid areas should be conducted.
- iii. A further research to identify the emerging trends in the motivation as a factor determining the readiness to adopt open and distance learning among young adults aged 20-29 years.
- iv. The study was done in Kenya Medical Training College, Lodwar Campus that is located in Turkana County. Similar studies should be replicated in other constituent Kenya Medical Training Colleges especially those located in the Arid and Semi-Arid areas in Kenya.

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## **APPENDICES**

### **Appendix i: Introduction Letter**

**SIMIYU MARY NEKESA,  
UNIVERSITY OF NAIROBI,  
SCHOOL OF CONTINUING AND DISTANCE EDUCATION,  
DEPARTMENT OF DISTANCE EDUCATION,  
P.O. BOX 30197 – 00100,  
NAIROBI.**

**Dear Respondent,**

I am a student pursuing a Master's Degree in Distance Education at the University of Nairobi. I am expected to carry out an academic research study in partial fulfilment of the requirements for the award of the Master's Degree in Distance Education.

The purpose of this letter is to kindly request for your time to respond to this research questionnaire that seeks to determine Factors Influencing the Readiness to Adopt Open and Distance Learning in Kenya Medical Training College, Lodwar Campus, Turkana County. The information obtained will be treated privately and confidentially for the purposes of this study alone. Your ability to answer all the questions to the best of your knowledge will be highly appreciated.

Thank you for your cooperation

Yours sincerely,

**MARY NEKESA SIMIYU**

## Appendix ii: Questionnaire for Students

### **QUESTIONNAIRE FOR STUDENTS**

This study seeks to establish The Factors Influencing Readiness to Adopt Open and Distance Education in KMTC Lodwar Campus.

#### **Instructions**

- Please respond to the items given in this questionnaire as honestly and accurately as possible.
- All your responses will be treated as confidential and will be used for research purposes only.
- Please read each statement carefully and tick (✓) the answer appropriately in the brackets spaces.
- Kindly do not indicate your NAME

#### **SECTION A: DEMOGRAPHIC FACTORS.**

1. Indicate your Gender: [  ] Female [  ] Male
2. Indicate your Age: [  ]18-19 [  ]20-29 [  ]30-39 [  ]40-49[  ]50-59[  ]> 60 years
3. Marital status [  ]Single [  ]Married [  ]Divorced

#### **SECTION B:**

#### **TECHNOLOGY**

1. Please indicate **Yes** or **No** if you have access to any of the following.

<b>Access to technology gadgets</b>	<b>Yes</b>	<b>No</b>
Computer		
Cell Phone that accesses internet		
Flash disk		
Television		
Radio		
CD player		
DVD player		
Source of Electricity		
Postal services		

1. Do you have Knowledge and skills in information communication and technology (ICT .)?

Yes [ ] No [ ]

2. KMTC Lodwar Campus has internet connectivity [ ]Yes [ ]No

3. If yes to 2 above how do you get connected to the internet in KMTC Lodwar Campus?

[ ] Through modem [ ] Through phone [ ] Through WIFI

4. Where else can you access internet from apart from KMTC Lodwar Campus?

[ ] Home [ ] Work place [ ] Cyber Café

**SECTION C: LEARNER SUPPORT SERVICES**

Please read and tick [√] appropriately how frequently does KMTC Lodwar Campus provides you with tutorial, counselling and administrative support.

<b>TUTORIAL SUPPORT</b> :Students should be provided with information about fees and available courses, advice on right course choice, time management and study skills, advice on time management and study skills, advocating for your needs, arranging for your transport, clarifying concept or instruction, commenting on and grading assignment					
<b>How Frequently Do You Receive Tutorial Support?</b>	<b>Always</b>	<b>Very often</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>

**COUNSELLING SUPPORT:** student to be counseled on how to apply for a course, financial assistance and how to apply it, how to cope with unfamiliar technologies, how to study, how to manage time, how to revise for exams, how to overcome exam anxiety, how to plan for a new career, how to manage family challenges, and spiritual nourishment.

<b>How Frequently</b>	<b>Always</b>	<b>Very often</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>
<b>Do You Receive</b>					
<b>Counseling</b>					
<b>Support?</b>					

**ADMINISTRATIVE SUPPORT:** Student should have complete course materials dispatched timely, have information on when course begins, have information about tutor and their contacts, have information on who to contact in emergency, have information on the tutorials venue, have information on when to submit assignments, have information on available services e.g. library, have timely feedback and have the right examination dispatched at right venue and time.

