

**FACTORS INFLUENCING DELIVERY OF OPEN AND DISTANCE LEARNING
PROGRAMMES IN PUBLIC UNIVERSITIES IN KENYA: THE CASE OF THE
UNIVERSITY OF NAIROBI**

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DECLARATION

I declare that this is my original work that has not been submitted in another university for the award of a degree.

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This research project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

This work is dedicated to Mr and Mrs Muchanji who are my parents, my siblings Collins George, Delphene Atieno, Joe Muchanji, James Obuya and the Late Isaac Nabongo for the sacrifice care, love, concern, encouragement, support and enthusiasm.

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ABBREVIATIONS AND ACRONYMS

CODL:	Center for Open and Distance Learning
EFA:	Education for All
HE:	Higher Education
ICT:	Information and Communication Technology
NACOSTI:	National Commission for Science, Technology and Innovation
ODL:	Open and Distance learning
ODL:	Open, distance, and learning
OLE:	Online Learning Environment
USA:	United States of America

ABSTRACT

Open as well as distance learning relieves the government of the responsibility of constructing or investing in physical facilities that are entirely new and provides opportunities that enable continuous learning. However, despite the open and distance education being formed in Nairobi University, its adoption among learners has been slow. The research aimed at finding out factors that were affecting delivery of open and distance education programmes at Nairobi University. Study objective were to determine how infrastructure related factors, instructor characteristics, learning environment and service support affected delivery of open and distance education programmes at Nairobi University. Target population was all the 36 teaching and non-teaching staff as well as 52 Masters of Distance Education (MDE) students. The study sample size was 62 respondents (32 teaching staff, 4 non-teaching staff and 26 MDE students). Secondary and primary data was. Data from secondary sources was generated from university records and annual reports. Semi-structured questionnaires generated primary data. Before collection of data, a pilot study was done for testing how reliable and valid the research instrument was. Qualitative and quantitative data was generated by the questionnaires. Analysis of qualitative data done by the use of thematic content analysis and a prose form presentation was done. Analysis of Quantitative data was by use of inferential and descriptive statistics. Tables and graphs were used for data presentation. Correlation analysis was useful in the determination of the association between the study variables. The results indicated that infrastructure related factors have a positive and significant impact on delivery of ODL programs. Further, instructor's characteristics had a positive and significant effect on delivery of ODL programs. Further, learning environment had a positive and significant impact on delivery of ODL programs. Also, service support had a positive and significant impact on delivery of open and distance learning programs. The study concludes that infrastructure related factors had the most significant influence on ODL programs delivery, followed by instructor characteristics, learning environment and service support. The study recommends that the University of Nairobi should ensure that there are enough computers in the University for Use by the teaching staff, students and non-teaching staff. More so, the University of Nairobi ought to develop more platforms to enhance service support to the students through tutor assistance and communication between tutors and students.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Education Demand in University is rapidly increasing. Open and Distance learning (ODL) mode strongly emerged in order to for the challenge on the rise in demand for university education to be addressed Distance education simply is a technique of learning and teaching where there is a division between the learner and the teacher in terms of space and time (Simpson 2006). In the 19th century, the thought open and distance learning as the learning concept where one learn at own pace that is independent of space and time originated. In the United Kingdom, the Open University was introduced to blend learning in 1969 and had a major role of doing an introduction of the distance learning into the higher education. According to Gaskell and Mills (2014), distance education at least started as early as 1728.

ODL is now known entirely as the education mode that is capable of helping a big number of learners to access education that is quality. According to Latchem (2014), the components of the definition are the learning process, the learner and teacher are separate from one another in space and time, ICT or print media mediates communication between the two parties and that the learner controls instead of the teacher. Simpson (2006) found that universities are motivated to implement distance learning at their institutions in order to increase access to education using new methods of teaching. There are reasons why major commitments are made and this include the prospect of increase in enrollment, cost reduction as well as remaining competitive (Kirkup, 2014).

