

**INFLUENCE OF VIRTUAL AND OPEN LEARNING ON PRIVATE DEMAND FOR
EDUCATION: A CASE OF KENYATTA UNIVERSITY, KENYA**

**BY
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DECLARATION

I declare that this research project report is my original work and have not been presented in any university/institution for consideration for any certification. This research project report has been complemented by referenced sources duly acknowledged. Text (including spoken words), data, pictures, graphics, and tables that have been borrowed from other sources, these sources are correctly accredited and references cited per anti-plagiarism regulations.

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DEDICATION

This work is dedicated to my dad Peter Macharia Gatithi, my mum Mary Wambui Mwangi, my sisters and friends who understood and stimulated me to climb the academic ladder. Above all, to the Almighty God, who was the spring of my strength to complete this study.

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ABBREVIATION AND ACRONYMS

AVU	African Virtual University
DE	Distance Education
DL	Distance Learning
ICT	Information and Communication Technology
IEL	Integrated E-Learning
MANCOSA	Management College of South Africa
NEA	National Education Association
SPSS	Statistical Package for Social Sciences
U. S	United State
UB	University of Botswana
UD	University of Derby
UNISA	University of South Africa
UoN	University of Nairobi
USIUA	United States International University-Africa
VOL	Virtual and Open Learning
ADDIE	Analysis, Design, Development, Implement, and Evaluate

ABSTRACT

Virtual and Open Education has become a recognized field of education across the globe as the mode of delivery, which helps a large number of students to access quality educational opportunities. Over years, learning has been classroom based, but improvement in the information technology has paved a new era of virtual leaning. The main purpose of the study was to establish the influence of virtual and open learning on enrollment. In nutshell the study ought to determine the current status of enrollment of virtual and open learning in Kenyatta University; extent to which virtual and open learning influence enrollment and challenges facing Virtual and open learning in among universities using Kenyatta University as a case example. The research utilized Descriptive survey method for the study having a target population of 1,159 of VOL students and 6 coordinators of VOL programme. The study employed simple random sampling technique to select a sample of 200 students from Virtual and Open learning in Kenyatta University. Furthermore, the study used purposive sampling to choose three Digital School coordinators. Questionnaires were administered to the randomly selected students and Key Informant Interviews to the selected coordinators. The study relied on both qualitative and quantitative data. Quantitative was analyzed using descriptive statistics. Qualitative data was analyzed thematically. Results indicated that 6,248 virtual and open students were enrolled in the program. Various challenges touching on inadequate funding, network problem, delayed feedback, and low teaching staff levels were identified. The study also established that the there no policies governing VOL. It is articulated that the findings of this study and the recommendations therefore suggested would aid the government and Kenyatta University to achieve their goal of providing quality virtual and open education at an affordable cost. Additionally, study recommends the lecturer levels be raised to reduce individual workload, which will ensure timely responses and provision of better skills to the students. The programme administrators should also respond to the issue of low compensation to ensure staff motivation. The study also recommends sensitization of society and VOL stakeholders about the advantages of VOL and the needs to change from conventional learning to virtual and opening learning due to its accommodative qualities, affordable, accessibility and flexibilities. It would benefit in policy making and guiding on financial provision for virtual and open learning programs. Finally, creating Open national university as well as the articulation of public policies for virtual and open education, and efficient use of virtual and open learning resources in providing student support services.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter provides insight information on background of the study, statement of the problem, the purpose of the study, objectives, and research questions. In addition, it gives the significance of the study, its possible limitations, delimitation of the study, assumptions of the study, theoretical framework, conceptual framework and the distinct definition of key research terms.

1.2 Background to the Study

According to McConnell (2014), contemporary Virtual and Open Learning (VOL) is a planned teaching situation that uses a broad scope of telecommunications to arrive at the students at a distance and it is devised to uplift interactions of the learners and learning certification. Shin and Chan (2004) add that the term virtual and opening learning has been applied in various pedagogies. It has been viewed as the segregation between the teacher and the student regarding space and time. Mignon and Jurie (2012) provide the most accurate explanation. They uphold virtual and open learning, and training comes from the technical separation of the instructor and learners geographically. As a result, learners have an opportunity to carry out their studies at their own convenience irrespective of time and location. From these explanations, the detachment between the learner and the lecturer is not time but space.

Virtual and Open learning is currently known all over the globe as the approach of education that assists many students in accessing quality education (McConnell, 2014). It makes quality education accessible at low costs to learners whose work and family engagements cannot be overlooked. They bar them from attending college on a full-time basis (Simonson et al., 2014).

Since Distance Education is inexpensive to assist and is not limited by geographical deliberations, it creates opportunities where traditional education has difficulty in terms of its operations. Virtual and Open learning is within reach for secondary school students to study without going away from home. VOL is more advantageous over the conventional educational system, for accessing the teaching personnel virtually all over the globe; the foundation of current interactive methodology; and, the establishment institutions and correlation with virtual resources that could be dispense among individuals and organizations that live in disconnected areas (Agalo and Agola 2014).

Virtual and distance learning seems to provide students with an option to offer an opportunity for students pursuing university education but who are unable to get admission into the residential model of education, which appears to be competitive due to limited chances. Virtual and Open learning can give pedagogies; characterized functional interactive learning outcomes that are coherent, equitable, and concurs with the student's need (Rumble, 2012). Research indicates that open learning is more worthwhile than standard programmes, particularly with high number of student enrolments and favorably encourages learner hook-up experiences (Simpson, 2013).

Virtual and Open education has witnessed tremendous growth worldwide in the 21st Century. It is rising so fast and has been a fundamental part of the educational system mainstream, in both developing and developed nations. Virtual and Open learning has been made easy by the development of computers and fast internet. More so, it has given rise to the virtual university, whereby all learning takes place online. Currently, many private and public institutions offer virtual and open education from certificate level to doctoral level. Virtual and Open learning has been in transcendence for over 100 years, although it has been identified as a new term. Keegan (2013) asserted that it started in what was initially referred to as correspondence education that

began in Europe. The University of London alleges to be the premier institution to provide VOL regarding its External programme 1858. This programme is currently recognized at the University of London and encompasses Diploma, Undergraduate and Post-graduate studies. Virtual and Open learning has been utilized in many countries, especially at tertiary education. In the United Kingdom and the United States of America, the University of Georgia and the Open University (UK) have pioneered in facilitating this mode of education in those countries, respectively (Mignon and Jurie 2012). In Asia, the Open University of Japan and the India Gandhi National Open University of India lead the way in this endeavor.

Chen et al., (2010) show that over three million students in the USA have been registered currently in VOL established academic courses, with an estimation of 20% of the courses being offered using technology. China has also not been left behind, the central radio and television university of China (CRT) is providing various multimedia distance houses with the radio and television support by using printed and auditory education resources. Currently, it is leading to modern virtual and open education system.

Thailand also introduced open learning in the year 1971 at Ramkhamhaeng University (RU). It was designed as an “academic market.” For instance, in its Open University, admissions were measureless. Students were not obligated to go to classes, and the fee was sensible. To do well in exam was not compulsory for a learner to get admission (Miyahara, 2015). Textbooks, guideline sheets, and the handbooks were the vital teaching and education resources reproduced by the same university press. The primary teaching method was teacher-centered with the assistance of closed-circuit television applied in a conventional classroom set up. The students were also offered with laboratory facilities by the university. Ramkhamhaeng University (RU) started administering a distance education system in 1995 (Miyahara, 2015).

Before virtual and open learning providers emerged in Africa, many African students attained different credentials via VOL providers in Europe and North America. University of South Africa (UNISA) was one of the leading universities to tender distance learning in the African continent, which has been offering correspondence courses since 1946. UNISA's success enabled the emergence of other VOL providers in the African continent. Examples of these are the open universities in Zimbabwe, Nigeria and Tanzania, which started as providers of regular programmes and have now manifold into providing VOL as well (Perraton, 2012).

According to Nyerere et al., (2012), Kenyan Universities are turning to e learning as a tool to facilitate improved education. Virtual and Open learning is quickly becoming the preferred mode of study in Kenya since it has several benefits, including programmes, flexibility, and courses, especially regarding what, where, and when to take the study. Additionally, a learner can take other roles while studying at the same time. Some of the Kenyan universities which have introduced open learning include; Kenyatta University, Jomo Kenyatta University of Agriculture and Technology, Moi University, University of Nairobi, Kenya Methodist University, and Mount Kenya University (Tarus et al., 2015). The VOL programs at the university have been providing learning spaces for aspiring learners who are unable to secure a chance in the internal faculties that are existing in public universities, providing an opportunity for the adults to learn at their rate. The platform has given them a chance to use of the modest educational human and material resources effectively by making university education not only in the classroom but also outside the school (Tarus et al., 2015).

For the last decade, Kenyan tertiary education has improved providing better skill to the citizens. There has been 35% increase in the number of students joining higher learning institutions with over 324,000 and 240,551 in 2013/2014 and 2012/2013 academic years respectively (Nyangau,

2014). Comparing with subsequent years the numbers has increased reaching up to 536,000 in 2015/2016 academic year. The enrolment has been rising to double that of Free Primary Education, which was introduced earlier 2003 with intents to give opportunity to many children who were not able to access education due to their poor background. The free primary education paved a way for more students in the secondary schools in return leading to the increase of number of Higher learning institutions. Increasing in the number of universities has created a pool of qualified labor to the market. The expansion of the qualified human resource has resulted to improved production leading to economic expansion. New skills have been learned leading to more specialization hence increasing the phase of industrialization and economic growth due to innovations and discoveries. The increase in the number of learners has created the need of innovations in education sector to bring the population growth and education acquiring. Consequently, there has been a development of virtual and open learning, which accommodated family responsibilities, as well as the remoteness of the learners. This mode of education has created an opportunity for economic activities and learning without necessary travelling to different places. The mandates of this study was to investigate the status of enrolment in the virtual and open learning, factors influencing the enrolment to the virtual and open learning as well as the various challenges facing virtual and open learning among Kenyan institution.

1.3 Statement of the Problem

As evidenced by the background, the demand for university education in Kenya has been increasing over the years. More individuals are enrolling for university education currently compared to any time in Kenyan history. Despite the overwhelming effort of converting Universities' constituency colleges to fully pledged universities in many counties by the

government, the demand for more institutions of higher learning has outgrown the number of available fully-fledged and interim universities. To cope with the increased private demand for high education, universities have taken measures to absorb as many students as possible. Among the measures, include the change in the method of delivery of content from the traditional face-to-face to virtual and open learning. VOL enrollment in Kenyan universities' growth rates is accelerating.

Over the years, learning has been focusing on class mode. Changes regarding the accessibility and adequate and practical teacher training have developed to support teachers in discussing sensitive, controversial, and polarizing issues in VOL. Passive educational techniques that are teacher-centered can fail to build resilience amongst young people, and it has been challenged by the emergence of information technology enhancing online learning. VOL have been viewed as a Student-centered approach that incorporates dialogical methods and co-operative learning among students. The evaluation of the factors influencing enrollment and implementing VOL have not been documented. Even though different universities have implemented VOL, minimal progress seems to have been made regarding the goal of virtual and open learning. The question that remains unanswered therefore, is what influences the enrolment to the Virtual and Open learning among students in Kenyatta University? Given the observed low involvement of students in VOL, the study also sought to look for responses to the question of what mechanisms can be put in place to enhance student enrolment and access to VOL in Kenyatta University.

1.3.1 Purpose of the Study

The purpose of this research was to examine the status of VOL and determines why there has been a continuous increase of students enrolling in virtual and open learning over the last 3 last years, which are 2019, 2018, 2017, and challenges facing VOL in Kenyatta University.

1.3.2 Objectives of the Study

The study aimed at achieving the following specific objectives:

- i. To determine the current status of enrollment of virtual and open learning in Kenyatta University
- ii. To establish the influence of virtual and open learning on enrollment in Kenyatta University; and
- iii. To establish challenges, those are facing virtual and open learning in Kenyatta University.

1.3.3 Research Questions

This study was undertaken to provide information on the following questions:

- i. What is the status of enrollment of virtual and open learning at Kenyatta University?
- ii. How does virtual and open learning affect enrollment at Kenyatta University?
- iii. What are the challenges facing virtual and open learning at Kenyatta University?

1.4 Significance of the Study

This study is significant since the findings and recommendations of the study may assist educational planners, educational stakeholders and policymakers in planning and making

appropriate decisions concerning virtual and open learning. The research findings will also benefit Universities on establishing policies to improve the quality of virtual and open learning programmes. The VOL students are likely to understand the factors, which might cause delays in completion of their course and as a result, they might take necessary measures to overcome such factors. Hence, the VOL students are able to complete their VOL course more successfully. The study finding also helps the students to identify the areas for further studies.

1.5 Limitation of the Study

The study was limited to Kenyatta University to VOL programme only. The study was limited by the respondents' attitude towards the questions asked and led to over or under report. The geographical spread of the respondents and the subsequent cost of financing the fieldwork also limited the study. However, to counter some of these challenges the researcher explained the need to carry out the study and emailed questionnaire to the VOL students.

