# ADOPTION OF E-LEARNING BY STUDENTS OF UNIVERSITY OF NAIROBI

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA), SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

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## DECLARATION

I, the undersigned, hereby declare that this research project is my own original work and has not been presented for a degree in any university.

Signature:..... Date:.....

**KIPKIRUI SIELE WESLEY**

**D61/70316/2008**

This project report has been submitted for examination with my approval as the university supervisor.

Signature:..... Date:.....

**DR. KATE LITONDO**

## ACKNOWLEDGEMENTS

Am greatly indebted to the support, guidance and patience given by my supervisor Dr. Kate Litondo in the research orientation and guiding me through the project.

I thank God for being the provider of knowledge and enabling me complete this degree. To all the lecturers in the school of business who imparted great knowledge and to all my colleagues in the MBA class. I am grateful for your role in my life. I am grateful to all my respondents of the questionnaire for providing me with useful information.

I also acknowledge to all people who influenced me to successfully complete this study.

May God bless you abundantly.

## DEDICATION

I dedicate this study to my parents for the far they have brought me.

My wife Mercy, sons Trevor and Albert, daughter Sharleen my fellow students, and friends. Without their love, support and encouragement my study would not have been achievable.

## ABSTRACT

Many universities implement e-learning for many reasons. A number of e-learning opportunities provided by higher education especially universities in Kenya continue to grow. Little research has been done to verify how university students adopt to the e-learning system.

This study sought to investigate adoption of e-learning by students of the University of Nairobi. E-learning (electronic learning) involves use of electronic media (the internet, DVD, CD-ROM, Video tape, television, cell phones etc) for teaching and learning at a distance. The objective of this study was to establish the extent to which e-learning system is being used by students of the University of Nairobi, challenges they experience and e-readiness factors that affect the usage of the university portal. This paper includes a model that has been developed to assess adoption by students of the University of Nairobi. Questionnaires drawn on a five point likert type scale were used to collect data. A sample of 100 students were administered. Descriptive and inferential statistics were used to analyze the data consisting of frequencies and percentages. Majority of the students were e-ready for adoption though majority have not been trained on the usage of the portal. In conclusion, infrastructure has to be improved to gather for the big population of the students and the university administration should put more emphasis and conduct more training on e-learning.

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| IT | Information Technology |
| ICT | Information Communication Technology |
| AVV | African Virtual University |
| O DEL | Open and Distance E-learning |
| CESS | College of Education and External Studies |
| UoN | University of Nairobi |
| VTC | Video Teleconferencing |
| HEIs | Higher Education Institutions |

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background

Information systems as defined by Laudon and Laudon (2006) are a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization. Information systems contain information about significant people, places and things within the organization or in the environment surrounding it. By information we mean data that has been shaped into a form that is meaningful and useful to human beings. Three activities in an information system produce the information that organizations need to make decisions, control operations, analyze problems and create new products or services. These are input which captures raw data from within the organization or from its external environment. Processing converts raw input into a more meaningful form. Output transfers the processed information to the people who will use it to the activities for which it will be used. It also requires feedback which is output that is returned to appropriate members of the organization to help them evaluate or correct the input stage. Information system has three dimensions, organizations management and information technology (IT).

E-enablement doing business electronically has been a fundamental use of computers since the 1950s but now the internet has become a hub for conducting business e-enabling is integrating the internet into how they work. E-business has a broad connotation of doing business electronically. It has much to do with building e-enabled relationships with consumers and other enterprises. Knowledge sharing and knowledge management one aspect of this is the transfer of knowledge between people (sharing), because the most important asset in enterprises is the people and the knowledge they possess. The process of managing IT in organizations is becoming increasingly complex as it become more important.

Since the 1990's it has become increasingly clear that we are living in an information age. Our societies are becoming knowledge based. The biggest growth in the internet, and

the area that will prove to be one of the biggest agents of change, will be e-learning (Rosenberg, 2001).

### 1.1.1 E-learning

E-learning (electronic learning) involves use of electronic media (the internet, DVD, CD-ROM, video tape, television, cell phones etc) for teaching and learning at a distance (Engelbrecht, 2005). E-learning refers to the methods of learning which uses electronic instructional content delivered via the internet and is a term which is synonymous with web based or online learning (Trombley and Lee, 2002). In this age of globalization, knowledge acquisition has become critical means of gaining competitive advantage and learning has become a crucial element of knowledge acquisition, application and creation (Longworth and Davis, 1996). Furthermore, e-learning is an inclusive term that describes educational technology that electronically supports learning and teaching. Bernard Luskin is the pioneer of E-learning. E-learning is carried out in different ways, which is why writers speak about different models of e-learning. However, models of e-learning do not differ only according to the method of implementation, efficiency and effectiveness of education, but also on the economic effects. Portals are widely adopted in e-learning.

E-learning is considered as the appropriate tool for just in time accessible and ubiquitous approach to providing learning at a lower cost in developing countries. The way in which e-learning systems and traditional system of education is conducted are quite different. The interaction is not combined to a regular day time activities and can take place in a variety of locations. Including homes, schools, libraries internet cafes and open fields. Therefore a modern day classroom is now seen as a virtual learning environment in which learning is no longer bounded by space, time and geographical location (Franklin and Peat, 2001; Brown, 2004; Liaw, 2008). The integration of modern ICT technology signifies a paradigm shift in teaching, and its true implementing technology may be a catalyst but its effective use requires a paradigm shift from teaching to learning. This requires adequate training in technology as well as technical support (Rogers and Donna, 2003).

E-learning readiness according to English Oxford Dictionary means a state of being ready or prepared, as for use or action. E-learning readiness can be defined as the state of being prepared or ready to roll out e-learning program.

### 1.1.2 E-Learning Portal of the University of Nairobi

E-Learning portal features are an open source web based system and is referred to as Claroline. It is also calledmoodle, blackboard and is composed of several tools.

**Agenda tool**

With the tool lecturers can provide information to the students about schedule events linked to their course.

**The documents and links tool**

This provides a comprehensive mechanism for organizing files and links that a teacher would like to make available to the students. It is possible to make directories and to have directories within directories to enable grouping of files.

**Course description settings tool**

This allows the tutor to describe different aspects of the course to students. One can create a general description give details on the qualifications and goals, course content, teaching-training activities, support, human and physical resources or methods of evaluation.

**The announcement tool**

With this the lecturer can display current information to the students and draw their attention to it, the lecturer can for example remind an approaching dateline, point out new documents online, or communicate about an interesting conference.

**The learning path tool**

The learning path tool allows one to create a complete sequence of learning steps or activities that a learner can follow. Students to read some documents, pass exercises or follow any learning activity that you created yourself in a determined sequence (called, learning path).For more efficiency, you can structure your learning path in “chapters” or

weeks" for example. You can also decide that a step has to be passed by the learners before starting the next one.

**The Forum Tool**

The forums tool allows people to post ideas, opinions, and information in an organized way about the course. Post: a post is a piece of information submitted by a single user. Topic: a topic is a collection of posts. The posts are organized in a chronological order. The idea of a topic is that there is single post that contains the topic of discussion. Forum; a forum is container for topics. Forums often have a general subject that the topics within are about.

**The group tool**

This tool allows course managers to compose sub groups of students from all of the students enrolled in the course. Each group gets its own space and tools reserved for its sub selection. You can create several groups in your course and determine how many members it will include. Each student can be added to a group.

**The users tool**

This is the section where you can control who is registered on current course. If you are logged as professor of the course, you can add students. When this tool is visible for the students, it is there just to let them see who is also registered in the course.

**The chat tool**

It's a tool for online chatting. Simple user can just write lines. Chat manager can reset and store the chat (http://learning.uonbi.ac.ke).

**Conclusion**

The system is very simple, user-friendly. Needs basic computer knowledge. Accommodate both text and media feels. Accessible anywhere, anytime on world wide web( www). Integration with HR and student management systems in progress

### 1.1.3 E-learning System at the University of Nairobi

University of Nairobi is a world class committed to scholarly excellence (www.uonbi.ac.ke) is one of the public universities in Kenya. The University of Nairobi is the oldest university. The university offers three (3) modules: module I, regular students; modules II, evening classes or part-time; modules III, distance learning. The university has six (6) colleges that are dispersed; each offering diverse courses majority of which are conducted using face to face method. Each of the colleges has a computing infrastructure consisting of fibre network and wireless network connections that enable the institution to carry out its obligations effectively and efficiently. It has also significantly fostered the development of online communication between staff students and other stakeholders. The university has embraced the use of Information Communication and Technology (ICT) in learning, teaching, research and in providing administrative services. It realized the strategic importance of ICT, and created a fully-fledged ICT function, the ICT centre (ICTC) in 2002. The centre's main objective is to maximize students and staff productivity and service delivery, enhance teaching and learning, and improve quality research through ICT (University of Nairobi, UoN Strategic Plan, 2008-2013).