In USA various activities in adult education that preceded the organization of ODL exist. In 1873, Anna Ticknor started the society with the aim of encouraging studies at home for with the aim of providing opportunities on education for women, which provided correspondence instruction to 10,000 members over a 24year period (Kentnor, 2015). The Open University on Britain was established in 1969 in the United Kingdom and it was the begging of technology use through courses that were designed well. According to Castaño et al, (2013), British Open University is recognized worldly to be the most innovative university has been in the fore front in developing most of the research in distance learning. British Open University success was key reasons that helped in developing open universities in India, Japan, USA, Turkey as well as China (Collins, 2008). Currently, the world leader in ODL is china and it's not only by the

activities volume but also its diversity whereby it has more than two million students, in the Open University of China alone (Jung & Latchem, 2007).

In Africa, Butcher et al. (2011) stated that there are expected benefits of ODL. These benefits are inclusive of increase in flexibility, institution choice, access to learning, compensation, better marketability as well as learning opportunities that are lifelong. According to Mays (2005), most of the discernible current trends in ODL are linked to the ever increasing growth in communication and information technology. In Sub-Saharan Africa, there exists a knowledge gap between the south and north and it takes a character that is dramatic. Currently there is an indication that ODL is mainly being used in widening the access to basic education as well as maintaining and improving quality of the system used in conventional education and in particular by an in-service teachers training (UNESCO, 2001). The South Africa University (UNISA) is among the universities that are oldest in the African continent in distance education and since 1946 it has been offering courses that are correspondent (Letseka & Pitsoe, 2014). The success of UNISA has resulted to the establishment ODL in the African continent. Some of the examples include the open universities in Zimbabwe, Tanzania and Nigeria, which began as residential programme providers and have currently diversified into offering ODL (Butcher et al., 2011).

In Kenya, the initial government policy that was used in addressing distance higher education in the 1966 Act of Parliament and was founded by the Adult Education Board. “The Kamunge Report of 1988, expressed satisfaction that the External Degree Programme offered by the University of Nairobi as an example of a successful alternative and Continuing Education Programme that could be nationally accessed by eligible learners throughout the country” (Republic of Kenya, 2006).

ODL practice in the country is at every education level and different institutions provide it differently as governed by their own policies in their institutions. the major providers are: “ the Kenya Institute of Curriculum Development (KICD); the Kenya Institute of Special Education (KISE); University of Nairobi; Kenyatta University; African Medical Research Foundation (AMREF); Ministry of Agriculture; Ministry of Health; Ministry of Education under school based teacher development programme; and a number of cross border institutions” (Kirkup, 2014). other institutions are located in the country and they as well as manage distance learning and they include the “African Virtual University (AVU)” that is useful in running programs in Anglophone and Francophone Africa though have altered its directive to offering training to the

staff in the institution which offer open and distance learning rather than offering distance learning to the learners directly. (Nyaga, 2013).

Though distance learning holds promise, several problems should be looked into before its full utilization in Africa (Anyona, 2009). Various resources and constraints in technology deter distance learning. Telephone and other communication infrastructures that are not within major cities are still independent. These challenges are in spite of a policy document by the Government of Kenya on ODL that is yet to be implemented.

In Kenya, the University of Nairobi was the first university to have university education. It was founded in 1956 and still holds on its tradition of offering academic programs that are diversified as well as offering specializations in technology, sciences, humanities, arts and social sciences. There has been an exponential expansion in the university in regard to the students' numbers, staff and the physical facilities in the university (University of Nairobi, 2015). The number of undergraduate students has shifted from around 2,580 to the present population of 36000, the postgraduate students have also increased from 184 in the academic year 1970-71 to the current number of 7,000 (University of Nairobi, 2015). In a similar way the teaching staff numbers has also increased to 1,330 while the support staff and the administrative staff is around 4000. More than 90,000 graduates have gone through the university of . The University has seven campuses located within the city. There are six colleges comprising thirty three (33) faculties, schools and institutes (University of Nairobi, 2015).