1.6 Delimitation of the Study

The study covered influence of virtual and open learning on private demand for education, a case of Kenyatta University. The study covered only Kenyatta University, which is a public University and not private University. The researcher only dealt with VOL students and coordinators of VOL programme. The research was convenient in the Kenyatta University because of it being the leading University in offering VOL.

1.7 Assumptions of the Study

The study assumed that the students are willing to give useful information. The second assumption was that virtual and open learning influences enrollment. Finally, it was assumed that all students have functional emails.

1.8 Theoretical Framework

A theoretical framework consists of concepts and, alongside their definitions and regard to relevant scholarly literature, an existing theory or model that was used for your particular study. The theoretical framework demonstrates an understanding of the current body of knowledge and ideas that are relevant to explain the subject of your research, which relates to the broader areas of data being considered. In this study, the ADDIE was used. ADDIE (Analysis, Design, Development, Implement, and Evaluate) is a model of the Instructional System Design that mainly focuses on virtual learning. It has evolved several times over the years to become interactive, dynamic, and user friendly. The Centre created ADDIE for Educational Technology with five primary phases (Branson et al., 1981). The five steps were based on the analysis of learning design, which was developed for the enhancement of learning. The design was implemented over different areas and evaluated to determine its acceptability and working capabilities.

ADDIE Model was used to analyze the influence of Virtual and Open learning. ADDIE model was used in the study due to the natural fit factor to Virtual learning. The model explains how VOL allows the students to integrate technology in their learning all over the world, notwithstanding Kenyatta University. The incorporation of virtual teaching improves the personal, as well as corporate, expertise. This model is preferred in understanding the enrollment

and access to virtual learning because it constitutes the needs of the learners through the provision of appropriate materials and tools for education. Its focus on the individual needs by employing specific techniques, provide a leeway to explore the academic lacuna on the correlates of Virtual and Open learning in various institutions. The ADDIE articulates the understanding of multiple factors that influence the learners' preference of leaning mode. This model appreciates the dynamic nature of technology and holds that, for Virtual and open learning to be successful, it must follow all the elements highlighted. It posits that there is need of period evaluation of the implemented system of VOL to ensure that all loopholes are identified and remedy be providing to achieve its main objects. Therefore, the ADDIE model advocates for Analysis, Design, Development, Implementation and Evaluation of the VOL as instructional system design that improves the delivery of classes as well as the exams. These was achieved by understanding the leaner's experience, characteristics of instructors as well as the access to technology for the delivery of Virtual and open learning all over Kenya (Branson et al.,1981).

The model outlines the underlying goals, which is enhanced by the focus on learners' experience and means of access to the learning interface. The underlying draws the strengths and weaknesses of the VOL mode of learning and provides the strategies to culminate on the vulnerability. The main goal of VOL is to evaluate the needs of society and the changes, in adaptability in the education sector. The strategy of VOL is to train and engage learners in the real world, which expands their output in the economy. The accomplishment of VOL goals has been possible by selecting and utilizing appropriate method and media. The learning materials and course content in VOL has been strategic for training both the learners and the instructors.

Kenyatta University has initiated different media and teaching techniques in Virtual and Open learning for easy access for both tutors and students. Over the years, the VOL platform in

Kenyatta University has experienced gradual change. There has been a gradual increase in enrolment for the last three years. Thus, the enrolment and participation of students in VOL have enhanced through breaking the ordinary classroom norm and embracing technology in learning. This has led to a case scenario where all stakeholders develop an interest in Virtual learning.

1.9 Conceptual Framework

The researcher has developed figure1.1 below and displays the relationship between variables.

Independent variables

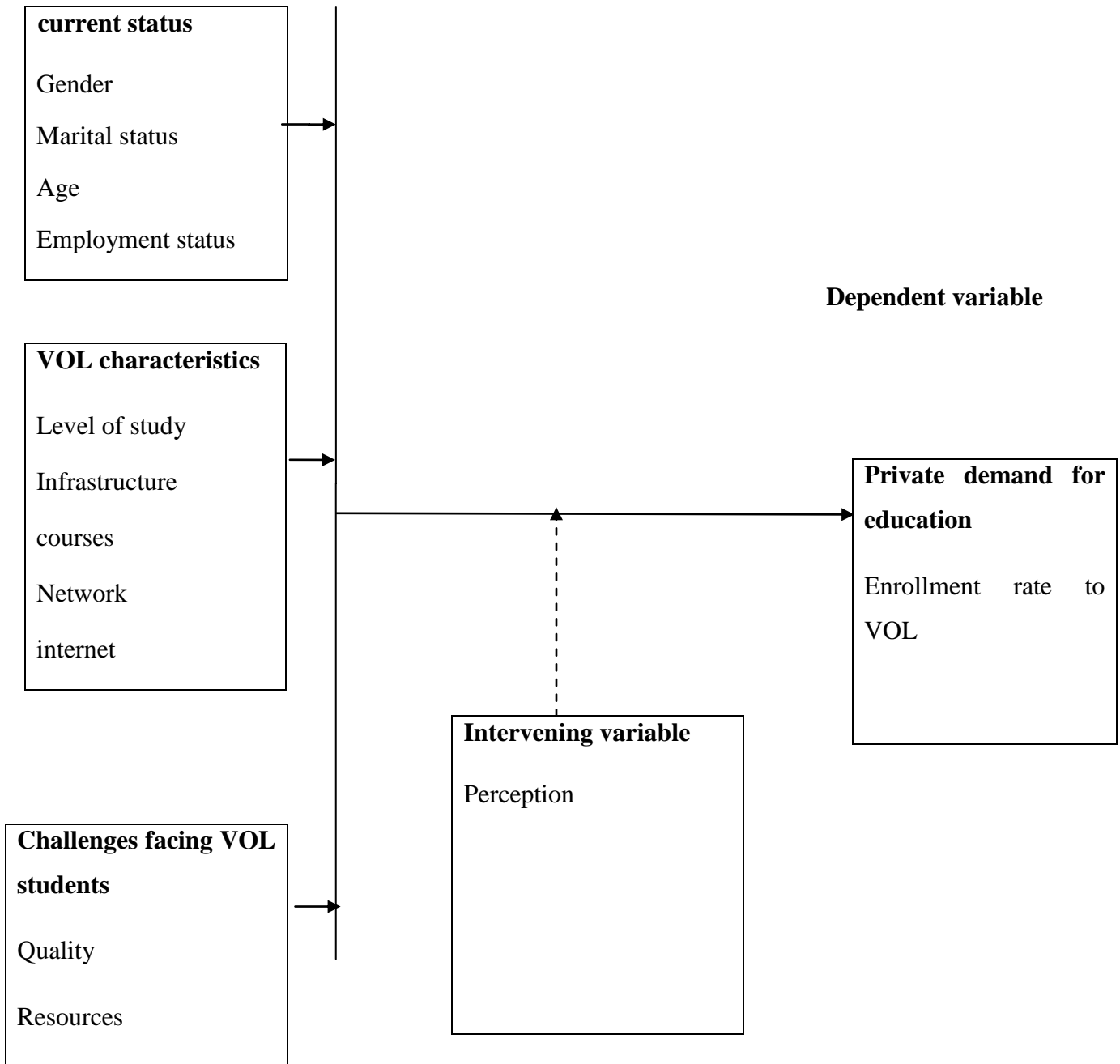


Figure 1.1: Conceptual Frameworks

Source: Researcher's (2019)

A Conceptual Framework Showing the Relation between Independent Variables and Dependent Variable

The conceptual framework aimed at investigating the influences of influence of virtual and open learning on enrollment. The study's dependent variable is private demand for education. It is affected by current status of VOL students whereby married, employed and aged students prefers VOL mode of study compared to young and unmarried students. VOL favorable characteristics like good network connectivity, good internet connection, good infrastructure, many courses been offered through VOL as mode of delivery and the current level of study may motivate students to prefer VOL programmes. However, VOL unfavorable characteristics like poor network connectivity, poor internet connection, poor infrastructure, a few courses offered through VOL as mode of delivery and the current level of study may discourage VOL students in enrolling to VOL programmes. Challenges facing VOL like low quality and inadequate resources may make VOL students to postpone their education as they attend to such issues, which will result to dropout and low enrollment rate to VOL programmes. Perception of VOL is the intervening variable and may affect correlation of VOL and private demand of education.

1.10 Operational Definition of Key Terms

This section identifies concepts and terms that were used in this research study.

Distance Learning: Refer to the structure where the student interacts with the lecturer through a system in which modern technologies are used.

E Learning: Refer to the use of information media to deliver university instruction.

Virtual and Open Learning: This is a universal term for the use of telecommunication to enhance teaching and learning. The attainment of knowledge and skills through mediated information and instruction, encircling all technologies and other forms of learning at a distance.

Quality Education: A quality education provides the outcomes needed for students, communities, and societies to thrive. It allows learning institution totally and incorporates fully with their communities.

Education: A process of acquiring the desired knowledge, skills and attitudes

Private demand for education: Enrolment of individuals in an educational system or the total number of individuals who are willing to pay for their education at given cost, time and place.

Policies: Policies are purposeful plans of action to guide decisions on virtual and open learning in order to achieve coherent outcome.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores various literature associated with the influence of virtual and open learning on private demand for education. Besides, the chapter also investigates the concept of virtual and open learning, the status of enrollment in virtual and open learning, the influence of virtual and open education on enrollment, challenges facing virtual and open learning, and summary of literature review.

2.2 The Concept of Virtual and Open Learning

According to Valentine, (2002) virtual and open learning explains any of the various instructional resources. Virtual and Open learning has been there for more than 100 years though it is thought of as a current term. Virtual and Open learning is entitled to suppress traditional education insufficiency. The definition of virtual and open learning has changed due to the transition of technology. For the last two decades, videotaped lectures have been typical in the higher institutions and professional courses (Valentine, 2002). Audiotapes and tutorials assessed through the remit have also been used to teach subjects such as foreign language for quite some time (Ko and Rossen, 2010). Currently, new directions regarding virtual and open learning have been taken by the internet and videos, which are compressed, authorizing virtual and open learning to happen in real-time. Effectual video instruction is the most desired and is quickly increasing conveyance means in the United States (Simpson, 2013). The majority of the promises of DL are monetary. Higher institutions wish to run their programs economically by

using distant learning alternatives to empower learners who cannot make it to the institution's premises daily due to financial or time constraints.

Virtual and open learning fast advanced from the correspondence courses and tapes to the original computer release and the computer-based multimedia applications (Guy, 2009). The full growth technological innovations have enhanced digital learning through the creation of network-based learning that has virtual and open learning suit another wave of learning conventional, due to extensive applications of the internet (Moore et al., 2011). Web-based pedagogy is unlimited, in which the resources are almost infinite. Students could get video, online inquiries, materials of texts, interpersonal interaction through hyperlinks, and figures audio.

Virtual and open learning has, over time, been confused with distance education and instruction, which refers to the process of pursuing a program where the tutor and the student are in different geographical locations. Virtual and open learning concentrate student-centered instructional techniques, allowing learners to sharpen their research skills by doing most of the researches on their own (Huanget al., 2009). The analysis of distance learning took place in 1996 at the American Education Conference. Virtual and open learning was distinct as a system or procedure of creating a connection between the learning resources and the students (Simonson et al., 2014). Perraton, (2012) regarded virtual and open learning as the instruction given during the separation of space and time between the learners and teachers. Button et al., (2014) define Virtual and open learning as a type of learning where tutors and learners are located in different geographical regions but can connect using technology for instructional purposes.

Virtual and open learning keep on being separated by time and space and generally presented by simultaneous and in series (Perraton, 2012). Synchronous activities are defined as several individuals concurrently conveying on the innovative technology-based network, like teleconferencing allowing the involved parties to hear not only the speaker's voice but also see live images. There is an emphasis on autonomy and flexibility in learning in adult education. The nonparallel learning method offered in computer-based network technology includes the resilience of the learning period that students could predate personal and collaborative learning (Ryan et al, 2013). It is approximated that nonparallel computer-based network learning would turn into the orthodox at later time.

2.3 The Current Status of Enrollment in Virtual and Open Learning

Tertiary education has been growing in the past ten years. There has been approximately 35% increase in the enrolment to universities since 2010. In the academic year 2013/2014, the enrolment was 324,000, which was an improvement from 2012/2013, which had 240,551 (Nyangau, 2014). In 2015/2016 academic year, the enrolment number doubled (536,000) that of 2012/2013, which was higher, compared to the Free Primary education, which was introduced in 2003. The aim of free primary was to enable children from poor back to have easy access to education for the betterment of skilled labor. The increase in primary enrolment resulted to increase in the number joining universities as well as secondary schools. The increase in the number of students enrolling to the institutions of higher education has led to expansion in the industrialization vitiating the need of specialization and skilled labor for various sectors of the economy. Due to the advancement in the economy, there has been demand for more skills to fill the industrialization gap. This in turn has resulted to the demand for unequivocal education with

limitless access. The synergy between the economic needs and skill development resulted to the discovery of Virtual and Open Learning. The VOL has been advantageous for people can work while learning. This has resulted to more practical application of the skills learned. More importantly, people are able to learn without neglecting their family. The desire to achieve all the needs resulted to the development of Virtual and Open Learning to accommodate all kind of students for the betterment of the skills.