The university has collaborated with African Virtual University (AVU) to set up open distance and e-learning (ODeL) Centre at College of Education and External Studies (CEES). This has propelled the university to the information age. The e-learning centre at the UoN has been involved in developing e-contents and training staff on e-content development. Currently over 400 academic staff have been trained on e-content development.

The e-learning at the university has the following five modes support mode which is aimed at increasing accuracy, and enhancing presentation of work. Exploration and control mode, this enables students to expose, examine and experiment with the build in situations, the tutorial mode, this is where the information is presented at an appropriate level and pace giving learners feedback on progress. The resource mode is used to access

information and other resources. The link mode for communication between individuals students instructors like email, net meetings and video conferencing (Omwenja, 2003).

University administration to ensure that students from all years of study are accorded similar access to learning facilities in the university to avoid bias in computer usage among the students from various years of study (Odhiambo, 2010).E-learning initiatives at the University of Nairobi are likely to succeed if certain fundamental issues are addressed. These factors include provision of more computers, ensuring more connection of lecturers and training more staff into e-learning skills (Mugenda et al, 2006).

### 1.2 Statement of the Problem

Despite the effort by university of Nairobi to integrate e-learning into its teaching and learning, it has not been effectively embraced, it's faced with challenges such as understanding and change of attitude and training are still prevalent (Omwenga, Waema and Wagacha, 2004). The persistence of these challenges and lack of knowledge about use of ICT in education hinders readiness and utilization of e-learning. Secondly, there is high demand for education in Kenya yet the resources are very limited, e-learning can help bridge this gap. There has also been rapid growth and investment in ICT, therefore lectures should be ready to use e-learning as, it is likely to become a mode of teaching in the near future (Barron, 1999).

In order to benefit from e-learning, institutions of higher learning should conduct considerable upfront analysis to assess their e-learning readiness. Numerous models that have been developed, however, they are used in developed countries whose e-readiness is high hence not applicable to developing countries.

Technological readiness is the most important factor followed by culture readiness in e-learning readiness (Oketch, 2013). Ojwang (2012) in his study to investigate the status of e-learning readiness in public secondary schools in Kisumu commended consistent students and teachers exposure to e-learning devises to increase their level of e-learning readiness by increasing computers contact hours including weekends and further

investment in ICT infrastructure by the school. Furthermore, the frequent power outage that hinders e-learning readiness in various schools can also be reduced if the schools invest more on power backup systems and alternative sources.

Hadullo (2010) states that e-learning awareness and its benefits were the most important factors influencing adoption, while content quality, instructor influence, e-learning and computer training plus other technology use form the other adoption factors for e-learning students while internet access instructor and fellow students influence were instrumental for adoption by non e-learning students. He further states that a relationship between investment in IT infrastructure and attitude change among students and stakeholders need to be established.

Muganda (2006) in his study on e-learning implementation at the University of Nairobi found out that factors that determine e-learning readiness were: provisions of more computers and internet availability, training of lecturers on e-learning. Mogikoyo (2009) research on video teleconferencing (VTC) adoption in higher education in Kenya, gave insight to academic institutions on the advantages of VTC impact on education.

### 1.3 Research Objectives

The general objective is to evaluate the e-learning system of the University of Nairobi specifically:

a) To establish the extent to which the e-learning system is being used by the students of the University of Nairobi.
b) To determine problems students experience while using the system.
c) To establish the e-readiness factors that affect the usage of e-learning portal.

### 1.4 Value of the Study

E-learning being an important tool in every institution of learning, this study will be of great importance to various stakeholders. Among them that will find this study important are all institutions of learning, employees, the government, educationists, academicians and students.

Open and distance learning provides education to people anywhere and anytime of the learners convenience is the way to go as a strategy for building capacity in the working people for the fulfilment of the vision 2030.

The report will be of great value to instructors and administrators of the institution. It will help to harness the benefits of e-learning by coping the huge number of learners transiting from secondary schools to universities because of the high enrolment of students currently being experienced because of the 8-4-4 system of education. This study aims at making contribution to knowledge on e-learning. The academic fraternity researchers and students will find this research important in helping them understand e-learning system and in effect it will open up research and study opportunities.

# CHAPTER TWO
# LITERATURE REVIEW

## 2.1 Electronic Learning

Many individuals today are in real pursuit of literacy. This is characteristic of students in higher institutions of learning. University students are in great pursuit of information; they are willing to learn new things, ideas, technologies and also learn new ways of acquiring information. Information and communication technology and its use have impacted the way learners and educators acquire and deliver information (Eke, 2009). These technologies have been applied in so many ways in the learning pursuit. They come in electronic formats which are learning via electronic means for learners.

According to Chambers (in Rosenberg, 2001), "the biggest growth in the internet, and the area that will prove to be one of the biggest agents of change, will be in e-learning." The demand for a well-educated workforce has driven many countries to rethink their education systems. An education system has to be suited to the demands of the technological age so that a competitive edge can be maintained. Such demand for a technology savvy workforce is reflected in Alvin Toffler's declaration (in Rosenberg, 2001; 3), that the illiterate of the 21st century will not be those, who cannot read and write but those who cannot learn, unlearn, and relearn. An ancient proverb says, if we don't change our direction, we will end up exactly where we are headed (in Rosenberg 2001:41). This indicates that learning institutions will have to constantly change and adapt in their environments if they are not to lag behind.

According to Galagan (2002) classrooms could not possibly work today, but centuries ago, they made sense. One literate person reaching to the illiterate from what might have been the town's only book, but technology and times have changed. The advantages that technology provides to training and learning include not only the possibility of one-on-one interaction for every learner, the ability to simulate new ideas, the chance to try things out at one's own pace and to fail in private without the fear of ridicule from other students. The internet has also become an important instructional tool to facilitate the transfer of many types of information from one computer to another and is rapidly

becoming an effective means of communication in schools and colleges. Internet based instruction has been manifested in one to one (tutor-to-student), one to many (tutor-to-group) and many to many (group-to-group) approach to instructions. The form of communication may be asynchronous, where there may be a time delay between the communicators when sending, receiving and replying to any given communicative even or synchronous with all parties communicating within the same time frame (Webb et al, 2004).

**2.2 E-learning in Institutions of Learning**

The tremendous advancement in technological developments in computer applications has culminated in a new concept of teaching learning and research. Higher education institutions (HEIs) have realized the need to be relevant in information and communication technology (ICT). Advantages such as asynchronous training, training at individual pace, just in time training, and cost effectiveness lure organizations to e-learning (Powell, 2000). Kenyan university have implemented e-learning made possible by the availability of networks and connections to the internet in the institutions. Kariuki (2006) states that if websites analysis is something to go by it is justifiable to conclude that in Kenya, institutions are a distance way from reaping the benefits from e-learning. Gachau (2003) and Omwenga (2003) research on factors that determine e-learning and identified the following variables: computer and internet availability, computer literacy, motivation of users, management support, and e-learning culture in the institutions. Later

Hadullo (2010) in his study on e-learning acceptance in Kenyan universities concluded that e-learning awareness and its benefits were the most important factors to influence adoption. Content quality, instructor influence, e-learning and computer training plus other technology use formed the other adoption factors of e-learning students while internet access, instructor and fellow student influence were instrumental for adoption by non E-learning students. E-learning instructors showed that, training, institutional support, rewards, incentives and recognition influence their adoption while other factors like training, other technology use, e-learning benefits and triability were also crucial.

The most important factors for e-learning techniques were training, triability, rewards and recognition and institutional support.

Kenya recognizes that the education and training of all Kenyans is fundamental to the success of the vision 2030. Education equips citizens with understanding and knowledge that enables them to make informed choices about their lives and those facing Kenyan society. The education sector will, therefore, provide the skills that will be required to steer Kenyans to the economic and social goals of vision 2030 (Vision, 2030).

### 2.2.1 Challenges E-Learning

There are many aspects of socio-economic and technological environment that needs to be explicitly addressed during implementation of e-learning. These include connectivity (low bandwidth) and accessibility, inadequate telecommunications infrastructure and lack of reliable power supply. Implementation has not been given much priority in Kenyan universities. The study shows that Kenyan universities are making much progress though attitude of academic staff should be improved and the staff receive more training so that their personal capability in using e-learning improves. The university administration also needs to improve the existing infrastructure and technology related to e-learning (Muriuki, 2011).

A significant majority of the students to ICT and the internet are much higher than previously thought. A significant majority of the students expressed the desire to have more e-learning introduced in their courses and strongly agreed that e-learning makes studying easier and enjoyable to them (Muindi, 2008). However, Wamae (2011) argues that needs of an e-learning environment suggests viability of a multi stakeholder networks to share the expertise and resolve issues related to training needs. Collaboration networks that include e-learning sponsors, policy makers, telecommunication networks service providers and educators are required to solve the problems of online education in Africa. (Gunga et al, 2006).