The university of Nairobi, offers various programs through open and distance studies. The aim of ODL was to offer higher education opportunities to adults who in their earlier education missed opportunities for University Education. This programme also aimed at enabling Kenyans to acquire high level of University education through distance learning and to meet the national needs for qualified graduate. The courses are mainly taught through print based mode with some audio cassettes and compulsory residential sessions. Distance learning mode is planned in such way that it can meet the demands of distance learners, particularly teachers who cannot leave their work. Residential tutorial sessions are conducted during school holidays, that is, in April, August and December (University of Nairobi, 2015).

1.2 Statement of the Problem

Education is basic to human and it is also their right to have it and the Government of Kenya has the responsibility to provide it to all its citizens (Anyona, 2009). However, the achievement

made at primary level was due to free primary education introduction in 2003 is already putting pressure at secondary and tertiary levels, therefore jeopardizing the government's effort to meet EFA. The waiver of tuition fees in secondary education is definitely going to increase the pressure on university education demand and this leads to the challenge of overstretched facilities, overcrowding in the institutions and high learner-lecturer ratios (Kirkup, 2014).

University institutions in Kenya are currently overwhelmed by the key tasks that are related to; finance, access, quality, external and internal efficiency and hence not in a position to meet the higher education demand (Nyaga, 2013). In addition, the financial support offered to public universities by the government has been decreasing over the years. This has prompted an increase in commercializing programmes so as to assist in offsetting the fall in funding from the government. Open and distance learning, therefore, is appealing as an option since it relieves the government of the responsibility of constructing or investing in entirely new physical facilities and provides opportunities for continued learning (Wakahiu & Kangethe, 2014). However, despite the ODL centers in the University of Nairobi being established, the adoption among learners has been slow. In addition, the education mode has however been faced by several problems and among them are the infrastructural ones. In addition, a study done by Alakklouk (2012) revealed that both the learners and the instructors had a negative attitude and perception on distance learning and online delivery. So as to adoption, the delivery of open and distance learning needs to be improved by developing strategies focused on critical factors influencing it.

Various studies have been done on ODL in Kenya. For instance, Anyona (2009) researched on problems of open and distance learning in Kenyan public universities and Ikinya and Okoth (2013) investigated the factors influencing the student performance on the mode of distance learning. However, there is little empirical evidence showing the critical factors influencing the delivery of ODL in Kenyan public universities. Therefore, this study sought to explore on the factors which affect delivery of ODL at the University of Nairobi.

1.3 Purpose of the Study

The aim of this study was to find out the factors influencing delivery of ODL programmes at the University of Nairobi.

1.4 Objectives of the Study

The study focused on the following objectives;

- i. To establish the influence of availability of infrastructure on delivery of ODL programmes
- ii. To assess the influence of instructor characteristics on delivery of ODL programmes
- iii. To determine the influence of learning environment on delivery of ODL programmes.
- iv. To assess the influence of service support on delivery of ODL programmes

1.5 Research Questions

The study sought to answer the following research questions;

- i. How do availability of infrastructure influence delivery of ODL programmes at the University of Nairobi?
- ii. How does instructor characteristics influence delivery of ODL programmes at the University of Nairobi?
- iii. How does learning environment influence delivery of ODL programmes at the University of Nairobi?
- iv. How does service support influence delivery of ODL programmes at the University of Nairobi?

1.6 Significance of the Study

To the stakeholders that are higher education institutions in Kenya, namely; the board of management of the University of Nairobi as well as other public universities in Kenya, the government of Kenya and policy makers as well as other future researchers the findings were important.

To the management of The University of Nairobi as well as other public universities in Kenya, the study outlines factors influencing delivery of ODL programmes that can be used to develop strategies to improve open and distance learning programmes. The findings of this study may be used by the management to evaluate their activities in terms of infrastructure and service support and guide them in formulating and implementing policies which may increase the delivery of ODL programmes.

To policy makers and Kenya's government, the study provides information on factors influencing the delivery of ODL programmes that can be used to formulate policies to improve

delivery of ODL programmes in public universities. In addition, the study provides information on the role played infrastructure related factors, instructor characteristics, learning environment and service support that can be used to develop policies to improve these factors and hence enhance ODL programmes delivery.