VOL is described as a strategy of allocating the chances which are more required in university education (Agalo and Agalo, 2014), even though this has not been entirely accomplished in Kenya. In the opinion of Nyerere (2016), inadequate physical and financial capacity in Kenyan universities has affected many individuals; hence, they lack the development of lifelong skills. Agalo additionally notes that VOL is systematically giving an essential substitute means for the marginalized and those limited by time and space to join universities on regular learning. Despite the increased enrolment in virtual and open learning, the benefits have not met the threshold for the need of higher education (Nyerere et al., 2012). This study focused on the challenges affecting VOL as mode of delivery in Kenyan universities. However, the current research will focus on the influence of virtual and open learning on enrollment at Kenyatta University.

The Ominde Commission of 1964/65, the first education commission in Kenya, proposed the offer to come about with VOL. The establishment of an advisory commission to take charge of VOL in Kenya dates back to the Ominde Commission (Kenya Gazette, 1966). The Act of parliament of 1966 together with the establishment of Adult Education at the University of Nairobi was a milestone of the recommendations contained in the Commission's report.

After the Ominde Commission, succeeding similar commissions such as the Gachathi report (1976), Mackay report (1981), Kamunge Commission (1988) and Koech Commission (2000), suggested incorporation of VOL as Kenya's effective modern means of making education accessible efficiently (Nyerere et al.,2012). Moreover, a Section of Paper No. 1 published in 2005 suggested the enactment of a National Open University. However, this is yet to be substantiated, apart from several institutions in Kenya (both private and public) have supported VOL. Some of the leading suppliers include Maseno University, University of Nairobi, Egerton University, Kenyatta University, Mount Kenya University, Masinde Muliro University of Science and Technology, Kenya Methodist University, Moi University, Multimedia University of Kenya and Jomo Kenyatta University of Science and Technology.

The trend of VOL within the nation has increased, as demonstrated by many learners in 2007, advocating for programs that are granted by foreign varsities or in collaboration with local universities. This shows the effects of VOL programs at Kenyan universities since it has become a tedious process of delivery of educational programs (Agalo and Agalo, 2014). Various approaches to convey VOL in Kenya have been discovered. This study focused on the increase demand of universities' education. However, this research focused on the influence of virtual and open learning on enrollment at Kenyatta University.

The majority of the universities providing VOL are ardent about convincing the public, stakeholders and academics about the quality of VOL programs (Ogunlela and Ogunleye, 2015). However, several Lecturers have increased concerns with the quality of learning because of the minimized interaction between the learners and the instructors, due to the nature of VOL teaching methodology. In addition, as Akeusolaet al., (2011) noticed that the experts still believe that "same-time, progress has cleared the skepticism about its quality and same-place"

interaction is the key to the success of the learning experience. The issue now is for the institutions offering VOL to improve and enhance QA systems as a necessary instrument for enhancing public confidence. As highlighted by (Ogunlel and Ogunleye, 2015), transnational qualification and QA guidelines have been discovered nationally and internationally to regulate and guide VOL programs in all institutions. This study focused on the policies regulating VOL. However, the current research will focus on the influence of virtual and open learning on enrollment at Kenyatta University.

Kenya has experienced many issues concerning VOL because many Kenyans do not trust the process, not only the quality of the programs but also the concept of virtual and open learning (Oladokun and Aina, 2011). There have been many arguments on the meaning of VOL and the quality of higher education. Sallis (2014) realized that the quality of university education is a common but difficult concept; it is multi-dimensional and accommodate extensive features, including the process deployed for the attainment of objectives; and to what extent goals are attainable. Kenya is among the countries troubled by embattling the issue of quality of higher education, particularly in Virtual and Open learning (Oladokun and Aina, 2011). From their research, Oladokun and Aina (2011) and Nyerere et al., (2012) they found that there is no similar program for virtual and open learning at the national level. Higher institutions have the responsibility of ensuring the quality of the programs that they offer together with the Commission for University Education (CUE), which has the mandate of approving the courses of all accredited universities across the country. VOL lacks a unique implementation framework, but, as a measure to identify the significance of quality learning through VOL, institutions are coming up with strategies to enhance quality. The higher institutions have same methods to quality assurance by using seven critical areas of institutional activities that have an impact on

VOL delivery: curriculum and instruction, the mission of the institution, institution structure, materials, faculty assistance, student learning results and student support (Park and Choi, 2009).

The research was carried out in 2020 while the previous was carried out in 2012.

2.4 The Influence of Virtual and Open Learning on Enrollment

Virtual and open learning is known at higher institutions of learning since it is available and flexible to both teachers and students regardless of their geographical position. Individuals and organizations are considering open education since they can learn while doing other responsibilities. Studies have indicated that the benefit of virtual and free learning is clear, explainable and are being accepted quickly. However, there has been a debate that the quality of instruction might be below. The quality is not compromised. Several reasons play a significant role in its progression; firstly, it opens new opportunities for learners who might not be able to take part in the learning process. Secondly, it allows the university to enroll many learners with fewer instructions hence offering a cost-effective strategy of delivering university education. Thirdly, learners can prove lifelong learning after graduation, regardless of lifestyle or location (Hart, 2012). This study focused on characteristics of VOL. However, this research focused on the influence of virtual and open learning on enrollment at Kenyatta University.

Due to this success, the advantages of VOL have caused higher education institutions to execute some VOL classes, even if on an experimental term. Consequently, society, in general, can significantly access education and increase their literacy skills (Hart, 2012). The growing need for adult training, the emphasis on lifelong learning, and the significance and value of VOL has become widely known (Rumble, 2012). Concerning the United States' Department of Education (2001), the number of Virtual and Open learners has increased faster than the regular students.

The growth of VOL enrolment in tertiary institutions requires a more flexible and different delivery system to meet learners' needs and interests (Anderson and Dron, 2011). VOL is purposed to ensure agreement with the features of the adult learner, and by maintaining their employment while studying, virtual and open students can continue to gain in work experience while pursuing the goals of education (Mehdipour and Zerehkafi, 2013). This study focused on flexibilities of VOL. However, this research focused on the influence of virtual and open learning on enrollment at Kenyatta University.

As stated by Simonsnet al., (2014), DE means that learners can access more and better learning materials than in the past. Rural and inner-city learners can enroll in courses that were only available to local places. Disabled learners can have access to the same classes as everyone else if they are institutionalized. Adults can develop their career or necessary skills if they get specialized training without being away from workstations or home. Learners can learn from teachers and fellow learners in other countries. Generally, DE creates many new learning opportunities for many individuals (Simonsonet al., 2014). This study focused on access of education by people living with disabilities and employed students. However, this research focused on the influence of virtual and open learning on enrollment at Kenyatta University.

Adult learners differ from regular students. The majority of adult students have roles (e.g., families' positions and jobs to attend) and experiences (e.g., the need to earn an income Transportation, childcare, and domestic violence) that can hinder learning from taking place. Many Kenyans join graduate studies when their lives are full of interruptions. Part-time students go to the lecture rooms with distractions in their minds (Nyerereet al., 2012). Most adults enter educational programs voluntarily and can manage to study around work and family roles. The findings of a survey done by Nyerere et al., (2012) on telecourse participants were that about

two-thirds were female, and half of the learners were above thirty years old. More than half had a minimum of one dependent, and two-thirds were married. Eighty percent were employed, and more than half were employed full time while studying (Sheets, 1992). According to Park and Choi (2009), data that is more current seem to concur with these statistics. Over seventy percent of VOL graduates were in full-time employment. This concludes that big percentages were employed while they were studying. The research was carried out in 2012 while this study was carried out in 2020.

2.5 The Challenges Facing Virtual and Open Learning

In an era of globalization and competition for strategic gains and materials, even the longest, enacted, and most successful institutions must guard their positions through continuous enhancement. The distance education providers and advocates of information communication technology (ICT) integration need to tell the world their success story. Realities in our universities show a higher market. The potential of the market and the education and logistical issues are underestimated. Furthermore, the facts of ICT infrastructure, accessibility and costs, and overestimation of learner readiness for e learning are ignored. There is an enrolment on a large-scale online learning programmes and programs without previous tryouts. At issue is the insensitivity or slowness in responding to customers' expectations and the essence of not obtaining accreditation. Equally perplexing in most of our universities is the fact that they do not adhere to the learner's expectations, especially regarding the support of the learners, likewise do offer incentives for endless private sector involvement in the partnership (Mupinga, 2005). This study focused on the effect of ICT on VOL. However, the current research will focus on the challenges facing VOL in Kenyatta University.

Virtual education holds promises; however, a few obstacles are to be taken into consideration before it can be wholly utilized in Africa. There is an issue in making a national distance educational strategy, which is the connectivity beyond main capital towns. Another problem is inadequate cadre expert to second the execution of the distance education. A research done in Zimbabwe shows that many instructors (97.5%) teaching VOL did not need expertise in VOL (Mupinga, 2005). Effective use of VOL technologies commands that teaching personnel should have adequately acquired skills through the utilization of distance learning. Today, a limited number of African tutors have acquired the competency of online instructional techniques. Such a situation has presented a crucial problem in the introduction of VOL education in African Universities. According to a study carried by the United States' National Education Association (NEA), teaching personnel is concerned about the workload and the amount of money paid. The NEA (2000) realized that lecturers do spend a lot of time on their VOL courses than regular courses, and 84% of them do not get a minimal workload. Correspondingly, 63% of lecturers get additional compensation for their distance programs. This study focused on the effect of the digital literacy on VOL in Zimbabwe. However, this research focused on the challenges facing VOL in Kenyatta University.

One must develop digital learning artifacts such as units (programs) and learning objects due to linked e-learning (IEL). A critical issue for organizations when introducing e learning is dealing with the development procedure of digital learning artifacts. The development process is complicated and expensive. Possibly, the most challenging point is that the teacher is traditionally responsible and cannot offer the anticipated quality of the units of learning.

Another challenge is caused by a lack of clear national policy regarding distance education in most African nations. Favorable policies should be put in place to enhance a structure facilitating

the development of virtual and open learning programs. Except for South Africa, only a few African nations have appropriately described national programs to act as a guide to the improvement of distance education. Lack of these policies indicates constraint to the advancement of Virtual and open learning. For example, problems concerning the learner empowering services, as demonstrated in a study conducted in Botswana that revealed that the biggest problem that VOL instructors are facing are the minimum student support (Sikwibele and Mungoo, 2009). However, it was solved with the creation and mediation of different connectivity among the institutions and learners. The learners' core support could be attained through secure connectivity with their tutors (Macintyre & Macdonald, 2011). Besides, it may perhaps improve along with providing internet connection that remains to be a significant issue in Africa, particularly in rural settings. This study focused on the effect of the internet on VOL. However, this research focused on the challenges facing VOL in Kenyatta University.

A study by Akande (2011) exploring the usage of library and information materials by open learning students of three Nigerian higher institutions. Their search utilized questionnaires and observations as data collection methods. According to the study, the selected institutions did not give the information needs of the open learners appropriately. Adesoye and Amusa (2010) later confirmed the findings of Akande's study. They also used questionnaires to investigate the information demands of sandwich and part-time learners of two public institutions in Nigeria. Their research established that the selected institutional libraries did not encounter the student's information needs mainly because of insufficient library facilities, ICT and library use prowess. These two studies carried out in Nigeria utilized the questionnaire method, while this study utilized questionnaires and interview methods. The study population of this study comprised of

VOL students, the virtual and open learning coordinators, unlike in the other Nigerian studies, which surveyed distance students only.

Oladokun and Aina (2011) carried out a study on VOL about the effect of the digital divide on data access in Botswana. The study used the questionnaire to survey students from four institutions, namely, the University of South Africa (UNISA), the University of Botswana (UB), the Management College of South Africa (MANCOSA), and the University of Derby (UD). The study addressed issues like the use of ICTS to adhere to open learners' data needs, access to information materials and services by virtual and open learners, and also investigated whether distance learners were equipped appropriately to make use of the ICT. The findings of the research disclosed that there exists a digital divide between the learners in the city and those in rural locations. Accessibility and availability of digital materials by open learners is seen to have a location aspect; in that case, it is more available to access information in urban areas than in rural locations. This study focused on the effect of the digital divide on data access in Botswana. However, this research focused on the challenges facing VOL in Kenyatta University.