Consistent students and teachers exposure to e-learning devices increase their level of e-learning readiness by increasing computer contact hours including weekends and further

investments in ICT infrastructure by the school. Frequent power outage that hinders e-learning readiness in various schools can also be reduced if schools invest more on power backup systems and alternative power sources (Otieno, 2012).

The findings of the study showed that implementation of e-learning have not been given much priority in Kenyan universities. The study showed that Kenyan universities are making much progress though attitude of academic staff should be improved and the staff receives more training so that their personal capability in using e-learning improves. The university administration also needs to improve the existing infrastructure and technology related to e-learning (Wamae, 2011).

E-learning has helped many nations generate, disseminate and expand internet based learning among citizens for the benefit of society and the economy. While faced with the challenge caused by many years of wars and conflicts, Afghanistan is harnessing e-learning techniques to expand education and training opportunities in the face of lack of infrastructure and very low literacy levels (Egejo et al, 2009). Results indicate an overwhelming majority having a positive perception of country e-learning readiness.

### 2.2.2Determinants of E-Learning

Mutoro (2013) in his paper designing instructions for distance learning in the 21st century, modern technology of e-learning on which mode at a distance will be more affordable and effective of instructions for distance learning will be determined by evaluation, assessment, 44 UoN-ISO 9001:2008 certified and feedback procedures. Suggestions of key stakeholders to participate in transformation of educational system into distance education and training of the stakeholders in the handling of distance education materials.

As technology is used more in education, teachers role are increasingly integrated with those of support staff, administrators and technical staff. Collaboration networks that include e-learning sponsors, policy makers, telecommunication network service providers and educators are required to serve the problems of online education in African (Muindi,

2008).When higher education institutions (HEI) are in the process of implementing e-learning systems, a number of factors come into play. Some factors are about technology, others about the prospective users, still others about the local context of use and the associated costs.

Key findings of Wamae (2011).revealed that good connectivity and high bandwidth as well as technical support and financial resources, adequate infrastructure reliable power supply and acceptance to technology change were statistically significant factors that could hinder successful implementation of e-learning in (HEI's)

**2.3 E-Readiness in Organizations**

Odhiambo (2010) in his study on e-learning readiness among bachelor of education students of the University of Nairobi, revealed that female bachelor of education students showed higher levels of readiness for e-learning as compared to their male counterparts. His findings showed age is a factor that influence e-learning as younger learners reported more readiness than older learners. The study also revealed that regular students have higher readiness than distance learners. Furthermore prior training in computers were found to be e-ready than those who do not have prior training.

The factors that have been perceived to influence adoption include attitude towards e-learning. Attitude is an individual's positive or negative feeling (Fishbein and Ajzen, 1975). As noted by Ndubisi (2004) is related to behavioural intention because people form intentions to perform behaviours towards which they have positive feelings.

Perceived usefulness on e-learning is the extent to which a person believes that using a particular technology will enhance performance. A new Zealand university research study (Butson, 2005) on use of web-based technologies suggests that e-learning adoption may be driven by technology itself as according to survey data teachers see no significant advantage in using web based technologies and there is no institutions drivers for web based teaching.

Rogers (1995) indicates that providing incentives for adoption of an innovation may change the pattern of adoption. Elgort (2005) shows that e-learning is frequently motivated by student pressure. He noted that like organizational incentives students pressure may facilitate the rate of adoption of e-learning at the expense of its quality, resulting in a surface approach to e-learning.

Abdel-Wahab (2005) wrote on modelling students intention to adopt e-learning: a case from Egypt and the results of the study suggested that the best subset of predators that can be used in modelling a student intention to adopt e-learning includes: attitudes toward e-learning, usefulness of e-learning, ease of e-learning use, pressure to use e-learning and availability of resources needed to use e-learning.

Kalui (2009) found out that e-readiness level of microfinance institutions (MFIs)in Kenya were found not to be e-ready because of the difficulty in getting appropriate data and limited resources which was also complicated by the fact that data in financial institutions is generally confidential.Marika (2013) did an investigation on readiness of academic staff and students towards the use of videoconferencing (VTC) in teaching and learning. The aim was to shed light on why electronic learning initiatives have not succeeded in academic institutions in Kenya. E-readiness was measured by evaluating human readiness and institution readiness. Institution readiness was measured by evaluating the infrastructure, technology, course content, availability of human resources and availability of finances to implement VTC. Human readiness was gauged by evaluating the skills, attitude and perception of the people involved in VTC. Performance, quality of education, efficiency, financial savings, control of students, security of academic materials and management support were found to be the factors that students and staff would consider before they accept VTC.

Kongonyo (2004) in his study on assessment of e-business readiness in one of the leading manufacturing enterprises in Kenya, although the organization is internally ready for e-business, external impediments had limited the extent to which it can reap from value chain integration. Similarlythe study also indicates that the pre-requisites for e-business

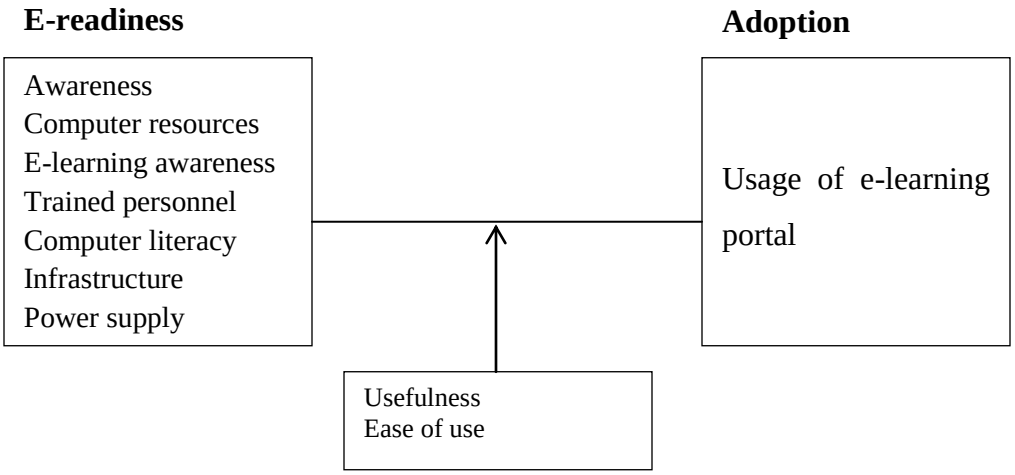
success are largely internal rather than external, hence organizations can achieve a lot by improving their own internal readiness before extending the scope of their e-business initiatives.

### 2.4 Conceptual Framework

Technology acceptance model (TAM) proposed by Davis in 1986 has proven to be a theoretical model in helping explain and predict user behaviour of information technology perceived usefulness (PU) and perceived ease of use (PEOU) influence one's attitude towards system usage which in turn influence one's behaviour's intention to use a system which leads to actual usage.

Process of adopting innovations has been studied for over 30 years and one of the most popular adoption models described by Rogers in his book diffusion of innovations (Sheny and Gibson, 2002). Rogers diffusion innovations theory is most appropriate for investigating the adoption of technology in higher education and educational environments (Medlin, 2001, Pansot, 1995). Rogers (2005) defines the rate of adoption as the relative speed with which an innovation is adopted by members of a social system he categorized adopters of innovation as innovators, easy, adopters, easy majority, late majority and laggards.

**Figure 2.1 Conceptual Framework**




## 2.5 Summary of Literature

This chapter reviewed on past studies, e-learning information systems in organizations and e-learning in institutions of learning, challenges of e-learning and e-readiness factors. It presented the objective of reviewed studies, main findings and recommendations.

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter focuses on methods used in collecting information for the study, procedures used in conducting the research, various techniques of the data collected. The chapter's main focus is on research design, population, sample population, sample design and data collection and analysis applied in the study.

## 3.2 Research Design

Cross sectional descriptive survey will be used to establish e-learning adoption by students of the University of Nairobi. A survey of the University of Nairobi students survey at undergraduate level. Greswell (1994) and Cooper and Schneider (1999) is the most appropriate research design in descriptive studies because the research findings are significant, not biased and accurate.

## 3.3 Population

Population refers to set of all units of analysis in one's problem area (Breakwell, 1995). The study focuses on all the university of Nairobi students at undergraduate level.

## 3.4 Sample Design

Nesbary (2000) defines a sample design as a subset of a population selected to represent characteristics of a population. A sample of 100 students will be selected from the school of education since it has relatively large number of student population registered for the course,

## 3.5 Data Collection

Primary data will be used in this study. A structured questionnaire will be used to collect the data. Kumar (2005) a questionnaire is a written list of questions, answers to which are recorded by respondents. Questionnaire will be administered by drop and pick method to avoid interrupting respondent work schedule. The questions consist of information communication factors. Age, gender, design factors and adoption of e-learning at the University of Nairobi.

### 3.6 Data Analysis

Data collected will be analyzed using descriptive statistics. Percentages and frequencies will be used to analyze questions on the profiles of the respondents. The data will be presented in tables and charts.

Regression model will be used to analyze the e-learning readiness factors.