<b>How Frequently</b>	<b>Always</b>	<b>Very often</b>	<b>sometimes</b>	<b>Rarely</b>	<b>Never</b>
<b>Do You Receive</b>					
<b>Administrative</b>					
<b>Support?</b>					

**Thank you for taking your time to respond to this questionnaire**

### Appendix iii: Questionnaire for Lectures

#### INSTRUCTIONS

- Please respond to the items given in this questionnaire as honestly and accurately as possible.
- All your responses will be treated as confidential and will be used for research purposes only.
- Please read each statement carefully and tick (✓) the answer appropriately in the brackets spaces.

#### SECTION A:

##### DEMOGRAPHIC FACTORS

1. Indicate your Gender: [ ] Female [ ] Male
2. Indicate your Age: [ ] 18-19 [ ] 20-29 [ ] 30-39 [ ] 40-49 [ ] 50-59 [ ] > 60 years
3. Marital status [ ] Single [ ] Married [ ] Divorced

#### SECTION B:

##### TECHNOLOGY

1. Please indicate **Yes** or **No** if you have access to any of the following.

Access to technology gadgets	Yes	No
Computer		
Cell Phone that accesses internet		
Flash disk		
Television		
Radio		
CD player		
DVD player		
Electricity		
Postal services		

2. Do you have Knowledge and skills in information communication and technology (ICT .)?

Yes [ ] No [ ]

3. Where do you access internet from?

[ ] Home [ ] Work place [ ] Cyber Café [ ] School

## SECTION C

### OPEN AND DISTANCE LEARNING MATERIALS (ODL).

Please read the following literature then answer the following questions.

**Open and Distance Learning materials should have the following characteristics:-**

Materials divided into study units, representing time required for the unit.

They should include a study guide on how to use the materials and how to study by student. Should include study tips such as on note-taking. It should have examples, diagrams, pictures and numerous learning activities. Provide feedback on answers and activities. Address the learner directly as 'you'. Have a generous layout, often including space for learners to write in. .Provides learning objectives and attempt to meet all the needs of the learner. Tests of prior knowledge. Gives advance outlines. Provides self-tests, gives summaries and lists of key points. Electronic distance learning materials should include animations and hypertext links.

***Hypertext link*** - text or images on a Web page that, when clicked with a mouse, cause your browser to load another webpage. Because a simple mouse click allows the user to easily go from one page of hypertext to another, these pages are said to be "hyperlinked." Text links are usually (but not always) underlined in blue, while hyperlinks that are images often take the form of "buttons.")

Source: Commonwealth of Learning ,(2005)

1.Do you have printed distance learning materials?

Yes [ ] No [ ]

2.Do you have electronic distance learning materials?

Yes [ ] No [ ]

3.Are you a trained distance education facilitator?

Yes [ ] No [ ]

**Thank you for taking your time to respond to this questionnaire**



## Appendix iv: Research Authorization



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No. **NACOSTI/P/16/39459/14795**

Date:

**16<sup>th</sup> November, 2016**


Mary Nekesa Simiyu  
University of Nairobi  
P.O. Box 30197-00100  
**NAIROBI.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on "*Factors influencing the readiness to adopt open and distance learning in Kenya Medical Training College, Turkana County, Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Turkana County** for the period ending **16<sup>th</sup> November, 2017.**

You are advised to report to **the Principal, Kenya Medical Training College, the County Commissioner and the County Director of Education, Turkana County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.



**DR. M. K. RUGUTT, PhD, HSC.**  
**DIRECTOR-GENERAL/CEO**

Copy to:

The Principal  
Kenya Medical Training College.

The County Commissioner  
Turkana County.

*National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified*

## Appendix v: Research Permit

THIS IS TO CERTIFY THAT: **MISS, MARY NEKESA SIMIYU** of **UNIVERSITY OF NAIROBI, 0-30500** **LODWAR**, has been permitted to conduct research in **Turkana County** on the topic: **FACTORS INFLUENCING THE READINESS TO ADOPT OPEN AND DISTANCE LEARNING IN KENYA MEDICAL TRAINING COLLEGE, TURKANA COUNTY, KENYA** for the period ending: **16th November, 2017**

Permit No : **NACOSTI/P/16/39459/14795**  
Date Of Issue : **16th November, 2016**  
Fee Recieved : **Ksh 1000**



*Mary Nekesa Simiyu*  
**Applicant's Signature**

*Musalia M. Mwangi*  
**Director General**  
**National Commission for Science, Technology & Innovation**

**Appendix vi: Ministry of Education Research Authorization**



**REPUBLIC OF KENYA  
MINISTRY OF EDUCATION  
STATE DEPARTMENT OF BASIC EDUCATION.**

Telegram 'ELIMU', Lodwar  
Telephone 'Lodwar' 054 21076  
Fax/No: 054 21076  
Email: cdeturkana@education.go.ke  
When replying please quote

**REF: TUR/CDE/CIR/17/VOL.1/50**

TURKANA COUNTY EDUCATION OFFICE,  
P.O. BOX 16- 30500,  
LODWAR.