A research was carried out by Nyaoga et al., (2010) to investigate the administration of distance education at the University of Nairobi, found out that one of the essential findings of the study was that access to the library was a big problem to VOL students of the University of Nairobi as in most cases they came from distant places come from remote areas where libraries were not available, hence they could not do their assignments well or get books for reference. A study was conducted by Kavulya (2004) to investigate the issues in access to library services for VOL. This was a multiple case study of preferred universities in Kenya, namely, the African Virtual University (AVU), United States International University-Africa (USIUA), Kenyatta University, and the University of Nairobi. Data collection was done through interviews with the University

Librarians of the selected cases. The main challenges unearthed by the study were: lack of institutional programs that act as a guide to the provision of information for virtual and open learners; inadequate planning of open education courses; insufficient physical structures and professional personnel; inadequate funding of university libraries and weakly developed internet infrastructure in Kenya. This study focused on how infrastructure affects VOL. However, this research focused on the challenges facing VOL in Kenyatta University.

According to a study by Nyerere et al., (2012), 68% of the Lecturers who teach these courses had not been provided with unique preparation on the implementation of viable Virtual and open learning strategies. It is necessary to note down that proper training is vital in supplying quality virtual and free learning, yet in the effort to get virtual and open learning courses into existence in Kenya, lack of composition period and financing has been given to staff development. Feedback from the study's respondents revealed that they agreed to have received preparation on this mode of education delivery substantially through indoor sessions that were done by the University of Nairobi Centre for Virtual and open learning. Majority of the respondents had the feeling that it would be indispensable for them to receive and get training on the VOL teaching methods.

According to a study done at the University of Ghana to investigate the challenges facing open and distance student by Martey (2004), the study observed that virtual and open student faced challenges like; inadequate infrastructure and info-structure, inadequate staff appraisal or sustainable career structure, lack of enough instructional resources, teaching and learning necessities. Other challenges encountered include; reducing standards in quality with student attainment exam outcome comparing unfavorably with other nations in the region, insufficient financial aid from the government, inadequate monitoring of the management, inappropriate

directional, meaningful and functional curriculum and lack of orderly method in ICT use in distance education settings in mandate to find out the potential of ICTs to curb issues in the distance education structure. The research was carried out in 2020 while the previous was carried out in 2012.

2.6 Summary of Literature Review

It is clear that inadequate physical and financial capacity in Kenyan universities affects many individuals hence lack the development of lifelong skills. There has been an increasing trending in VOL within the nation since 2007. This study focused on inadequate resources in Kenyan universities. The research emphasized on the status in enrollment in virtual and open learning at Kenyatta University.

It is clear that VOL allows the university to enroll many learners with fewer instructions hence offering a cost-effective strategy of delivering university education, and learners can prove lifelong learning after graduation regardless of lifestyle or location. The disabled learners can access to the same courses as everyone else if they are institutionalized. This study focused on the increase in access to Kenyan universities. However, this research focused on the influence of virtual and open learning on enrollment at Kenyatta University.

The learners' core support can be attaining through secure connectivity with their lecturers. In addition, it could improve along with providing internet connection that remains to be significant issues in Africa, particularly in rural settings. The usage of library and information materials by distance learners of three Nigerian higher institutions and the selected universities did not provide the information needs of the virtual and open learners appropriately. More so, there was digital divide between the learners in the city and those in rural location. It is easier to access

information in urban areas than in rural locations. This study mainly focused on challenges facing Virtual and Open Learning in Nigerian universities. However, this research focused on challenges facing virtual and open education in KU.

Based on the above literature reviewed, there was evidence that there existed a gap, which the researcher intended to fill by determining the influence of virtual and open learning on private demand for education.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The section comprises of the research design, variables, and locale of the research with its target population, the sampling techniques used and respondents' sample size, research tools, piloting study, validity, reliability and data collection techniques. It also indicates how the data was presented and analyzed, finally logistical and ethical considerations.

3.2 Research Design

According to Kombo and Tromp, (2006), research can be viewed as outlines, schemes, or plans that were utilized in the creation of solutions to tackle research problems. The study used a descriptive survey design that is deemed ideal for amassing information concerning attitudes, perceptions, opinions, knowledge habits, or any other social and education issue of people (Kombo and Tromp, 2006). The choice for this design was suitable because it allowed the researcher to collect in-depth information on respondent's attitudes, opinions, and perceptions concerning the influence of virtual and learning on private demand for education.

3.2.1 Variables

According to the research, the independent variable was virtual and open learning, dependent variable as private demand for education, and intervening variables was perception.

3.3 Location of the Study

The location of the study was in Kenyatta University. KU is situated approximately 23 kilometers away from the central business district of Nairobi along Thika Super Highway on a 1,100-acre land. The mandate of the university includes teaching, research and community service. The university has rebranded its virtual and open learning to include e-learning (digital school), which is geared towards improving the delivery of educational services to students. Kenyatta University is one of the best public university in Kenya and has well established digital school.

3.4 Target population

The aim population of this research was 1153 enrolled VOL students and 6 digital school coordinators from Kenyatta University to act as key informants.

Table 3.1 shows the summary of the target population from Kenyatta University, where the study was carried out.

Table 3.1: Target Population Size

	Programme	Year of study				Population Before stratification
		1 st	2 nd	3 rd	4 th	
Male students	VOL	120	131	101	95	447
Female students	VOL	201	195	187	123	706
Coordinators	VOL					6
Total population						1159

Source: Researcher's (2019)

3.5 Sample Techniques and Sampling Size

3.5.1 Sample Techniques

The researcher used a simple random sampling technique to select 200 virtual and open learners from Kenyatta University. Gay, (1992) recommend that a sample size of at least 10% of a large population exceeding 1000. The method was considered appropriate since all virtual learners were given an equal chance of being selected. Purposive sampling was used to pick three Digital School co-coordinators from Kenyatta University. Purposive sampling was the appropriate technique since the researcher was interested in obtaining information from individuals who hold valuable information considered relevant to the open learning and are directly involved in the supply of VOL in the Kenyatta University.

3.5.2 Sample Size

Table 3.2 below shows the study sample size from Kenyatta University, where the study was carried out.

Table 3.2: Respondent Sample Size

	Programme	Year of study				Population Before stratification	Sample Total	%
		1 st	2 nd	3 rd	4 th			
Male students	VOL						100	23.4%
		120	131	101	95	447		
Female students	VOL						100	14.2%
		201	195	187	123	706		
Coordinators	VOL					6	3	50%
Total population						1159	203	17.5%

Source: Researcher's (2019)

3.6 Research Instruments

Questionnaires and interviews were used in this study as the research instrument.

3.6.1 Questionnaire

To gather data, the researcher used one questionnaire. The questionnaire consisted of both open-ended and closed questions. They were meant for virtual and open learners at Kenyatta University. The questionnaire was advantageous since it could be easily administered to VOL students; it was cost effective, familiar and saved time since respondents required only a few minutes to give responses. The survey had the benefit of ensuring the possibility of reaction measures of most respondents to a narrow set of questions, therefore enabling assessment and statistical collection of data. The questionnaire had four sections; Section A: demographic information, Section B: the status of enrollment in virtual and open learning, Section C: the influence of virtual and open learning on enrollment, Section D: the challenges facing virtual and open learning, Section E: the strategies addressing challenges facing virtual and open learning. The introduction letter was to explain the aim of the study.

3.6.2 Interview Guide

The researcher had an interview guide to carry out one on one interviews with the Digital School co-coordinator at Kenyatta University. The interview method for collecting data had various advantages. The significant advantage was that the researcher was entirely in control of the interview position. Interviews also permitted respondents to provide detailed personal information. The use of the interview technique facilitated more detailed responses from the respondents and allowed the probing of respondents. Interviews also had the merit of high

response rate, had the opportunity to clarify any ambiguity. It was not time consuming and follow up was made in case of incomplete answers (Kombo and Tromp, 2006).The interview schedule was designed to obtain data on the encountered challenges of the institution in program provision, and what the individuals feel is necessary to discourse the obstacles.

3.7 Pilot Study

Before the actual study, a pre-study was conducted in other university offering virtual and open learning like the University of Nairobi to improve an instrument used in research in the process of data collection in the primary research. The dummy research included ten (10) virtual and open learners and two digital School coordinators. The purpose of the trial was to enhance consistency and content instrument validation by refining vague statements in the instruments or removing them altogether. The respondents taking part in the trial study were excluded from the main study.

3.7.1 Validity

Validity shows the capacity to which a measuring tool measures what it is thought to measure (Kothari, 2004). The researcher issued questionnaires to the classmates to assess the questionnaire clarity and interview guides to modify those that were seen to be inadequate to improve the research instrument quality. The supervisor and experts read the questionnaires, comparing it to the research questions to ascertain their relevance in meeting the objectives of the study.

3.7.2 Reliability

Reliability refers to the range that a particular tool regularly produces outcomes that are similar when research measurements are taken from the same subject, and the same condition is repeated (Kombo and Tromp, 2006). Reliability in the study was predisposed by random mistakes, which was deviated, beginning with the correct dimension. Having done away with the pre-test, the split-half technique was used to test reliability for the students' questionnaire. Split-half technique refers to safety founded on the coefficient of internal uniformity of a questionnaire that is used as a research instrument. This technique of split-half equally divides the tool in terms of both odd numbers and even numbers once ordered. The similarly divided instruments are scored self-reliantly having the instruments' items march on difficulty and content wise. When the scores of the instrument halves had a high correlation coefficient, this indicated that they had high positive association thus rendering the test reliable (Kombo and Tromp, 2006). This method was used due to its capacity to measure the instruments' internal consistency. Despite the other methods of measurement such as test-retest technique, the preferred method in this case was the Split-half technique due to its capacity to accommodate environmental and time variations.

In this study, ten students' questionnaires and two-interview guide for coordinators were used for pre-testing purposes. In the open-ended question, scores were as follows: a mark was awarded for relevant responses, inappropriate response was awarded a zero mark as well as for responses that were blank. In the case of digital coordinators and VOL students, their selected questions were separated equally into half. Thus, taking the even against the odd numbered items. Split half measure was used for reliability bringing in interrelation between the scores of the halves. Calculation on the obtained scores for every respondent based on the even items and odd items using Pearson Product Moment Correlation Coefficient. The interview guide for coordinators

generated 0.89 half-test coefficient whereas the questionnaire of the students produced 0.82 half-test coefficient. At that point, Spearman-Brown Prophecy formula was used to get the subjects' scores for the full test.

$$r_f = \frac{2r}{r + 1}$$

Full test formula used gave 0.94 and 0.90 total test coefficient for the students' questionnaire and digital coordinators interview guide correspondingly. In research, from the general rule of thumb, the instruments were therefore rendered reliable. The general rule allowed one to estimate rapidly every time a huge calculation was mandatory whereby, the reliability ought to be at least 0.70 (Kombo and Tromp, 2006).

3.8 Data Collection Techniques

The researcher obtained an introduction letter from school of postgraduate Kenyatta university which ensures authorize application of the researcher from the Ministry of Education Science and Technology, and Kenyatta University Ethics Review Committee. The research consisted of both primary and secondary data. Interviews schedule and questionnaires were used to collect the primary data. Before collecting data, the researcher obtained a data collection permit from Deputy Vice Chancellor, Research, Innovation and Outreach. The VOL students were accessed at the main campus during their contact sessions. This was important since all the students from various campuses were present. For interview, the researcher booked an appointment with the digital school coordinators to conduct the interview and every interview was supposed to take not more than 30 minutes.

3.9 Data Analysis

Table 3.3: Data analysis procedures

Objectives	Data Collected	Data Analysis Technique	Data Presentation
i)	Qualitative	Thematically	Content Narration
	Quantitative	Descriptive Statistics	graph and percentages
ii)	Qualitative	Thematically	Content Narration
	Quantitative	Descriptive Statistics	graph and percentages
iii)	Qualitative	Thematically	Content Narration
	Quantitative	Descriptive Statistics	graph and percentages

Source: Researcher's (2019)

3.10 Logistical and Ethical Considerations

Participants were permitted to decide on whether to participate or not in the study. Respondents' privacy and anonymity was considered by requesting respondents not to write down their names in the questionnaire during the study. The researcher identified himself first to the respondents. Then the researcher sought consent of the respondent before administering questionnaires or conducting the interviews. Information obtained from them was considered private and could not be disclosed to any other third party as it was only for the purpose of the study.

As a logistical measure, research permit was sought from Kenyatta University ethics review committee, National Commission for science, technology and innovation and Deputy Vice-Chancellor, innovation and outreach. The permits allowed the researcher to conduct the research.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND DISCUSSION

4.1 Introduction

This chapter presents, interprets and discusses the data collected during the fieldwork. The data was presented according to the objectives of the study. The objectives of the study were to: Determine the status of enrollment of virtual and open Learning in Kenyan University; Establish the influence of virtual and open Learning on enrollment in Kenyan Universities, and Establish challenges those are facing virtual and open Learning in Kenyan universities.

4.2 Response Rate

The response rate was proportional to the sample, which was involved in all the procedures of the research. In study, 200 virtual and open learning students, and 3 coordinators from digital school were sampled from all years of study. Among 200 questionnaires that were given to VOL students, 192 of them returned the questionnaire which represent (96%), and 3 (100%) were interviewed. This return rate was deemed adequate for the study (Kombo and Tromp, 2006). This creditable response rate was made a reality after the researcher made personal visits to remind the respondent to fill-in and return the questionnaires.