$Y = a_0 + X_1 a_1 + X_2 a_2 + X_3 a_3 + e$

Where

Y = E-learning adoption

$X_1$ = E-Readiness factors

$X_2$ = usefulness of E-learning portal

$X_3$ = Ease of use of E-learning portal

# CHAPTER FOUR

# DATA ANALYSIS, INTERPRETATION AND PRESENTATION

## 4.1 Introduction

This chapter presents analysis and findings of the study. Data presented was gathered by use of questionnaires as derived from the research objectives. Data collected from respondents is presented and summarized using tables and figures.

## 4.2 General Information

This section details the background information of the respondents. It gives information on the gender of the respondents, age, level of education, awareness on the existence of the university portal and its usage.

### 4.2.1 Response Rate

The target sample for the study was 100 administered to the students of the University of Nairobi, School of Education. Ninety six (96) were returned. The findings are presented in table 4.1. The overall response rate was 96%. This was sufficient representative.

### 4.2.2 Gender of Respondents

**Table 4.1 Gender of Respondents**

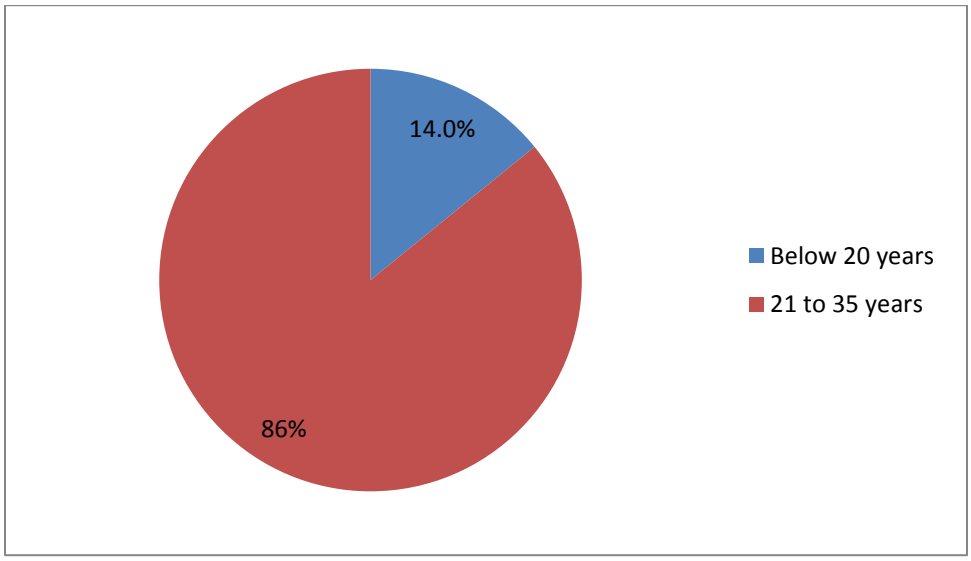
| | | **Frequency** | **Percentage** |
|---|---|---|---|
| Valid | Male | 55 | 57 |
| | Female | 41 | 43 |
| | Total | 96 | 100 |

**Source: Author 2014**

### 4.2.3 Distribution of Respondents by Age

Respondents were asked to indicate their age and the findings are presented in figure 4.1. Majority of respondents 86% are in the age bracket of 21 to 35 years. This particular age forms the bulk of undergraduate students.

**Figure 4.1 Distribution of Respondents by Age**




**Source: Author 2014**

### 4.2.4 Distribution of Respondents by Level of School Years

The respondents were asked to indicate the level of school year. From the findings 100% are in the undergraduate level which implies that they are highly skilled in their areas of specialization and are more likely to adopt to an innovation like e-learning.

**Percentage of respondents by demographic characteristics and variables of study.**

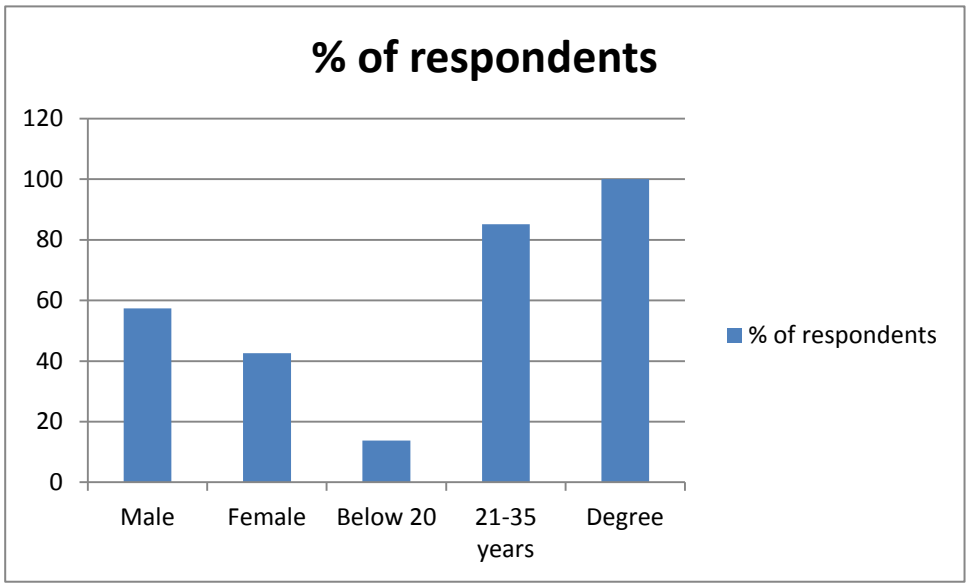
| | | Number | % of respondents |
|---|---|---|---|
| | Male | 55 | 57 |
| | Female | 41 | 43 |
| | Below 20 | 13 | 14 |
| | 21-35 years | 78 | 85 |
| | Degree | 91 | 100 |
| Awareness | Yes | 91 | 97 |
| | No | 3 | 3 |
| Usage | Yes | 53 | 56 |
| | No | 40 | 43 |
| Usefulness | Yes | 42 | 96 |
| | No | 2 | 4 |
| Easy to use | Yes | 40 | 74 |
| | No | 14 | 26 |
| Trained | Yes | 26 | 48 |
| | No | 28 | 52 |
| Agender tool | Strongly disagree | 4 | 8 |

| | | | |
|---|---|---|---|
| | Disagree | 11 | 22 |
| | Neither agree nor disagree | 9 | 18 |
| | Agree | 16 | 33 |
| | Strongly agree | 9 | 18 |
| Document and links tool | Strongly disagree | 2 | 4 |
| | Disagree | 7 | 14 |
| | Neither agree nor disagree | 6 | 12 |
| | Agree | 31 | 63 |
| | Strongly agree | 3 | 6 |
| Course description setting tool | Strongly disagree | 1 | 2 |
| | Disagree | 5 | 10 |
| | Neither agree nor disagree | 12 | 24 |
| | Agree | 21 | 42 |
| | Strongly agree | 11 | 22 |
| Announcement tool | Strongly disagree | 1 | 2 |
| | Disagree | 7 | 15 |
| | Neither agree nor disagree | 12 | 26 |
| | Agree | 15 | 32 |
| | Strongly agree | 12 | 26 |
| Learning path tool | Strongly disagree | 3 | 6 |
| | Disagree | 9 | 18 |
| | Neither agree nor disagree | 6 | 12 |
| | Agree | 22 | 44 |
| | Strongly agree | 10 | 20 |
| Forum tool | Strongly disagree | 3 | 6 |
| | Disagree | 10 | 21 |
| | Neither agree nor disagree | 10 | 21 |
| | Agree | 20 | 42 |
| | Strongly agree | 5 | 10 |
| Group tool | Strongly disagree | 2 | 4 |
| | Disagree | 12 | 25 |
| | Neither agree nor disagree | 12 | 25 |
| | Agree | 12 | 25 |
| | Strongly agree | 11 | 22 |
| Users tool | Strongly disagree | 2 | 4 |

| | | | |
|---|---|---|---|
| | Disagree | 9 | 18 |
| | Neither agree nor disagree | 8 | 16 |
| | Agree | 21 | 42 |
| | Strongly agree | 10 | 20 |
| Chart tool | Strongly disagree | 3 | 6 |
| | Disagree | 9 | 18 |
| | Neither agree nor disagree | 12 | 25 |
| | Agree | 13 | 27 |
| | Strongly agree | 12 | 25 |
| Slow connectivity | Strongly disagree | 10 | 19 |
| | Disagree | 13 | 25 |
| | Neither agree nor disagree | 3 | 6 |
| | Agree | 16 | 30 |
| | Strongly agree | 11 | 21 |
| Inadequate infrastructure | Strongly disagree | 5 | 9 |
| | Disagree | 12 | 23 |
| | Neither agree nor disagree | 7 | 13 |
| | Agree | 19 | 36 |
| | Strongly agree | 10 | 19 |
| Reliable power | Strongly disagree | 11 | 32 |
| | Disagree | 11 | 32 |
| | Neither agree nor disagree | 6 | 18 |
| | Agree | 4 | 12 |
| | Strongly agree | 2 | 6 |
| High cost | Strongly disagree | 15 | 29 |
| | Disagree | 17 | 33 |
| | Neither agree nor disagree | 10 | 20 |
| | Agree | 4 | 8 |
| | Strongly agree | 5 | 10 |
| University support | Strongly disagree | 6 | 12 |
| | Disagree | 12 | 24 |
| | Neither agree nor disagree | 5 | 10 |
| | Agree | 16 | 32 |
| | Strongly agree | 10 | 20 |
| Awareness level | Strongly disagree | 7 | 14 |
| | Disagree | 9 | 18 |