Additional information on the body of knowledge on success factors influencing open and distance learning programmes delivery in higher learning institutes was also given from the study. This study also provided information that would be used to form a basis where further studies on open and distance learning programmes would be done.

1.7 Delimitations of the Study

This research was limited to four variables infrastructure, Instructor characteristics, learning environment and service support. Further, the study was limited to the University of Nairobi. In addition, the study was conducted between August 2016 and September 2016. The target population of was 1421 teaching and non-teaching staff, PhD students and Masters Students in the School of distance learning (ODEL Campus of University of Nairobi).

1.8 Limitations of the study

The characteristics of the design used in research or methodology that may influence how the findings are interpreted describe the study limitations. case study of the University of Nairobi was done and in a case study it limits the study in relation to the generalization of the findings. Only one university was covered thus limiting the study and therefore the results of the findings cannot be generalized to other Kenyan public universities. Hence, there is need to carry out more studies in future that will focus on other universities thus the generalization of the findings.

In addition, the use questionnaire was employed in the study so as to aid in data from the respondents. According to Greener (2008), the validity of questionnaires is low and hence there lacks a way of identifying how true the respondents are. Additionally, the ability of the respondents to remember which can lead to biasness defines the answers in the questionnaire. To reduce this, the research instrument's reliability and variability was tested in order to determine whether that which the respondents indicated met the necessary standard. To reduce biasness, the researcher gave the respondents an assurance assured that collected information was only going

to be useful in purposes regarding academics. Further, the research study obtained a letter from the university and also from NACOSTI to aid in collecting data.

1.9 Assumptions of the Study

The researcher assumes respondents are in a position to read, understand and be able to answer, through writing the questions, in the survey tool. In addition, the study assumes that all participants would be co-operative and provide reliable, accurate and honest responses to the best of their ability. Further, the study assumes that staff working in the School of distance learning (ODEL Campus of University of Nairobi) was willing to give information that was true when collecting data and that the permission to collect data was granted to the researcher by the authorities.

1.10 Definition of Significant Terms

Open and distance learning programmes: A process using telecommunication which involves the use of teleconferencing, internet as well as means that are related means in order to achieve an extended classroom or learning experience.

Availability of Infrastructure: Refers to the basic physical systems and services, such as communication and transport that is used by a country so as to work effectively.

Instructor characteristics: Refers to features and qualities belonging to a teacher who ensures effective implementation of technical infrastructure in order to determine the effect of technology in learning.

Learning environment: This is the diverse physical contexts, locations and cultures that students learn.

Service support: Refers to the function or activity that is required for the completion of a project, process or program successfully. It provides all operative processes that are required for the handling of Service interruptions and change implementation.

1.11 Organization of the Study

The research project comprises of five chapters. The first chapter is the introduction which highlights the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, and significance of the study, delimitation of the study, limitations of the study, assumptions of the study and definitions of significant terms. The second chapter presents a review of literature. The subsections of this chapter include an introduction, review of variables, theoretical framework, conceptual framework, gaps in literature reviewed and summary of literature review. The third chapter deals with research methodology and focused on research design, target population, sample size and sampling procedures, sample size, sampling procedure, data collection instrument, pilot testing of the instruments, validity of the instrument, reliability of the instrument, data collection procedures, data analysis techniques ethical consideration and operational definition of variables. The fourth chapter deals with data analysis and presentation as well as discussion. It focuses on the response rate and findings from the respondents in relation to the study variables. Chapter five entails summary of the findings, conclusions and recommendations. It also has a section on areas for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Review of literature on factors affecting delivery of open and distance learning programmes is presented. Specifically, the study focused on four main factors, which include infrastructure related factors, instructor characteristics, learning environment and service support. The chapter begins with a conceptual framework, following by a theoretical framework, summary of the literature and research gaps.