4.3 Demographic Information

4.3.1 Gender of the Virtual and Open Learning Students

Gender is a significant aspect of understanding social relations within a community. It represents how communities construct social reality around males and females and the resultant allocation of roles to the different gender. Gender was considered an instrumental variable during the study

because it portrays similarities and differentials in the career lives of the respondents because of their gender affiliations. The genders of the respondents are, as shown in figure 4.1.

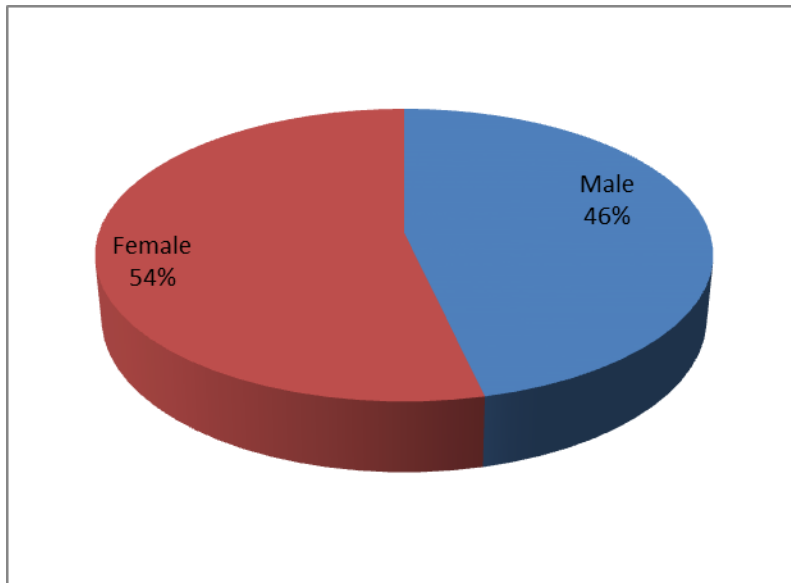


Figure 4.1: Gender of the Virtual and Open Learning Students

Source: *Field data (2019)*

Figure 4.1 shows that more than half (54%) of the respondents were female, while the remaining 46% were male. The participation of at least one third of each gender in decision-making and discussion regarding VOL was vital in relation to the Kenya Constitution (2010), which advocate for equal changes for both genders. More so, the higher proportion of women was explained by their flexibility and accommodative qualities of VOL that allow them to attend full times jobs and family responsibilities.

4.3.2 Marital Status of the Virtual and Open Learning Students

Marital status indicates whether a person is married or single. This was extended to include other descriptors, such as divorced, widowed, cohabiting, civil union, and many others, which are all seen as a single from a legal standpoint. The world over, and more so, in African societies, the

place of the family is not substitutable given the fact that families often form the primary unit of socialization, which to a greater extent, forms the bedrock of behavior adoption. Figure 4.2 shows the findings of the study.

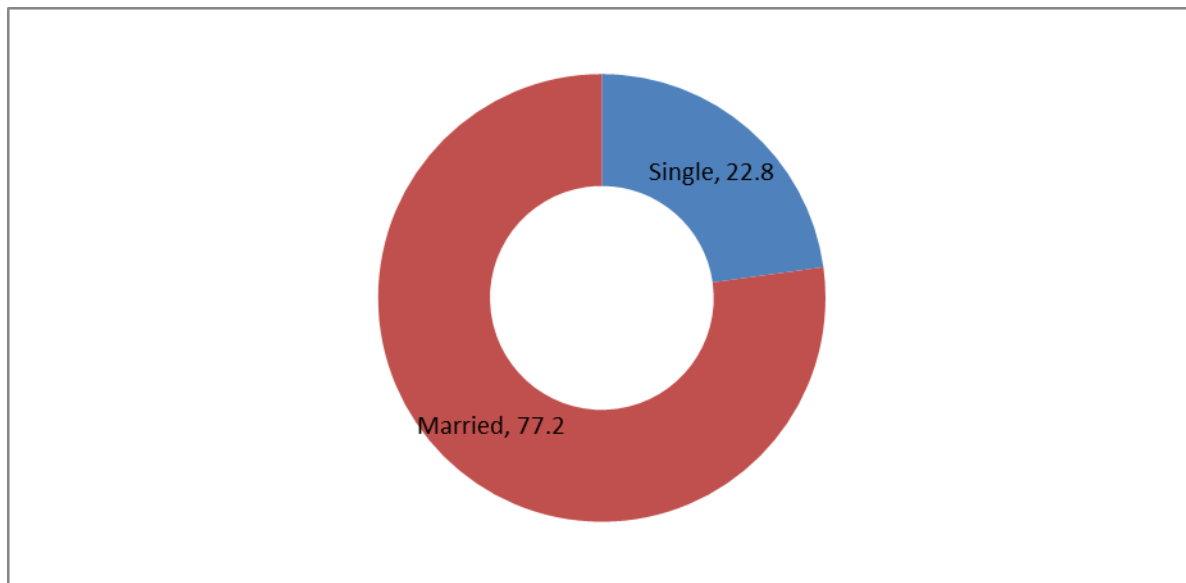


Figure 4.2: Marital Status of the Virtual and Open Learning Students

Source: Field data (2019)

The study finding in Figure 4.2 portrays that more than three-thirds (77.2%) were married. The higher proportion (77.2%) of the respondents in the study was married, indicating the appropriateness of the VOL mode of education for people with families. In contrast more than one fifth (22.8%) of the participants were not in any marital relationship because of different reasons. Most of the married students preferred the VOL due to the flexibility and accessibility as they care for their families. This study finding was in line with the results of Akande, (2011) who found out that more than 60% of VOL students were married. Inadvertently, most married people prefer VOL mode because of its flexibility and accommodative qualities, which allows them to study as they carry on other duties.

4.2.3 Age of the Virtual and Open Learning Students

Age in this study was a critical component because it demonstrated the group that was most economically productive and one that would tap into the VOL. Additionally, by surveying the different age groups was vital in understanding the preferences of each age group for the sustainability of VOL. More importantly, age helped in understanding the number of years students spent on the completion of their various courses from the university using VOL. The study findings on age are presented in Figure 4.3.

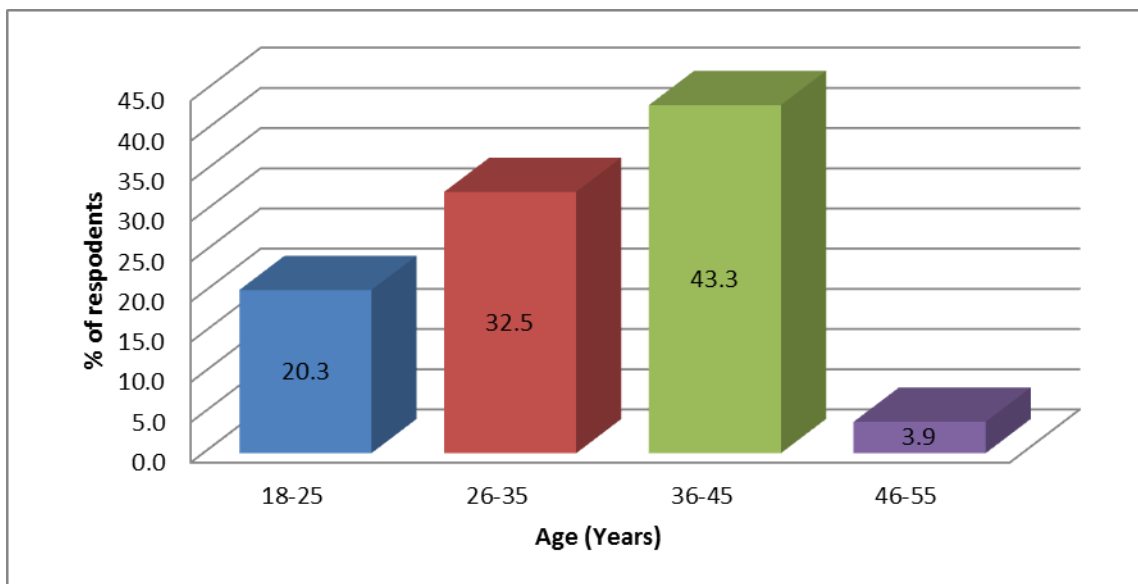


Figure 4.3: Age of the Virtual and Open Learning Students

Source: Field data (2019)

Findings in Figure 4.3 reveal that 43.3% of the respondents were 36-45 years, 32.5% were 26 to 35 years and 20.3% of the respondents undertaking their academic programs through VOL were aged between 18 and 25 years while small proportions (3.9%) of the respondents were 46 to 55 years. Consequently, more than half (52.8%) of the respondents were youths. The youthful age within which many respondents were considered appropriate for skill training; therefore, it was imperative to get information from this group and their view on VOL. This study was in contrast

with Nyerere, (2012) who found out that 50% more of VOL students were above thirty years. Coincidentally, moderately aged people prefer VOL mode because of its flexibility, which allows them to study as they carry on other duties.

4.4 Reflections of the Results on the Current Status of Enrollment of VOL

4.4.1 Enrollment to VOL for the Last Three Years

The researcher investigated the total number of VOL students' enrolled programs between 2017-2019. This was because enrollment to VOL as compared to the total population of Kenyatta University students' population indicated the influence of VOL to private demand for education and if the enrollment rate was increasing, which were among factors influencing the increase of enrollment rate. The enrollment of VOL students is well illustrated in Table 4.1.

Table 4.1: The Students in VOL for the last three years in KU

Year	The total population KU students	Total number of VOL Students	Percent of VOL student of KU students' population
2019	67,019	2575	3.7%
2018	67,297	2015	2.9%
2017	67,425	1658	2.4%
Total	63,954	6248	8.9%

Source: Field data (2019)

The study findings in Table 4.1 revealed that VOL students in 2019 were 3.7% of KU students' population, which was an increase from 2018, which was 2.9%, and in 2017, it was 2.4%. This implies that the enrollment of VOL students has been increasing since 2017. This study concurs with Hart, (2012) who found out that enrollment to VOL have been increasing over the years due advance of technology proficiency.

Therefore, in the year 2019 the population of VOL students is 8.9% of the KU entire population of 63,954 students. This is because of the high demand for higher education; the VOL program was offering most of the courses and flexibility of the program. One of the coordinators indicated that;

The number of the courses provided through VOL program have increased and society have changed perception towards VOL, which resulted in high enrollment rate to the program for the last three years (coordinator A).

4.4.2 Respondents' Level of Education

The research also established the academic qualifications that the respondents were achieving after their university education. This is because the Virtual and Open learning platform offers a wide array of courses that are in the humanities, human health, social, education, agriculture, animal health, and hospitality categories. Moreover, these courses are offered at undergraduate and post-graduate levels. The various academic qualifications attained by the respondents from the university are illustrated in Figure 4.4.

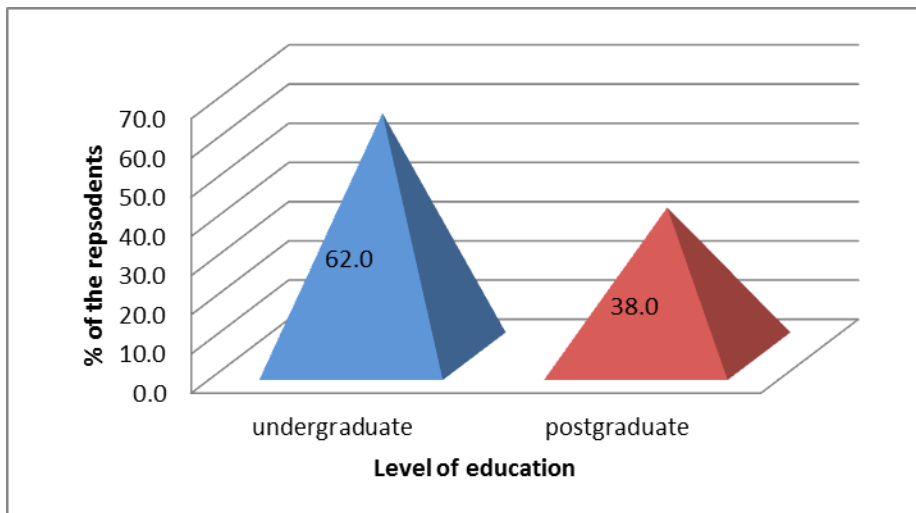


Figure4.4: Degree level of the Respondents

Source: Field data (2019)

The study findings revealed that majority (62%) of those who participated in the study were undertaking undergraduate degrees from the university. Additionally, 38% of the respondents were undertaking post-graduate studies from the university at masters, postgraduate diplomas as well as doctorate degree. Consequently, the higher proportion 62% of the participants indicated that majority of the students are likely to enroll in the undergraduate programme as compared to post-graduate studies due to the content covered as well as the flexibility.

4.4.3 The Current Year of Study

The year of study was considered imperative for experience in learning through the VOL platform. More importantly, this variable provides the opportunity to evaluate the performance of the respondents, as well as the progress they have made in their careers since joining the virtual and open Learning. This helps in assessing the importance of the knowledge and expertise of the respondents in their professional fields. The years of study for the respondents are as illustrated in Figure 4.5.