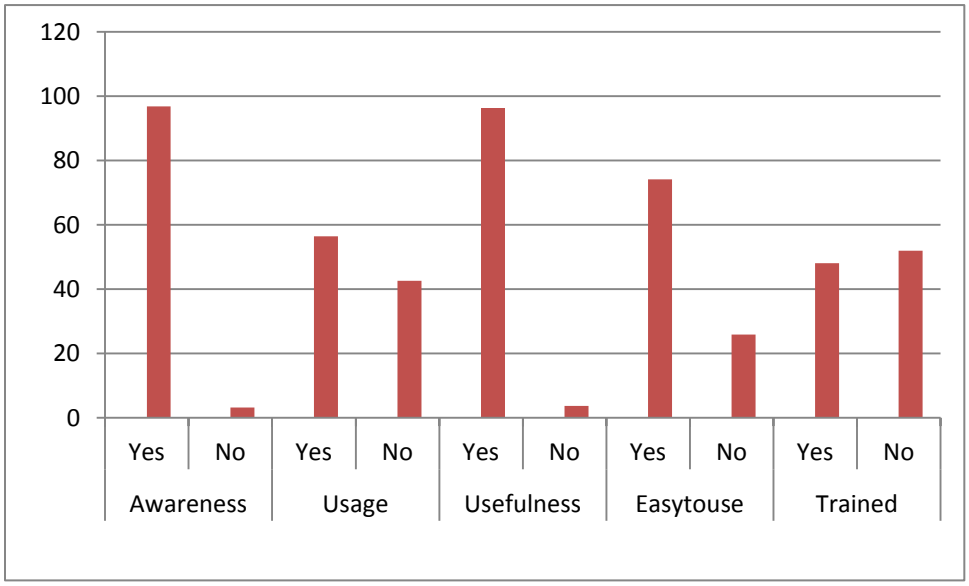
| | | | |
|---|---|---|---|
| | Neither agree nor disagree | 2 | 4 |
| | Agree | 18 | 37 |
| | Strongly agree | 13 | 27 |
| Adequate computer resources | Strongly disagree | 7 | 13 |
| | Disagree | 20 | 38 |
| | Neither agree nor disagree | 7 | 13 |
| | Agree | 12 | 23 |
| | Strongly agree | 7 | 13 |
| Students attitude | Strongly disagree | 1 | 2 |
| | Disagree | 16 | 31 |
| | Neither agree nor disagree | 8 | 15 |
| | Agree | 15 | 29 |
| | Strongly agree | 12 | 23 |
| Accessibility | Strongly disagree | 5 | 10 |
| | Disagree | 13 | 25 |
| | Neither agree nor disagree | 8 | 15 |
| | Agree | 15 | 29 |
| | Strongly agree | 11 | 21 |

**Figure 4.2 Percentage of Respondents**




**Source: Author 2014**

**Figure 4.3 Distribution of Respondents by importance of technology**




**Source: Author 2014**

### 4.3.2 Usefulness

The researcher wanted to establish the use of the e-learning portal. From the findings in figure 4.3 above. 96% of the population agree that the portal is useful.

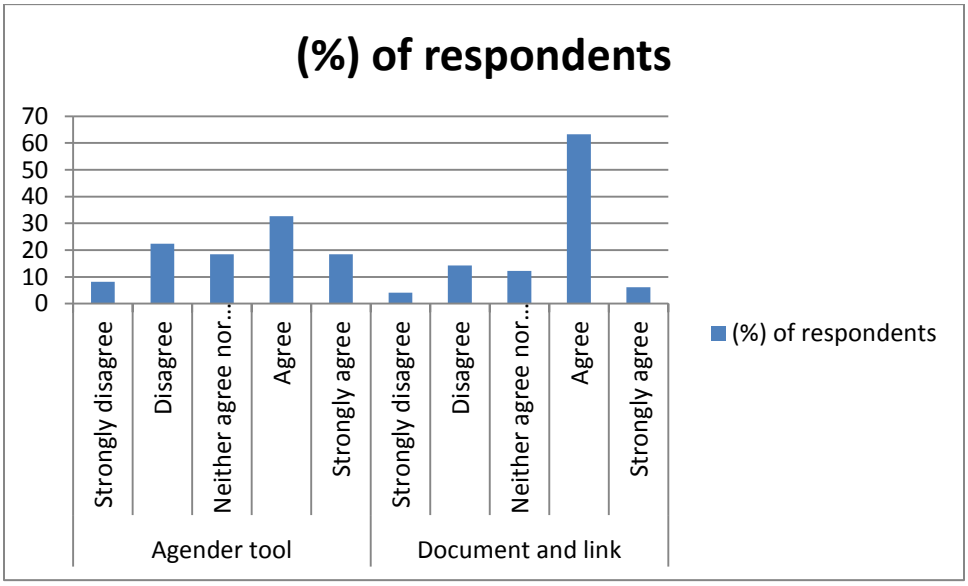
### 4.3.3 Ease of Use

The researcher wanted to know if the portal is easy to use. 75% of the respondents found it easy to use as shown in figure 4.3 above.

### 4.3.4 Training on the usage of the portal

The researcher wanted to establish if the students has prior training on the usages of the portal. 52% of the respondents reported to have not undergone training on its usage. This needs to be improved by the University Administration.

**Figure 4.4 Extent of usage of the tools**




**Source: Author 2014**

### 4.4 The researcher wanted to establish the extent of usage of the tools

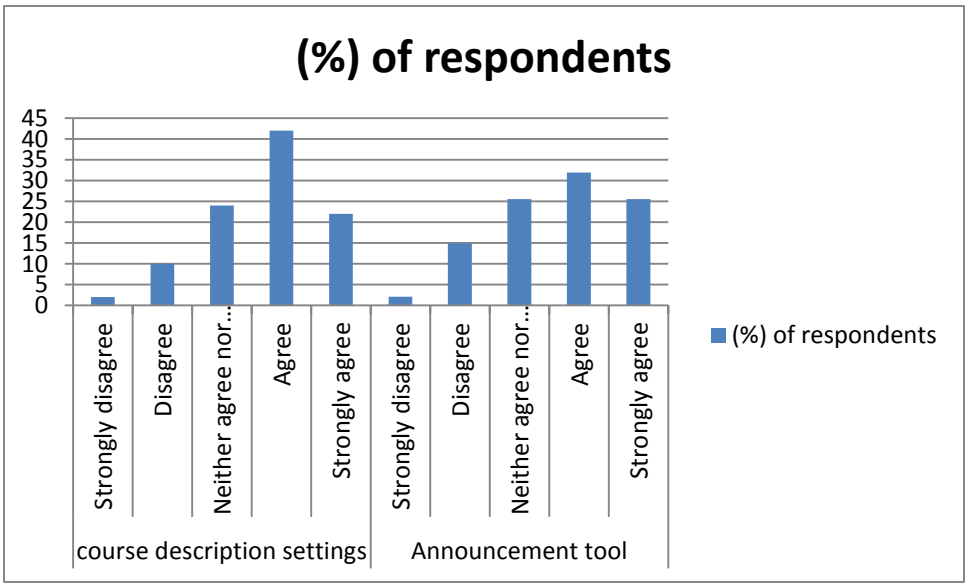
**Agenda tool**

8% strongly disagreed on the tool, 22% disagree, 18% neither agree has disagree, 33% agree while 18% strongly agree as shown in figure 4.4.

**Document and link tool**

4% of the respondents strongly disagree, 14% disagree, 12% neither agree nor disagree, while 63% agree and 6% strongly agree as shown in figure 4.4.