2.2 Open and Distance Learning Programmes

It is used to provide opportunities in regard to education that are required by any person, anywhere and anytime. A larger population that has different situations and needs is offered educational opportunities (Dodds, 2005). Since there is flexibility in relation to time and delivery is anywhere, both the employees and students can benefit from it. ODL has therefore offered opportunities to those that could not be in a position to leave their jobs to attend conventional education that is full time. UNESCO (2001) indicated that in the effort of meeting the changing and new requests for training and education, open and distance learning can be a method opposite in various conditions, a substitute that is appropriate for methods such as face-to-face which are still dominant in most educational systems. According to Burgess and Rusell (2003), Open and Distance Learning has provided majority of the people with access that did not have access the opportunities in education based on their residence, work, poor circumstances in the economy, social status among others. Open and Distance Learning is still the main mechanism that is used for information-driven age and has been used to reduce the gap between communities that are developed and those that are developing.

Reactions to ODL programs have been positive. Runfang (2006) indicated that both instructor and students were content with the methods used. Simpson (2006) established that students who were taking open and distance learning courses were content with the teaching methods, instructor as well as course content. In addition, May (2005) established that students viewed telecommunications as method that is acceptable in the delivery of the course content. Latchem (2014) established minimal differences in the entire course perceptions that are taught using distance learning methods. According to Jung and Latchem (2007), instructors felt though ODL

the courses offered were of lower or equal quality than those that had been offered on-campus , nonetheless the rating by the students was in favor of them.

As noted by Moore and Anderson (2003), testing for open and distance learners are in majority ways the same as testing of classes that are face-to-face by the learners. Murray et al., (2013) indicated that both on-campus and ODL are equally effective in regard to the outcomes of learning. Distance and Open Learning Scale and Dimensions of Distance were also cited as a tool that is necessary in assessing learning.

May (2005) gave a suggestion that learning based on technology is available just-in-time, or that can be accessed once the participant is back on the job may enhance transfer. Letseka and Pitsoe (2014) found that Lockheed department of technical training which used videoconferencing successfully for assessing skills and hands-on learning (Subotzky & Prinsloo, 2011). Upadhyaya and Mallik (2013) found that ODL leads to a reduction in cost and time by 50 over on campus learning.

2.3 Availability of Infrastructure and Delivery of Open and Distance Learning Programmes

Infrastructure related factors are important in ODL. These factors are ease of sharing information through technology, how much the learner has support from software, the quality of presenting information in terms of clearance and visualization of contents. Since the 1990s, a considerable growth has been seen in the adoption of infrastructure within higher education (HE) both for ODL and on-campus teaching and learning. Infrastructure for learning has increasingly been used in Europe as well as other parts in the world (Bielawski & Metcalf, 2003).

Quality, reliability and medium richness are important infrastructural aspects of delivery. Particularly, infrastructure allows for both asynchronous and synchronous exchange; convenient access by the students should be available and they should also have minimum document exchange time. Essary (2014) indicated that the how capable one engages in the provision of a rapid interaction that is compelling and also giving students a feedback is among the powers of interactivity in a Web environment. Engagement is as well influenced by presentation of the materials used in education and their problems.

Atan et al. (2002) confirmed that the importance of the attribute in infrastructure compatibility in relation to the differences in various academic departments, whereby there has been a

confirmation of the difference. Essary (2014) confirms the importance of compatibility attribute by indicating that institutions should deal with the following problems in accepting ODL infrastructure: the challenge of infrastructure integration, infrastructure integration with other organizational systems and incompatibility in the use of technology use and existing work practice. Research studies have shown that the behavior of the user is influenced by different attributes in technology or beliefs, and according to Bielawski and Metcalf (2003) they include; compatibility, relative advantage, ease of use, trial ability, result demonstrability as well as observability. The most confirmed attributes are: usefulness and ease of use (Upadhyaya & Mallik, 2013).