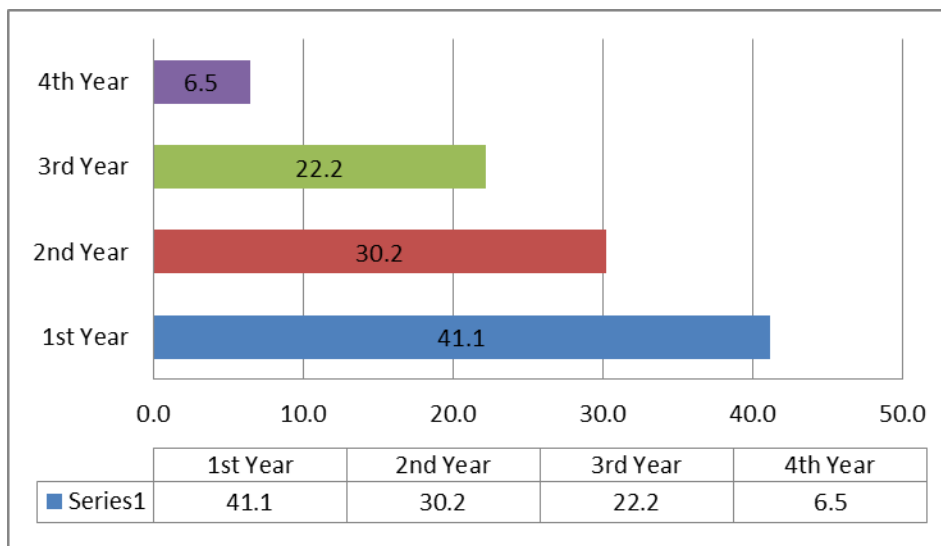


Figure 4.5: Year of Study of the Respondents

Source: *Field data (2019).*

Study findings in Figure 4.5 revealed that most of the respondents (41.1%) were in first year, 30.2% attested to be in the second year, 22.2% in the third year, while a small proportion 6.5% were in the fourth year of their study. Consequently, more than half of the respondents (58.2%) were in their second year of study. The findings implied that most students had enrolled to the VOL in the last two years, which confirmed earlier finding in Table 4.1 on the enrolment of students in the last three and the indicated increase of student joining university education through the virtual learning.

4.4.4 Number of Years the Course will take

Further, the respondents were required to indicate number of years to be taken to complete their academic career from the university. Ideally, it is easier to complete some academic qualification within a short time such as the postgraduate other than undergraduate. The time taken to complete academic qualification also shows the hardship students have to go through in management of the virtual and open Learning. The time taken by the respondents to complete their programs is as shown in Figure 4.6 below.

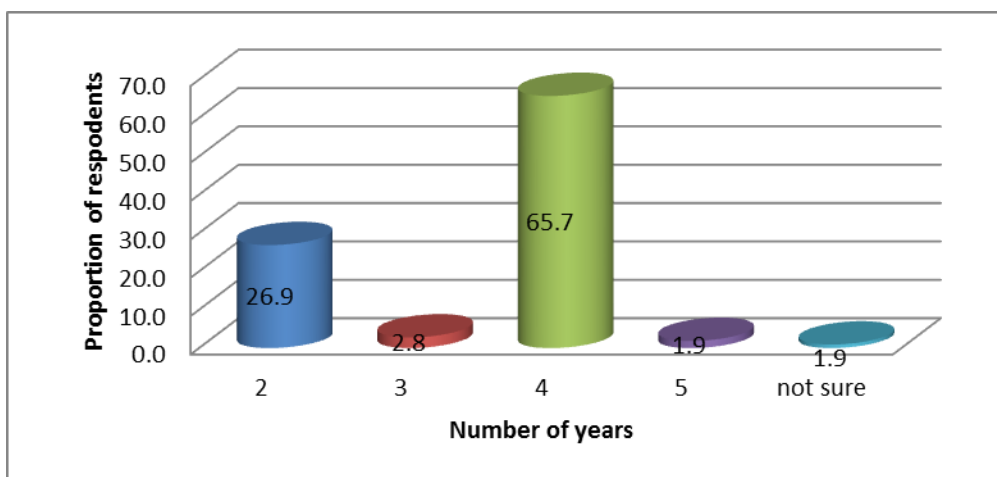


Figure 4.6: Years taken to complete various degrees pursued

Source: Field data (2019)

The study results indicated that 65.7% of the respondents were to complete their academic qualification within four years; 27% were to take two years to complete their academics, 2.8% were to take three years. However, 1.9% of the respondents were to take 5 years to complete their degree, and additionally, 1.9% of respondents were not sure the time they would take to complete their studies in the virtual and open platform. This indicates that majority of VOL students graduate within a period hence encouraging more learners to enroll in VOL. This study concurs with Garrison, (2000) who found out that more 95% of VOL students were graduating within expected timeframe while about 5% needed extra time to complete their studies due to other factors.

4.5 Reflections of the Results on the Influence of Virtual and Open Learning on Enrollment

4.5.1 Employment status of students

The respondents were asked to reveal their employment status. The status of employment of respondents was essential to this study, given that university education aims to prepare individuals for the job market. The employment status of the respondents, as such, sheds light on whether virtual and open Learning was for the employed or unemployed. The employment status of the respondents is illustrated in Figure 4.7 below.

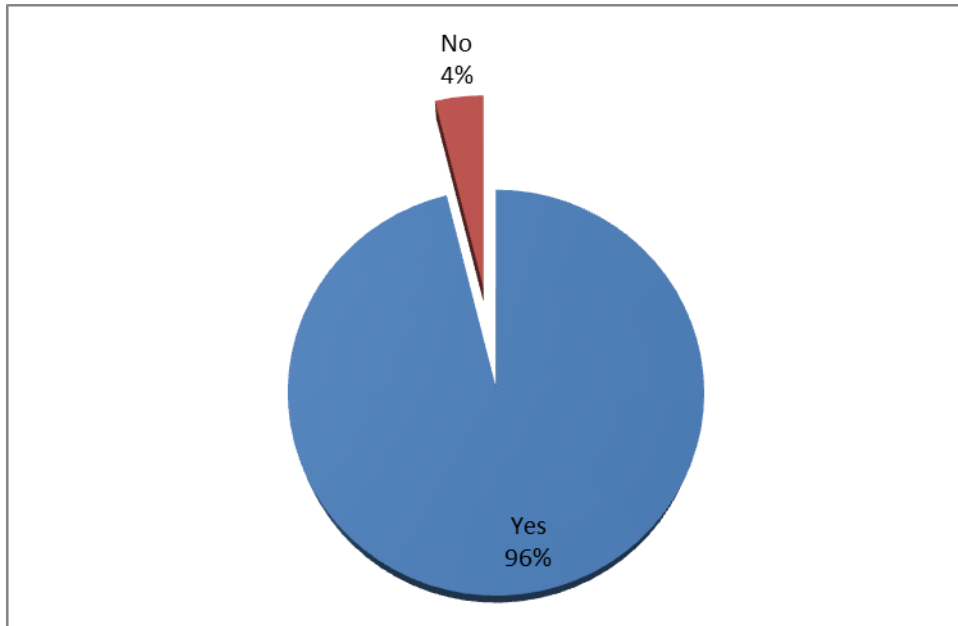


Figure 4.7: Employment Status of the Respondents

Source: *Field data (2019)*

Findings from the research established that 96% of the respondents came from the employment sector, while 4% of the respondents indicated they were not employed. This implies that many of the students work while studying. This study concurs with Martey, (2004) who found out that more than 70% of VOL students were employed while studying due to the flexibility of VOL.

4.5.2 Perception of students on the Influence of Virtual and Open Learning on Enrollment

The main objective of the study was to explore the connection between enrollment of virtual and Open Learning. This study attempted to establish how virtual and open Learning influenced enrollment of students in the platforms. Findings on the perception of students concerning the association between enrolment and virtual and open Learning are carried in Figure 4.8.

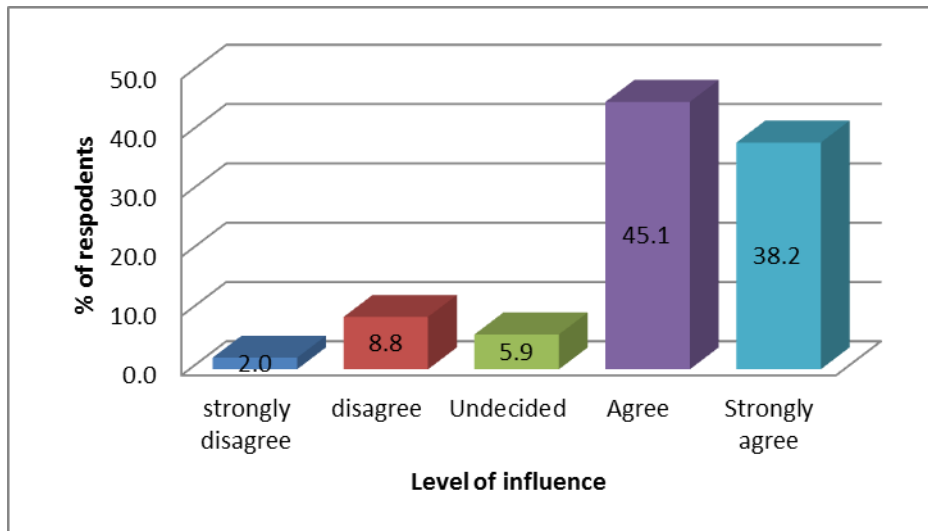


Figure 4.8: Perception on the Influence of Virtual and Open Learning on Enrollment

Source: Field data (2019)

The study reveals that 83.3% of the respondents were in the opinion that virtual and open Learning influenced enrolment of students with 45.1% and 38.2% agreed and strongly agreed respectively that the mode of study influenced admission due to its flexibility, affordability, it aids students who cannot study fulltime, allow people work while studying, contrary 10.8% disagreed with the opinion that the mode of study influenced the enrolment of students in the study program for the slow rate of adaptability, managing work and school at the same time and other cases stress of exams. This study, therefore, agrees with Nyerere et al., (2012), who argue that VOL influences enrollment due to flexibility and affordability. Results from key informants indicated that the enrolment of students into the VOL has increased over time for their 6,248 students in the platform, and this represents 8.9% of the entire students' population of KU. One of the Coordinator indicated that:

VOL has given majority employed, people living with some disabilities, and those who came from very far a chance to continue with their studies due to its flexibility and accommodative qualities and affordability, which resulted in increasing of enrolment for the past four years (coordinator B).

More profoundly, another coordinator added that:

Due to promotion anxiety by most of employed civil servant prefer enrolling to VOL which flexible and manageable by working-class hence resulting in increase of enrollment (coordinator C).

These findings were supported by the earlier trend in Table 4.1 on enrolment in Kenyatta University since it had improved for the past years for they worked there for more than four years and being able to observe the patterns wherein the year 2017, 2018 and 2019 students in the platform represented the following percentages 2.4%, 2.9% and 3.7% of entire students' population of KU respectively. This finding was in line with those of Duke et al., (2017) who found out that virtual and open education enrollment increased for the years.

4.5.3 Perception on the Influence of Availability of Infrastructure on Private Demand of Education

The respondents were asked to state the extent at which infrastructure related factors contributed to their enrolment and learning via VOL. The study findings are presented in the table 4.2 below.

Table 4.2: Influence of Availability of Infrastructure on Private Demand of Education

Item	Very great extend	Great extend	Moderate extent	Low extend	Not at all
Adoption of Technology	34%	42.5%	13%	7.5%	3%
Availability of computers	26%	18%	37%	17.5%	1.5%
Network connectivity	35%	52%	10%	3%	0%

Source: Field data (2019)

The study results in Table 4.2 shows that the adoption of technology by students in various parts largely (76.5%) influences the enrolment and adoption of Virtual and Open learning among the students. The study further revealed that the availability and access to computer did not greatly affect the enrolment and adoption of VOL since students could use their mobile phones to access the platform. Lastly, Table 4.2 portrayed network connectivity was a great influencer (87%) in access and enrolment to the VOL platform. Network connectivity and access is exaggerated by the remote areas where students were living and network signal were weak hence interfering with the connectivity. The study ascertained that availability of infrastructure ranging from the adoption of technology by different people and access to computer greatly influence the participation in VOL. Different parts of the nation have varied internet access which greatly influence the access to Virtual learning. Kenyatta University advancing on provision of equipment and required infrastructure will greatly influence the enrolment rate to VOL. This study concurs with Martey (2004), who found out that adoption of technology by students and network access influences enrolment to VOL programme.