**22/11/2016**

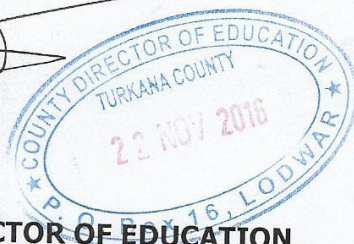
**MARY NEKESA SIMIYU  
UNIVERSITY OF NAIROBI  
P.O BOX  
NAIROBI.**

**RE: RESEARCH AUTHORIZATION.**

Following your application dated 22<sup>nd</sup> **November 2016**, you are hereby authorized to carry out research on "***Factors influencing the readiness to adopt open and distance learning in Kenya medical training college, Turkana County, Kenya.***"

Am pleased to inform you that you are permitted to undertake your research in **Turkana County** for a period ending **16<sup>th</sup> November 2017.**

**SIFUNA N. M  
COUNTY DIRECTOR OF EDUCATION  
TURKANA COUNTY.**



**Appendix vii: County Commissioner; Research Authorization**



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

Telegraphic address: COUNTY COMMISSIONER" LODWAR"

Telephone: LODWAR 21240

Telex:

Fax:

When replying please quote

CC.CONF.ED.12/1/VOL.I/(193)

Ref No. ....  
and date

**COUNTY COMMISSIONER'S OFFICE**  
**TURKANA COUNTY**  
**P.O. BOX 1 – 30500**  
**LODWAR**

22<sup>nd</sup> November, 2016.  
.....

Deputy County Commissioner,  
**TURKANA CENTRAL SUB-COUNTY.**

**RE: RESEARCH AUTHORIZATION: MARY NEKESA SIMIYU**

The above mentioned who is from University of Nairobi, is authorized to carry out research on "*Factors influencing the readiness to adopt open and distance learning in Kenya Medical Training College, Turkana County, Kenya*". The research period ends on 16<sup>th</sup> November, 2017.

Any assistance accorded to her will be appreciated.

**A. M. KIMANZI,**  
**For: COUNTY COMMISSIONER,**  
**TURKANA COUNTY.**

**C.C. The County Director of Education,**  
**TURKANA COUNTY.**

The Principal,  
Kenya Medical Training College,  
**LODWAR.**

**Mary Nekesa Simiyu**

## Appendix viii: Permission to Carry out Research in Lodwar KMTC

Telegrams: "MEDTRAIN" Nairobi  
TELEPHONE: NAIROBI 2725191, 2725711/14  
Fax: 2722907 Email: [info@kmtc.ac.ke](mailto:info@kmtc.ac.ke)

Please address all correspondence to:  
The Director

When replying please quote

KMTC/ ADM/74/VOL.III

Ref: No. ....



KENYA MEDICAL TRAINING COLLEGE  
P.O BOX 30195-00100  
NAIROBI

20<sup>th</sup> February, 2017

Date.....

Mary Nekesa Simiyu  
Lodwar KMTC  
P O Box 126  
LODWAR

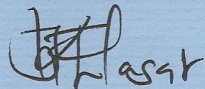
### PERMISSION TO CARRY OUT RESEARCH IN LODWAR KMTC

We acknowledge with thanks the receipt of your letter dated 9<sup>th</sup> December, 2016 forwarding your research proposal titled "*Factors Influencing the Readiness to Adopt Open Distance Learning in KMTC Lodwar Campus, Turkana County Kenya.*" The proposal has been reviewed and the College Research and Ethics Review Committee (CRERC) has not found any ethical issues in this study. We therefore wish to inform you that your request to carry out the research has been granted.

Please note that you are required to present yourself to the Principal to facilitate your access to the students of interest.

Further, note that on completion of the study, you are expected to submit one (1) hard and soft copy of the research report to the Director's office.

Best wishes.



Eglah K. Kiplagat  
FOR: DIRECTOR/CEO