2.4 Instructor Characteristics and Delivery of Open and Distance Learning Programmes

Instructor plays major roles in ODL delivery in the implementation of technical infrastructure in order to determine the effect of technology in ODL (Upadhyaya & Mallik, 2013). Atan et al (2002) identified five instructor characteristics influencing ODL. These include; quality of the instructor, quality of learning activity, teaching styles, technological knowhow. Quality of instructor is all about the command by the instructor on the subject of discussion and how able he is in making presentations that one can understand clearly. In regard to improving the learning and style quality, various researches have given various strategies that are instructional which are inclusive of planned goal setting which is done past the learning experience, using the methods on action planning as well as including several instructional methods. The instructors should therefore practice teaching styles that are interactive as well as encourage interactions between the students It is important that the instructor to be technologically capable and in a position to perform trouble shooting tasks that are basic. Where the attitude of the instructor is positive towards promoting technology and distributed learning, the students will most likely have a positive learning outcome

Many study results show that the factors that affect academic instructor are different depending on the current ODL introduction phase into the academic institution. A major factor is the reliability and capacity of the ICT infrastructure (Doo Hun & Morris, 2009). Thus, perceived adequacy of support as facilitating circumstance has a key effect on applying in ODL online (Atan et al., 2002). Information availability on how to apply technology in ODL process may positively affect instructors' technology adoption (Bielawski & Metcalf, 2003).

Instructor characteristics positively influence ODL if they are intrinsically motivated to self-gratification, intellectual challenge and an interest in using technology. This environment gives instructors with professional development opportunities and opportunities in research and collaboration with colleagues. Instructors are content when the work they are doing is recognized and when they can promote positive student outcome, however they expect reliable infrastructure. Upadhyaya and Mallik (2013) indicates that the organizational commitment of the teacher is a crucial factor in ensuring the teaching process is quality and Bielawski & Metcalf (2003) gave a confirmation that the effect of commitment to the pedagogical quality on the ODL is technology acceptance.

2.5 Learning environment and Delivery of Open and Distance Learning Programmes

Learning environment for ODL is defined as where learning takes place in a web based area that is specific. An example is an Online Learning Environment (OLE) whereby the students can have access to online resources, use the systems to access online course and communication, obtain assistance from the tutor as well receive their assessment (Upadhyaya & Mallik, 2013). Learning environment terms can either be the tools which are used in the environment or the kind of learning that will be offered in the system. The objects of learning are used to represent the environment's management. There exist agreements that indicate that objects in learning are digital resources which can assist learning through being reused. (Bielawski & Metcalf, 2003). Design methodology is another characteristic of the learning environment. Programs, courses, and objects in learning that are accessible in OLEs, can be self-directed, self-paced or instructor-led (Bielawski & Metcalf, 2003)

Self-paced is used in learning environments to help individuals to do an online study online during their own period of time and at their preferred pace in their own locations. This learning mode therefore helps a learner with more independence to go ahead autonomy in their own pace as monitoring of their progress is done so as to their achievement can be assessed (Atan et al., 2002). Self-directed is essential in making reference of all forms of distance learning and is a learning mode that is controlled by the learner. The learners control their own learning and they tend to manage and monitor the contextual and cognitive learning aspects (Doo Hun & Morris, 2009). Self-directed can as well be seen as independent learning that lacs interactions between the leaner to learner.

2.6 Service Support and Delivery of Open and Distance Learning Programmes

Service support include services which assist in the retention of students in education, they include counseling, guidance and orientation of the student. Service support can be defined as the cognitive, affective and systematic support with the growth and changing trends of distance education, comes the problem of student abrasion. Essary (2014) cites such challenges as lack of experience and training, perceived isolation, and inadequate service support, all of which may lead to low performance and eventual dropping out of the program (Hun & Morris, 2009). Many researchers and practitioners have long suggested that success in serving, attracting as well as retaining students will hinge more on service support that is excellent than on any matters in technology. Such support mechanisms include on-site facilitation, guidance and counseling, library services and appropriate administrative policies (Hun & Morris, 2009).