4.5.4 Perception on the Influence of Instructor Character on Private Demand of Education

The characteristics of the tutor were considered imperative for they were the ones to interact with students during the learning in VOL platform. The students were asked to provide their views on the influence of instructor characteristics on learning in VOL platform. The study findings are illustrated in the table 4.3

Table 4.3: Instructor Character on Private Demand of Education

Item	Very great extend	Great extend	Moderate extent	Low extend	Not at all
Technology knowhow of the instructor	22%	61%	5%	10%	2%
Level of knowledge of topics covered and ability to expose students	18%	60%	12%	8%	2%
Instructors support of VOL to the students in navigations of the platform	60%	26%	8%	4%	2%
Instructors attitudes toward VOL	22%	48%	18%	2%	(0%)

Source: Field data (2019)

The study finding in table 4.3 indicated that the instructors' support of VOL through providing guidance on the navigation in the system and access to various parts of the VOL platform greatly (86%) influenced that access and enrolment to the VOL due to the easy means to adopt the guide given by the instructor. More so, the experience and technological knowhow of the structure greatly (83%) influenced the accessibility and enrolment to VOL platforms. Further, the study revealed that the level knowledge of topics covered and ability to provide explanations that expose students to real world greatly (78%) influence the enrolment to VOL. Finally, the study finding in table 4.3 that the instructor's attitude toward VOL greatly (70%) influenced the enrolment of VOL among the students. The encouragement to students to empress digital learning at large extent influences the acceptance of VOL among students. From the study finding it was shown that, the level of knowledge and expertise on various topics accompanied

with their technological knowhow influenced the enrolment and access to VOL. This study concurs with Miyahara, (2015) who found out that more (70%) were influenced to enroll to VOL by instructor positive attitude.

Students emphasized the exposure given by the instructor greatly influence their perception and preference of virtual learning. Their satisfactions by the services provided by the lectures were essential for it acts as referral to other people willing to join VOL. In most cases students lack sufficient navigation skills to the VOL system, in other instances the instructor takes the role of providing such skill to their learners that greatly contributed by their perceptions and attitude towards the virtual learning. The study ascertained that the guidance provides by the instructors greatly influenced the learners' access and acceptability of the Virtual learning.

Furthermore, the study findings from interview with key informant indicated that there were cases of dropouts of VOL students due to many factors such as; lack of support from lecturers and negative attitudes towards the VOL. One of coordinator indicated that:

The high dropout rate of the VOL students is the main challenges facing VOL due to lack of support from the lecturers and negative attitude of the society towards VOL (coordinator A).

4.6 Satisfaction with Virtual and Open learning

The study also evaluated the level of satisfaction with their mode of study. This was deemed important because it gave insight into the intrinsic relevance of the skills passed to the respondents by the university and the level recommending the program to others. Consequently, the variable clarifies if or not students would seek further qualifications in the same mode of study. The findings are summarized in figure 4.9

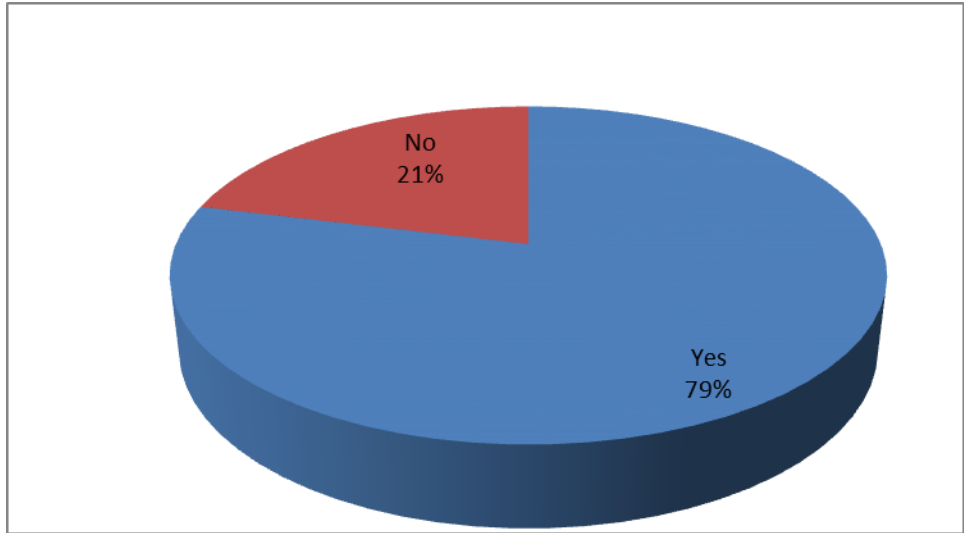


Figure 4.9: Level of Satisfaction with Virtual and Open Learning

Source: Field data (2019)

Study findings revealed that 79% of the respondents were satisfied with virtual and open learning mode, which was associated with active Learning, active discussions, students centered and the feeling to express ideas without criticism as well as studying at individual convenience while 21% indicated that they were not satisfied with the mode of the study. The level of dissatisfaction was associated with challenges delayed reply on the assignment, lack of experienced lectures, less time allocated to Learning and failure to cover the syllabus. Findings from key informants indicated that despite the variant challenges facing the VOL platform there has been consisted training focusing on improved services to the students and this has increased the confidence of the services provided to the students. Further finding from a coordinator indicated that:

Introduction quality assurance in VOL has led to increase of quality of education hence Improving the satisfaction level to student (Interview with coordinator, Kenyatta University, Kenya). More so the sensitization of lecturers and students has led increase of enrollment of Students at VOL due to increase satisfaction level (coordinator C).

More intensely, another coordinator added that;

Kenyatta University have deployed over 800 plus lecturers who are facilitating VOL and they have been given special training on VOL which have led to improvement satisfaction level of students towards VOL programmes (Coordinator B).

VOL was viewed advantageous from the reduced cost of high education to the trainees and given them a chance to focus with their careers and continue improving their skills. Due to the introduction of the VOL platform students have been able to recognize and appreciate the need of technology toward achieving the technological divide needed to improve the economy. This study concurs with Hart, (2012) who argues that through VOL society in general can greatly access education and increase their literacy skills.

4.7 Challenges facing the Virtual and Open Learning platform

The study demonstrates that the use of VOL in Kenyatta University in teaching processes is spreading faster in the last three years (Table 4.1). To achieve the aspect of VOL, platforms have been developed that act as the content delivery channel to interact with the users and in Kenyatta University virtual learning platform in most cases are hyperactive functional supplementing the classroom-learning situation. Despite the fruits and advantages attributed to VOL, various challenges and drawbacks have been associated with this kind of learning. The study findings revealed various challenges facing virtual and open learning.

Computer anxiety is one of the challenges, which influences individuals to adopt VOL. The fear of computers when using VOL platforms was a contributing factor to low enrolment to the virtual and open learning. Both the students' and Lecturers' attitudes towards computers are critical issues in VOL and hence monitoring should be done continuously to make VOL successful. The

study in Table 4.2 on the availability of infrastructure and availability of technology on VOL shows that self-efficacy influences the choice of whether to engage in a task and the greater people perceive their self-efficacy to be, the more they persist in their efforts. Access to computer and acceptance of the learning equipment is important factor, which contributes to computing skills thus computer self-efficacy that enhances navigations in the virtual learning. Apart from capability to use the computer, the accessibility of network and connectivity greatly influences enrolment.

Furthermore, the study revealed that attitudes on the virtual learning both from students and instructor affects the access and acceptability of VOL (Table 4.3) The ease of use of an virtual learning helps in predicting the acceptance and enrolment in virtual learning by instructors and learners. The provision of skills on navigations helps in ease of using VOL. students indicated there was no flexible access to instructional and assessment media. Such media for example should allow students to access course content and online books get feedbacks on homework and assignments and are able to get response on quizzes and queries online.

The study findings established that there was high dropout rate of VOL students, where 200 students in every academic year dropout which 0.02% of the total number of VOL students due to lack of support from teaching staff and feeling that they are not fully engaged. A discussion with coordinator found out that high dropout rate of the VOL students was the main challenges facing VOL due to lack of support from the lecturers. The study also established that there was no national education principles that governed VOL in Kenya and that the learning institutions facilitating these programmes were guided by their own policies. This was from an agreement by

Mungoo, (2009) who argued that lack of policies indicated constraints to the development of VOL.

Findings from the coordinators who responded in this study also felt that the workload was too much given that they were the same lecturers facilitating the residential mode of education among other responsibilities like research and publications. They also raised the issue of compensation with the majority feeling that it was too low compared to the workload, as more so adds Garrison, (2000) that Technology is extremely changing and tertiary learning institutions in the country cannot cope with the rapid changes in terms of cost wise and appropriateness in spite of effective application of information technology being important in ensuring quality virtual and open learning.

The study further established most of the teaching staff that facilitates these programmes has not been given enough special training and in-service training on the delivery of virtual and open learning technique. This is an agreement with Nyerere et al., (2012) that argued that 68% of the Lecturers who teach these courses has not been provided with unique preparation on the implementation of viable VOL strategies.

The students also argued the need to train the lectures for most of them lack good IT skills and this affected the delivery mode and there is need to expose them to more skills to ensure they are conversant with the platform well. This is an agreement Peters, (1994) who revealed that only limited number of African tutors have acquired competency of online instructional techniques. Such a situation has presented a crucial problem in the introduction of VOL education in African Universities.

The study further established that there were no direct policies and framework to deal with challenges facing VOL and this creates non-conducive environment for Learning. This study concurs with Sikwibele, (2009) noted that only a few African nations have appropriate described national programs to act as a guide to the improvement of virtual and open education. Lack of these policies indicates unambiguous constraint to the growth of VOL. The study also established that despite the effort of university sensitizing the students and lecturers about advantages of VOL, attitudes of society towards the VOL is still a major problem. This is because society still that believes one to learn must be a face-to-face learning and have very knowledge about VOL.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the research, conclusions, recommendation and suggested areas for further researches.

5.2 Summary of the Study Findings

The main aim of the study was to establish the influence of virtual and open learning on private demand for education at Kenyatta University.

5.2.1 Enrollment of Virtual and Open Learning in Kenyan Universities

The study revealed that there was an increment of enrolment to the VOL in the last three years. In 2017, 1,658 students had joined, 2018 2,015 students while 2019 2,575. In total 6,248 students had joined the VOL, which represents 8.9% of KU students' population. The study findings revealed that more female students (545) had enrolment to VOL compared to their male (46%) counterparts. The study concluded that VOL was more approached by women compared to men due to the flexibility as they care for their families. Most students in VOL were married (77.2%) due to the family responsibilities; most of the married people preferred this mode of studying due to the flexibility and closure to their family. The study shows the need to incorporate the married people to VOL for in supports continue caring of families and adding skill at the same time. Majority of students interviewed were pursuing undergraduate studies (62%) including diplomas and bachelor's degrees while others were pursuing their master and PhD studies (38%). Majority who joined the bachelor's programme were expected to finish their studies within a duration of

four years while those pursuing masters and PhD programs were expected to complete their studies with two and three years respectively. Majority who joined programme got information from friends, through advertisement and from family members like husbands and wives. Majority saw virtual learning as their best option for they had no enough fees and this offered an opportunity to work as well as study. More so, those who were living far from various universities had the benefit of education without necessary attending physical classes. In this view, virtual and open leaning was more preferable from different localities due to its flexibility and accessibility.

5.2.2 The Influence of Virtual and Open Learning on Enrollment in Kenyan Universities

The study aimed at exploring the nexus between virtual and open learning enrollment of the Kenyatta students. This was to understand influenced enrollment of students in the platforms. Most of the students interviewed expressed their views that virtual and open learning influenced enrolment of students due to its flexibility affordability. VOL aids students who cannot study fulltime as wells allowing people work while studying. Contrary some student indicated that there was slow rate of adaptability, managing work and school at same time and other cases stress of exams. Study findings revealed three quarters of the respondents were satisfied with virtual and open learning mode that was associated with active learning, active discussions, students centered and the feeling to express ideas without criticism as well as studying at individual convenience.

The study ascertained that availability of infrastructure ranging from the adoption of technology by different people and access to computer greatly influences the participation in VOL. The findings show that varied parts of the Kenya have different network signal and internet

accessibility, which greatly influence the access to Virtual learning. The provision of the right technological infrastructure to both students and instructors greatly influences the enrolment and access to VOL. Kenyatta University advancing on provision of equipment and required infrastructure will greatly influence the enrolment rate to VOL.

The study finding found out that encouragement to students to embrace digital learning largely influences the acceptance of VOL among students. From the study finding it was shown that the level of knowledge and expertise on various topic accompanied with their technological knowhow influenced the enrolment and access to VOL. Students emphasized the exposure given by the instructor greatly influence their perception and preference of virtual learning. Their satisfactions by the services provided by the lectures were essential for it acts as referral to other people willing to join VOL. In most cases students lack sufficient navigation skills to the VOL system, in other instances the instructor takes the role of providing such skill to their learners that is greatly contributed by their perceptions and attitude towards the virtual learning. The study ascertained that the guidance provided by the instructors greatly influenced the; learners' access and acceptability of the Virtual learning.

Learners support the service provided by the university have an effect on the enrolment, effective and systematic support provided through tutoring, electronic equipment data communication technology (ICT). Majority of the respondents reported the service support has a significant impact on the delivery by various tutors. The study revealed that timely feedback and active discussion during the classes influences the delivery of VOL. Every sector needs good reputation and good will for its operation. Most VOL have achieved tremendous improvement over time

due to the services provided to the students for enrolments and influence by positive regard from friend.