**Figure 4.5 Extent of usage of tools**




**Source: Author 2014**

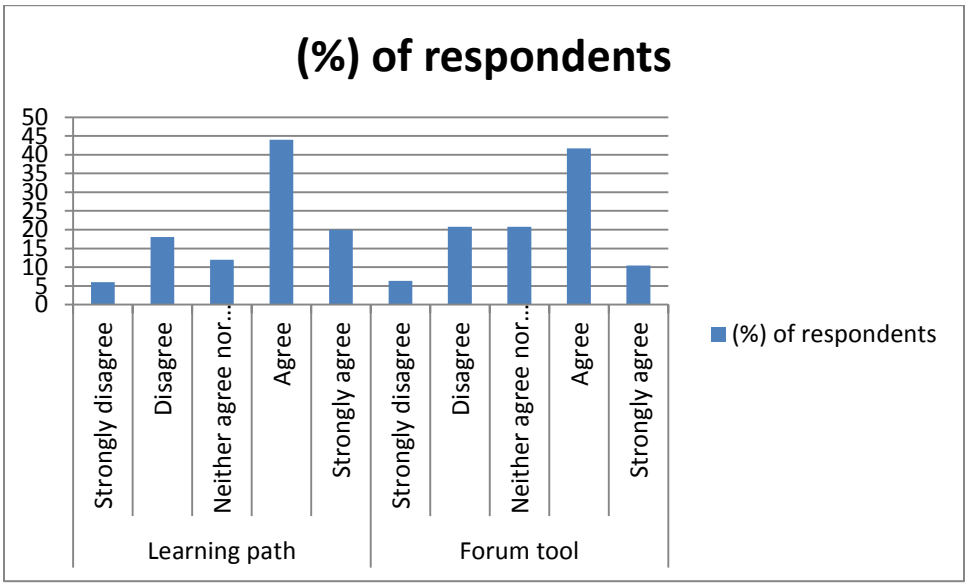
### 4.4.1 Course description setting tool.

2% of the respondents strongly disagree, 10% disagree, 24% neither agree nor disagree while 42% agree and 22% strongly agree as shown in figure 4.5 above.

### 4.4.2 Announcement tool

2% strongly disagree, 15% disagree, 26% neither agree nor disagree and 32% agree while 26% strongly agree as shown in figure 4.5 above.

**Figure 4.6 Extent of usage of the tools**




**Source: Author 2014**

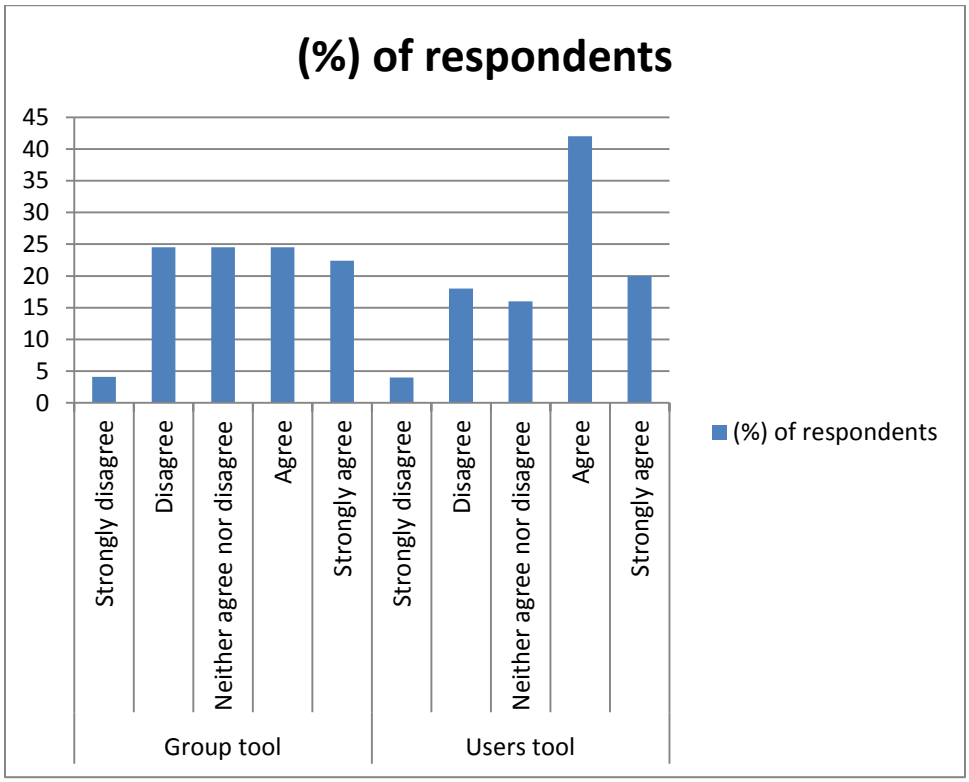
### 4.4.3 Learning path tool

6% of the respondents strongly disagree, 18% disagrees, 12% neither agree nor disagree while 44% and 20% agree and strongly agree respectively as shown in figure 4.6.

### 4.4.4 Forum tool

6% strongly agree on the tool, 21% disagree, 21% neither agree nor disagree while 42% and 10% agree and strongly agree respectively as shown in figure 4.6 above.

**Figure 4.7 Extent of usage of the tools**




**Source: Author 2014**

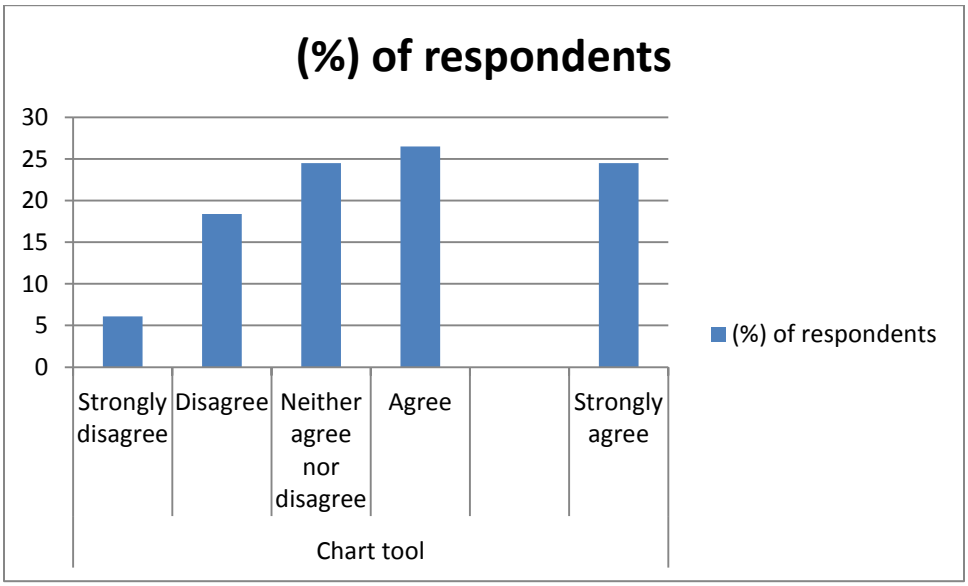
### 4.4.5 Group tool

4% of respondents strongly disagree, 25% disagree, 25% neither agree nor disagree, 25% agree as 22% strongly agree as shown in figure 4.7.

### 4.4.6 Users tool

4% strongly disagree, 18% disagree, 16% neither agree nor disagree while 42% agree and 20% strongly agree.

**Figure 4.8 Extent of usage of tools**



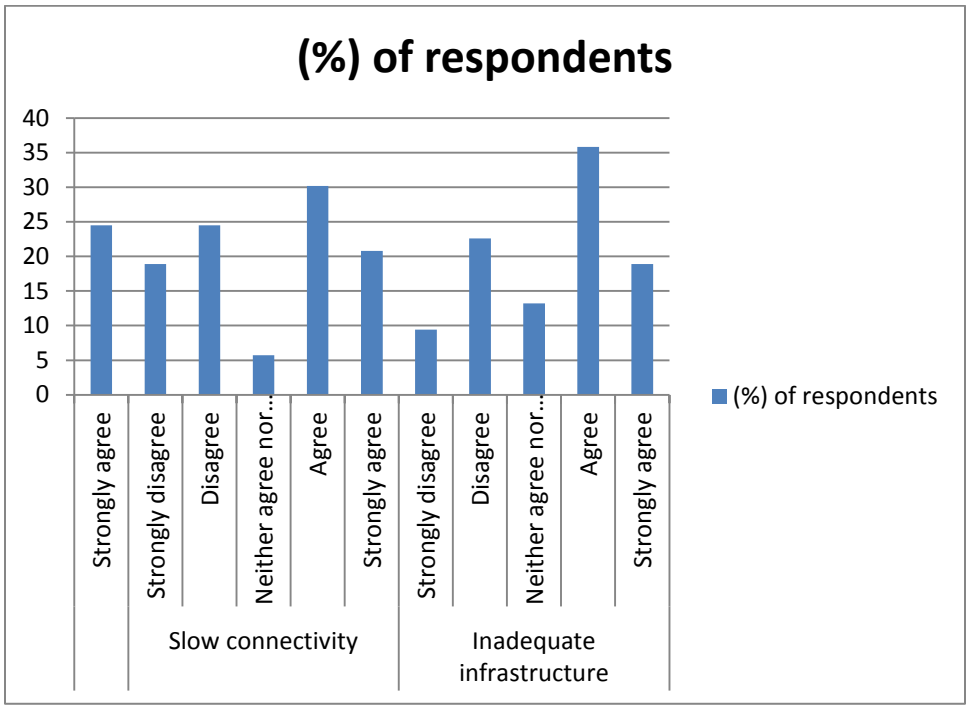

**Source: Author 2014**

### 4.4.7 Chart tool

6% of the respondents strongly disagree, 18% disagree, 25% neither agree nor disagree, 27% agree and 25% strongly agree as shown in figure 4.8

4.5 The researcher wanted to establish challenges faced by the students while using the portal and the results are as follows below.