The support offered in institutions with ODL is to a larger extent dictated by the distance student's learning needs (Upadhyaya & Mallik, 2013). Atan et al. (2003) made a description of learner service support to be the service range for the students as well as individuals that are in groups which are complementary with the learning resources or the materials used in the course that are similar for every learner and those that are viewed as important in providing in institutions. Doo Hun and Morris (2009) categorize service support into two: academic support and non-academic support. Academic support was inclusive of assisting learners to manage programme workload, developing learning competencies appropriate that were and helping students to be independent. On the other hand Non-academic support is inclusive of assistance with any personal difficulties that encountered by the leaner during their student life, helping them retain interest in their studies, and get social integration into the institution and the study programme.

2.7 Theoretical Framework

ODL practices in higher education have introverted the growth of the theory of single distance education whereby research and practice are based. Therefore there are various theories that have been suggested in order to explain ODL. Theories on open and distance learning include Wedemeyer's Theory of Independent Study, Moore's Theory on Autonomy Distance and Holmberg's Theory of Interaction and Communication.

2.7.1 Wedemeyer's Theory of Independent Study

Wedemeyer is viewed as new ideas inventor of open and distance education, as well an advocate of the application of technology as an instrument that is essential in opening up opportunities and in the promotion of educational democracy (Fluegge, 2010). Wedemeyer made a consideration that the independence of students is the essence of distant learning. According to Wedemeyer independent study comprised of several methods of arrangements in learning and teaching where the learners and teachers carry them out in their responsibilities and tasks separate from each other and communication is done in various manners. Wedemeyer diverted from the traditional correspondence study concept and made contributions to the emerging new design of viewing the roles of the student and the teacher (Fluegge, 2010).

Runfang (2010) identified that the key elements of independent learning as availability of instruction widely, student greater responsibility, effective mix of methods and media, adapting to differences among individuals, and a wide variety of start, stop, and learning times. Fluegge (2010) requests that the theory should be founded on independence, teaching and learning concepts. Wedemeyer made a proposition that the separation of teaching and learning was a manner of breaking space-time barriers in education. He therefore gave six characteristics of study systems that were independent which were; separation of student and the teacher, the common learning processes and teaching processes are done in writing or through other mediums, industrialization of teaching, learning occurs through the activity of the student, the convenience of learning is enhanced in the students own environment and the learner is the one that takes the responsibility of the learning pace and pace the freedom to start and stop at any.

2.7.2 Moore's Theory of Transactional Distance

The Transactional Distance theory founded by Michael G. Moore who postulated that scenarios in distance learning, teacher and student separation may lead to gaps in communication, a psychological space that can lead to misunderstandings between instructor's behaviour and those of the student (Moore & Kearsley, 1996). Moore (1997) stated that transaction nature that is established amid the students and the teachers should consider three factors. These factors are structure, dialogue, and autonomy of the learner. According to Fluegge (2010) this theory implies interplay among individuals, environment and the patterns of behavior in a situation'. In this context, the known as ODL is interaction between people: learners and teachers in environments that contain the characteristics of being separated from one another.

Other instructional ways of performing teaching behaviors apart from the behaviors in learning include performing those which are in a contiguous state in the presence of learners so as the learner and the teacher communication must be enabled by print, mechanical or electronic. Fluegge (2010) states that despite there being other transactional distance in any educational event, behaviors may be influenced by the separation of learner and instructor. The actual indication of the separation is that the instructors present, plan, interact and perform other teaching processes in considerably diverse ways from the face- to -face environment.