5.2.3 Challenges Facing Virtual and Open Learning in Kenyan Universities

The study also established that distance learners encounter a number of challenges. The level of dissatisfaction was associated with challenges delayed reply on the assignment, lack of experienced lectures, less time allocated to learning and failure to cover the syllabus. More surprisingly, struggles in Adapting to the program was experienced by majority of the respondents due to the changes of timetable without notice, lack of Computer literacy for both the students and lecturers and detachment due to limited teacher-student contact.

The learners indicated that there were increases in disruption at home by the kids causing loss of focus and this was a significant burden especially when preparing for exams and in some cases, it was hard to access study materials and inadequate resources. Some cases were reported of insufficient support from university and internet connection problem leading to disconnections during the studies and students were left behind, and in some instances, they could not understand their courses well. Additionally, most of the respondents reported they had the responsibility of family provision, and this created a significant burden to finance virtual and open learners. Although some had managed, it was through thick and thin; they tried to make ends meet in order to finance distance education.

5.3 Conclusion

Virtual and open learning has performed an important role in the improving the standards learners despite their family commitment. It is designed to remedy those who cannot afford the fulltime leaning mode and it creates a causative atmosphere for deprived to affix establishment of upper learning. The study concludes that the VOL is more appropriate for the married women compared to men due to family responsibilities. Furthermore, it was discovered through the study, that the natures of the virtual and open leaning: influenced enrollment of open learning programme, majority engaged in different field and it remedied their desired to achieved more education though physical facilities weren't obtainable, this was an element that influenced enrollment of virtual and open learning in different universities. The study concludes that the nature of infrastructure and availability of learning equipment is vital for the VOL. the study concludes that the need to empress appropriate awareness among the instructors is crucial for their characteristics and attitudes toward VOL highly influence the learning.

The study findings revealed learners were able to learning in different location without necessary moving to the university but it was affected by the internet connectivity, which highly influenced enrolment, and access to VOL. Learners support services influenced enrollment into virtual and open learning programme. Most of the respondents reported the lack support services on internet connectivity leading to inconsistent leaning among the students. More so they faced challenges of delayed reply on the assignment, lack of experienced lectures, less time allocated to learning and failure to cover the syllabus. More surprisingly, Straggles in Adapting to the program was experienced by a majority of the respondents due to delayed communication in the changes in the timetable and in some other cases non- attendance of the classes. The involvement of students as well as instructors was essential in the navigations to the VOL and easy learning.

From the finding, it was concluded that virtual and open learning has had success despite the various challenges and it is more suitable for the committed individuals for they can advance their skill and still tackle their daily duties. With good support and timely planning, the platforms can be improved attracting more enrolment and building of the reputation. This would help overcome various challenges as discussed.

5.4 Recommendations

Over years, virtual and open learning has been gaining motion. VOL is advantageous to many people for the provision of change to pursue education not forgetting their economic activities. The success of VOL can be attributed to different factors. Various recommendations have been constructed to ensure the goals of VOL have been achieved in the digital era. The university ought to concentrate on sensitization on VOL.

The government ought to consider funding virtual and open learners through loans from teaching loans board to ease the burden of trying to find education fee. This may cause maintaining the space learners and inspiring additional to affix the program and thus scale back dropout. There would like for awareness campaigns targeting the community, parents, directors, lecturers, and students.

The government ought to intensify the virtual and open education program together with the university at the O level to scale back the extent of illiteracy. The study also recommends the need for technical support for both students and staff to ensure better delivery. This will multiply the morale of the learners and build on the reputation of the VOL program

The study recommends training of instructors as well as students on the navigation to the VOL platform. Various forums and workshop to enhance the capabilities and knowhow of the virtual learning use could attain this. Further, the sensitization of society and VOL stakeholders about the advantages of VOL and the needs to change from conventional learning to virtual and opening learning due to its accommodative qualities, affordable, accessibility and flexibilities.

5.5 Suggestions for further research

- i. Establishing the feasibility of virtual and open learning in the competence-based curriculum.
- ii. A comparative study should be done to approximate the success of virtual and open learning in public and private universities.
- iii. A similar research needs to be replicated in various institutions like the private universities and other tertiary institutions who did not participate in this study.

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APPENDICES

Appendix I: Letter of Introduction

MOSES MWANGIMACHARIA

P.O BOX, 254-10203

KIGUMO.

Dear Respondent,

I am a postgraduate student in Kenyatta University Pursing a master's degree in Economics of Education. I am conducting a study on the *“influence of Virtual and open learning to private demand for education: A case of Kenyatta University, Kenya.”*

I kindly request you to participate in this study as a respondent. Please be honestly as possible and to the best of your knowledge. I assure you that the information you will provide will be handled confidentially. You are free to seek any clarification where necessary during the study.

Thank you in advance.

Yours sincerely,

Moses Mwangi Macharia

Appendix II: Questionnaire for virtual and open learners

Dear Respondent,

I am a postgraduate student in Kenyatta University Pursing a master’s degree in Economics of Education. I am conducting a study on the *“influence of Virtual and open learning to private demand for education: A case of Kenyatta University, Kenya.”*

I kindly request you to participate in this study as a respondent. Please be honestly as possible and to the best of your knowledge. I assure you that the information you will provide will be handled confidentially. You are free to seek any clarification where necessary during the study.

Kindly fill in each section of the questionnaire and do not write your names.

Section A: Demographic Information

(Please tick in the space provided)

1. What is your gender?

Male []

Female []

2. What is your marital status?

Single []

Married []

Others (Specify).....

3. What is your age group?

18 – 25 years []

26 - 35 years []

36 – 45 years []

46 – 55 years []

Above 55 years []

4. What is your education status?

Undergraduate student []

Postgraduate student []

5. What is your year of study?

1st year []

2nd year []

3rd year []

4th year []

Section B: The Current Status Of Enrollment In Virtual And Open Learning

6. Which course are pursuing on Virtual and open learning mode.....

7. How many years will you take to complete course

8. Are you currently employed

Yes []

No []

Section C: The Influence of Virtual and Open Learning on Enrollment

9. Distance learning has an influence on enrollment.

5=strongly agree []

4= Agree []

3=Undecided []

2= Disagree []

1=strongly disagree []

10. Please give reasons for your answer to question 9 above?

- i.
- ii.
- iii.
- iv.
- v.

11. Using a Likert scale of 1-5, where: 5= Very great extend 4= Great extend 3= Moderate extent 2= Low extend 1= Not at all; what is your opinion on the extent influence of infrastructure on Enrolment to the VOL programmes in Kenyatta University

Item	5	4	3	2	1
Adoption of Technology					
Availability of computers					
Network connectivity					

12. Using a Likert scale of 1-5, where: 5= Very great extend 4= Great extend 3= Moderate extent 2= Low extend 1= Not at all; what is your opinion on the extent influence of instructors characteristics on Enrolment to the VOL programmes in Kenyatta University

Item	5	4	3	2	1
Technology knowhow of the instructor					
Level of knowledge of topics covered and ability to expose students					
Instructors support of VOL to the students in navigations of the platform					
Instructors attitudes toward VOL					

Section D: The Challenges Facing Virtual and Open Learning

13. Are you satisfied with open and distance learning programme delivery?

Yes []

No []

14. Please give reasons for your answer to question 10 above?

- i.
- ii.
- iii.
- iv.

15. What are some of the challenges that you encounter while pursuing your studies by distant mode?

- i.
- ii.
- iii.
- iv.

Section E: The Strategies Addressing Challenges Facing Virtual and Open Learning

16. What are the possible suggestions to overcome the challenges mentioned in question 14 above?

- i.
- ii.
- iii.
- iv.

Thank you for your cooperation

Appendix III: Interview Guide for Digital School Coordinator

Dear Respondent,

I am a postgraduate student in Kenyatta University Pursing a master's degree in Economics of Education. I am conducting a study on the *“influence of Virtual and open learning to private demand for education: A case of Kenyatta University, Kenya.”*

I kindly request you to participate in this study as a respondent. Please be honestly as possible and to the best of your knowledge. I assure you that the information you will provide will be handled confidentially. You are free to seek any clarification where necessary during the study.

The interview is anonymous – do not mention your name.

- 1) What are your responsibilities in Virtual and open learning programme?
- 2) How long have you been involved in Virtual and open learning programme?
- 3) Have you received any special training on programme?
- 4) Total number of staff teaching Virtual and open learning programme?
- 5) What is the current trend of enrollment regarding Virtual and open learning for last 3 academic years?
- 6) What are some of the reasons for implementing Virtual and open learning programme in your University?
- 7) What are the problems that you face in Virtual and open learning programme compared to traditional methods of education?
- 8) How can these challenges be addressed?

Thank you for your cooperation

Appendix IV: Letter from Graduate School



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E55/38245/2017

DATE: 19th August, 2019

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

**RE: RESEARCH AUTHORIZATION FOR MOSES MWANGI MACHARIA – REG. NO.
E55/38245/2017.**

I write to introduce Moses Mwangi Macharia who is a Postgraduate Student of this University. The student is registered for M.ED degree programme in the Department of Educational Management Policy and Curriculum Studies

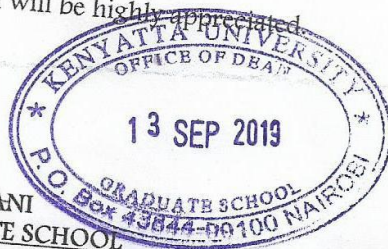
Moses intends to conduct research for a M.ED Project Proposal entitled, "Influence of virtual and open learning on private demand for education: A case of Kenyatta University, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'E. Kimani'.

PROF. ELISHIBA KIMANI
AG. DEAN, GRADUATE SCHOOL



Appendix V: Letter from National Commission for Science, Technology & Innovation


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **297111** Date of Issue: **05/September/2019**

RESEARCH LICENSE



This is to Certify that Mr. Moses Macharia of Kenyatta University, has been licensed to conduct research in Kiambu on the topic: INFLUENCE OF VIRTUAL AND OPEN LEARNING ON PRIVATE DEMAND FOR EDUCATION: A CASE OF KENYATTA UNIVERSITY, KENYA, for the period ending : 05/September/2020.

License No: **NACOSTI/P/19/1204**

297111
Applicant Identification Number


Director General
**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

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National Commission for Science, Technology and Innovation
off Waiyaki Way, Upper Kabete,
P. O. Box 30623, 00100 Nairobi, KENYA
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix VI: Letter from Kenyatta University Ethics Review Committee



Kenyatta University
P.O Box 43844-00100
Nairobi-Kenya

REF: KU/ERC/APPROVAL/VOL1/1

Date: 25th October, 2019

Moses Mwangi Macharia

P.O Box 43844-00100

NAIROBI

Dear Mr Macharia,

RE: APPLICATION NUMBER: PKU/1095/I1143 INFLUENCE OF VIRTUAL AND OPEN LEARNING ON PRIVATE DEMAND FOR EDUCATION: A CASE OF KENYATTA UNIVERSITY

This is to inform you that **KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE** has reviewed and approved your above research proposal. Your application approval number is **PKU/1095/I1143**. The approval period is **14th October, 2019-14th October, 2020**.

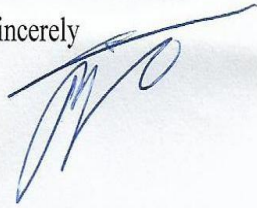
This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by **KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE**.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to **KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE** within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.

- vii. Submission of an executive summary report within 90 days upon completion of the study to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.***

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely



Prof. Judith Kimiywe

CHAIRPERSON- KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE.



Appendix VII: Letter from Deputy Vice- Chancellor, Research, Innovation and Outreach



KENYATTA UNIVERSITY

**OFFICE OF DEPUTY VICE-CHANCELLOR, RESEARCH, INNOVATION
AND OUTREACH**

Ref: KU/DVCR/RCR/VOL.3/277

Mr. Moses Macharia
Dept of Educ, Management, Policy & Curr.
School of Education
KENYATTA UNIVERSITY

P. O. Box 43844 - 00100
Nairobi, Kenya
Tel. 254-20-810901 Ext. 026
E-mail: dvc-rio@ku.ac.ke

29th October, 2019

Dear Mr. Macharia,

RE: REQUEST TO COLLECT RESEARCH DATA AT KENYATTA UNIVERSITY

This is in reference to your letter dated 19th August, 2019 requesting for authorization to collect research data at Kenyatta University on the research topic "***Influence of Virtual and Open Learning on Private Demand for Education: A Case of Kenyatta University, Kenya***" towards an M,Ed degree of Kenyatta University.

I am happy to inform you that the Vice-Chancellor has approved your request to collect data. It has been noted that your data will be collected mainly from students and coordinators in the Digital School.

Yours Sincerely,

Prof. F. G. Gravenir
Deputy Vice-Chancellor
Research, Innovation & Outreach
cc. Vice-Chancellor
Dean, Digital School