**Figure 4.9 Challenges of using the portal**




**Source: Author 2014**

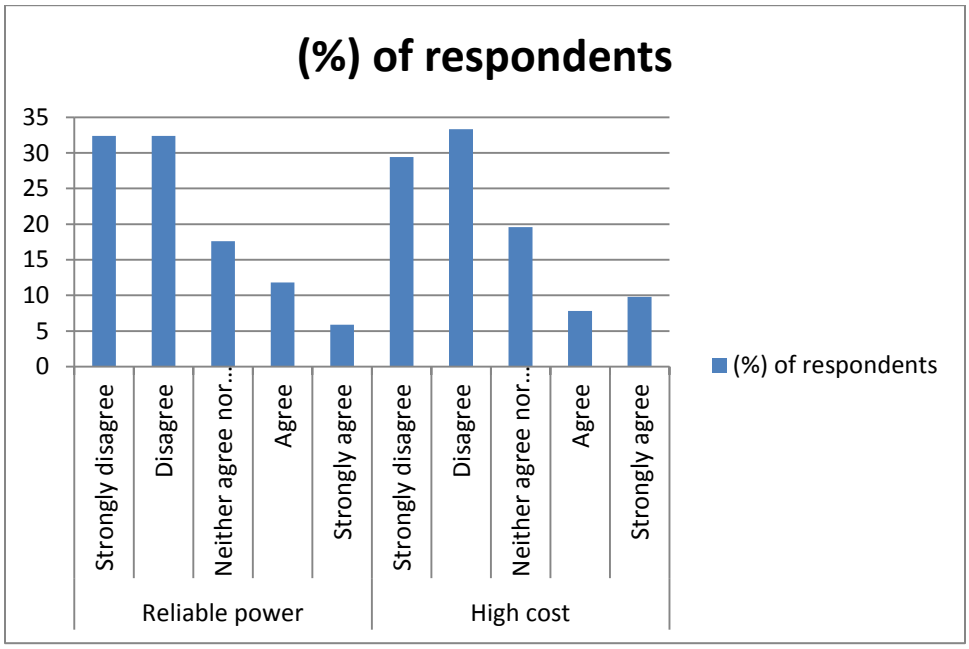
### 4.5.1 Slow connectivity

19% of the respondents strongly disagree, 25% disagree, 6% neither agree now disagree, 30% agree and 21% strongly agree as shown in figure 4.9.

### 4.5.2 Inadequate infrastructure

9% of the respondents strongly disagree, 23% disagree, 13% neither agree nor disagree, 36% agree and 19% strongly agree as shown in figure 4.9.

**Figure 4.10 Challenges of using the portal**




**Source: Author 2014**

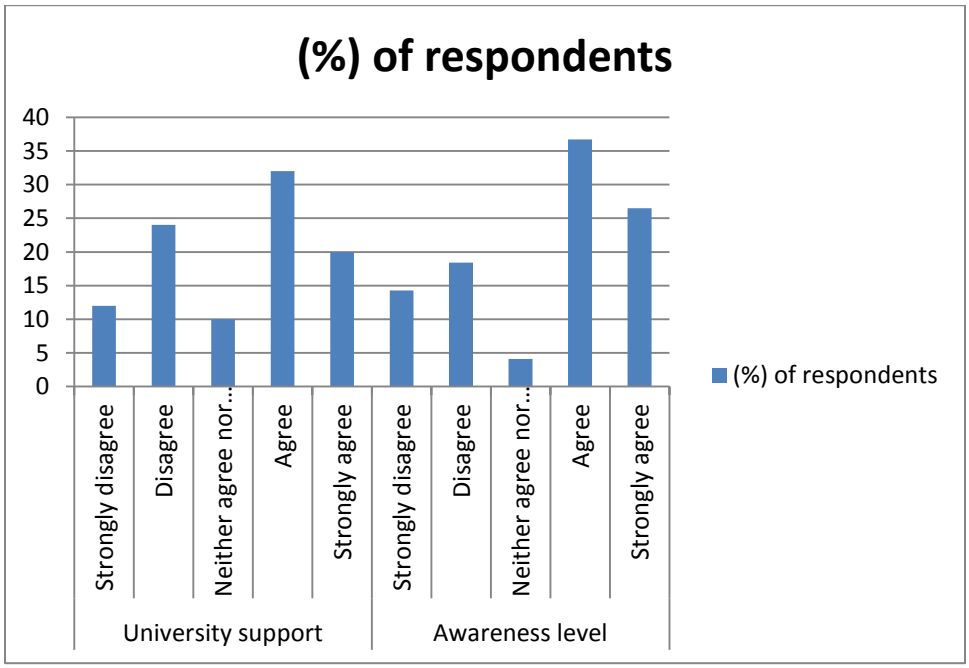
### 4.5.3 Reliable power

32% strongly disagree, 32% disagree, 18% neither agree nor disagree, 12% agree and 6% strongly agree as in figure 4.10.

### 4.5.4 High cost

29% strongly disagree, 33% disagree, 20% neither agree nor disagree, 8% agree and 10% strongly agree as shown in figure 4.10.

**Figure 4.11 Challenges of using the portal**




**Source: Author 2014**

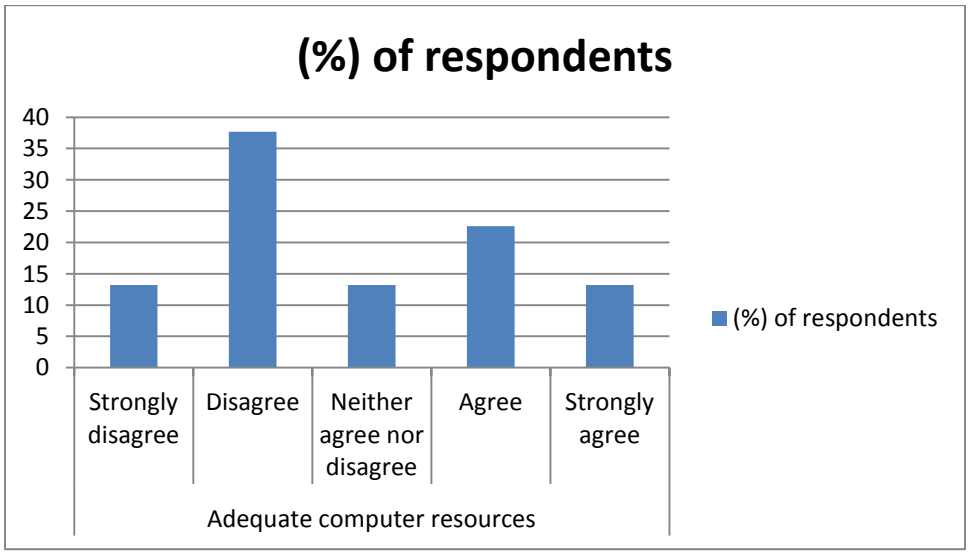
### 4.5.5 University support

12% strongly disagree, 24% disagree, 10% neither agree nor disagree while 32% agree as 20% strongly agree as in figure 4.11.

### 4.5.6 Awareness level

14% strongly disagree, 18% disagree, 4% neither agree nor disagree while 37% agree as 27% strongly agree as shown in figure 4.11.

**Figure 4.12 Challenges of using the portal**

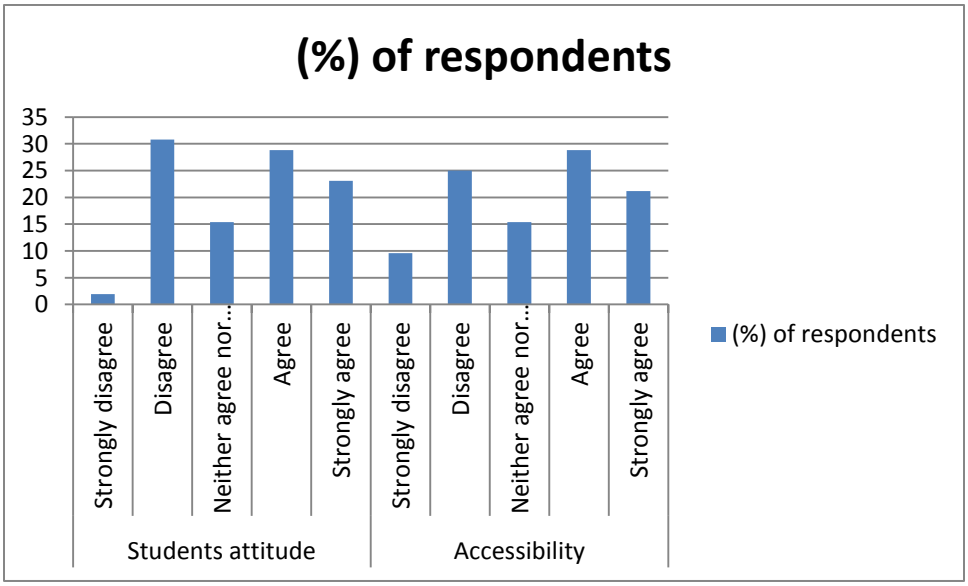



**Source: Author 2014**

### 4.5.7 Adequate computer resources

13% of the respondents strongly disagree, 38% disagree, 13% neither agree nor disagree, 23% agree, while 13% strongly agree as shown in figure 4.12.

**Figure 4.13 Challenges of using the portal**




**Source: Author 2014**

### 4.5.8 Students attitude

2% of the respondents strongly disagree, 31% disagree 15% neither agree nor disagree while 29% agree and 23% strongly agree as in figure 4.13.

### 4.5.9 Accessibility

10% of the respondents strongly disagree, 25% disagree 15% neither agree nor disagree, 29% agree and 21% strongly agree as shown in figure 4.13.

## 4.3 Awareness of the e-learning portal

The researcher wanted to establish the awareness level of the existence of the University of Nairobi portal. 97% of the population interviewed revealed that they are aware of the existence of the University portal as shown in figure 4 above.

### 4.3.1 Extent of usage of the portal

The researcher wanted to know the extent of usage of University of Nairobi portal and from the findings in figure 3 reveals that 56% of the students interviewed are found to be using the system. Which implies that it needs to be strengthened to match its awareness level.

### 4.3.2 Challenges of using e-learning portal

The study sought to establish the challenges students faced while using the systems. Majority of the students are faced with various challenges which include slow connectivity of the system, inadequate infrastructure, reliable power, high cost involve university support, awareness level, adequate computer resources, student attitude and accessibility.

### 4.3.3. E-readiness factors

The researcher wanted to establish the e-readiness factors of the portal and 96% of the students reveals that the portal is useful in their daily activities. 74% of the population reveals that the system is easy to use though majority of them at 52% have not been trained on the usage of the portal. Refer to figure 4.3.

### 4.4 Awareness of the e-learning portal

The researcher wanted to establish the awareness level of existence of the university of Nairobi portal. 97% of the respondents said they are aware of its existence as shown in figure 4.3.

#### 4.4.1 Extent of usage of the portal

The researcher wanted to know the extent of usage of university of Nairobi portal and from the findings in figure 4.3. Reveals that 56% of the students interviewed are found to be using the system which implies that it needs to be strengthened to match its awareness level.

#### 4.4.2 Challenges of using e-learning portal

The study sought to establish the challenges students face while using the systems. Majority of the students are faced with various challenges as shown figures 4.9 to 4.13 above.

#### 4.4.3 E-readiness factors

The researcher wanted to establish the e-readiness factors of the portal and 96% of the students reveals that the portal is useful in their daily activities. 74% of the respondents reveals that the system is easy to use though majority of them at 52% have not been trained on the usage of the portal as shown in figure 4.3.

**Standard table**

| | | | | Coefficients(a) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Unstandardized Coefficients | | Standardized Coefficients | | | 95.0% Confidence Interval for B | |
| Model | | B | Std. Error | Beta | t | Sig. | Lower Bound | Upper Bound |
| 1 | (Constant) | 18.35 | 2.875 | | 6.384 | 0 | 12.556 | 24.15 |
| | Usefulness | 0.023 | 0.135 | 0.032 | 0.172 | 0.864 | -0.248 | 0.294 |
| | Readiness | 0.047 | 0.116 | 0.064 | 0.4 | 0.691 | -0.188 | 0.281 |
| | Ease of use | -0.063 | 0.122 | -0.092 | -0.514 | 0.61 | -0.31 | 0.184 |

The table above shows the regression model used to analyze e-learning readiness factors by use of the variables e-readiness factors, usefulness and ease of use.

$Y = 18.35 + 0.023 \times 1 + 0.047 \times 2 - 0.063 \times 3 + 2.875$

# CHAPTER FIVE
# SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter gives a summary of the whole survey, key findings of the study based on the objectives of the study, conclusion and recommendation are also included.

## 5.2 Summary of Findings

The study seeks to investigate adoption of e-learning by students of the University of Nairobi. Literature review presented adoption and e-learning readiness factors, challenges and review past studies it presented the objectives of reviewed studies their findings, conclusions and recommendations.

Research methodology discussed the type of research design, population of study and target population, sample, instruments to be used and data analysis. The study used questionnaires as the instruments for data collection. The qualitative data was analyzed using descriptive statistics with the help of Statistical Package for the Social Sciences (SPSS). The conclusion found out that students of the University are e-ready for e-learning despite the challenges of no previous training on how to use the system, system challenges on how to access it, few resources in the university and traditional way of learning which is still prevalent.

From this study the following conclusions are arrived at e-readiness is key in determining adoption of e-learning at the University of Nairobi. Many students perceive usage of e-learning as useful in their learning, hence the reason for similar conclusion in this current study. It was concluded that supporting infrastructure such as provision of more computers was a key factor influencing adoption. Use of other infrastructure like mobile telephony should be incorporated into the system.

### 5.3 Recommendations

It is recommended that university administration should put in a lot of emphasis on training of all the students on the use of e-learning and improve on its information technology (IT) infrastructure. This will ensure that students find it easy to use computers during e-learning lessons internet connectivity is also key in facilitating this. Qualified online instructors is also recommended to assist students, this will make students adopt the system easily.

### 5.4 Limitations of the study

The study used questionnaires to collect primary data. There was no use of qualitative data collection method which helps in collecting more information from the respondents.

### 5.5 Suggestions for further studies

This study was not exhaustive since it only investigated on students at undergraduate level. The study recommends that;

i. Similar study should be done across other campuses of the University of Nairobi and across universities in Kenya.
ii. Adoption of e-learning among postgraduate students
iii. Adoption of e-learning among lectures and other administrative staff who work at the University of Nairobi.

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## APPENDICES

**Appendix I: Introduction**

Date: ……

**RESEARCH QUESTIONNAIRE FOR STUDENTS OF UNIVERSITY OF NAIROBI.**

Dear Respondent,

I am Wesley Kipkirui Siele, a graduate student of Master of Business Administration at University of Nairobi. I am carrying out a Research study of "ADOPTION OF E-LEARNING BY STUDENTS' OF UNIVERSITY OF NAIROBI".

It would be of great value if you could share your wealth of knowledge by completing this questionnaire. Your answers will be handled with highest anonymity and confidentiality; this will be achieved by no indication of names. Kindly return the completed questionnaire to me.

Regards,

WESLEY KIPKIRUI SIELE

**Appendix II: Questionnaire**

Section A: Biographic data (please tick as appropriate)

Respondent profile

1) Please specify your gender

   Male [ ]

   Female [ ]

2) Please specify your age

   i) Below 20 years [ ]

   ii) 21 to 35 years [ ]

   iii) 36 to 50 years [ ]

   iv) 51 years and above [ ]

3) What is the level of your school years

   i) Degree [ ]

   ii) Masters [ ]

   iii) Ph.D [ ]

   iv) Others specify……

4) Are you aware of the existence of the university of Nairobi E-learning portal

   Yes [ ]

   No [ ]

5) Do you use the University's e-learning portal

   Yes [ ]

   No [ ]

If yes proceed to section B C and D

If no please indicate why

_____

_____

**SECTION B: EXTENT OF USAGE OF ELEARNING PORTAL**

Please indicate which of the following modules do you use on the e-learning portal.

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| a) Agenda tools | | | | | |
| b) Document and links tools | | | | | |
| c) Course description settings tool | | | | | |
| d) The announcement tool | | | | | |
| e) The learning path tool | | | | | |
| f) The forum tool | | | | | |
| g) The group tool | | | | | |
| h) The users tool | | | | | |
| i) The chart tool | | | | | |

Any other module you use

_____

_____

**SECTION C: CHALLENGES OF USING E-LEARNING PORTAL OF THE UNIVERSITY OF NAIROBI**

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| a) Slow connectivity | | | | | |
| b) Inadequate infrastructure | | | | | |
| c) Lack of reliable power supply | | | | | |
| d) High cost involved | | | | | |
| e) Support from university administration | | | | | |
| f) Availability of e-learning awareness | | | | | |
| g) Availability of adequate computer resources | | | | | |
| h) Positive attitude of students towards e-learning system | | | | | |
| i) Difficulty in accessing and using e-learning system | | | | | |

Any other challenge

_____

_____

**SECTION D: E-READINESS FACTORS**

Do you find the portal useful?

Yes [ ]

No [ ]

Is the portal easy to use?

Yes [ ]

No [ ]

Have you been trained on the usage of the portal?

Yes [ ]

No [ ]

**Thank you for taking your time to fill in this questionnaire**