2.7.3. Holmberg's Theory of Interaction and Communication

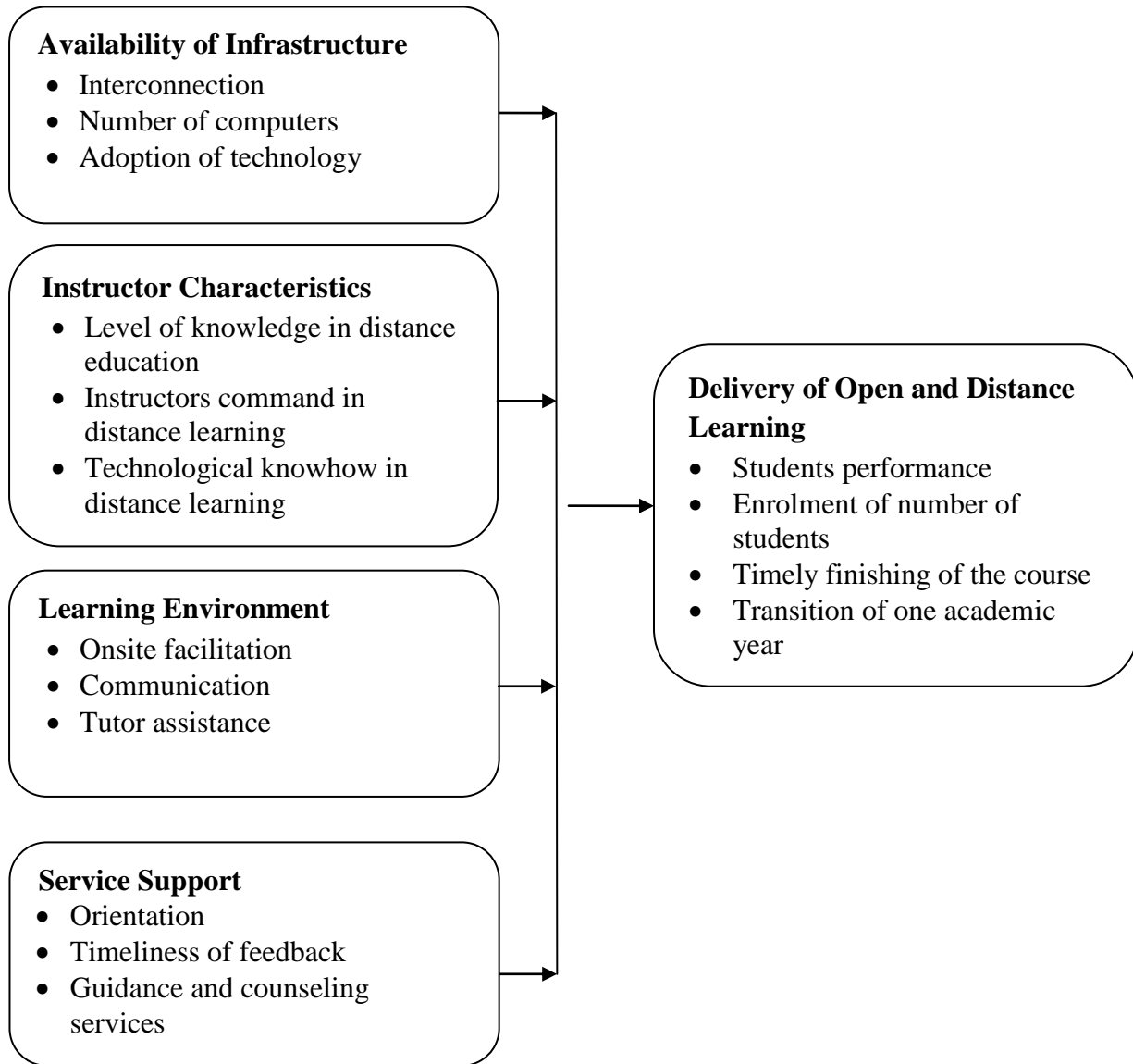
This theory gives a suggestion that the retention of students is enhanced when there is availability of academic support and this integrates the students on to the academic community even though the student is at a distance (Moore, 2003). The theory hypothesizes that when the learning and teaching act is separated, it leads to a weak integration on the student into the institution's scholarly life. This aspect of isolation has been integral in many researches in open and distance learning. For example, an individual learner tracking study initiated by Athabasca University led to conclusions that a relationship existed between learner motivation and involvement with the University. It was also found that many learners had difficulty developing the routine and self-control necessary for completing courses, being that the delivery system does not allow for flexibility to suit the tremendous heterogeneity of the learner population (Fluegge, 2010). Lack of integration may lead to the dropping out of the students. Additionally, learning and teaching act separation is responsible for weakening interpersonal communication and this leads to lack of quality in the achieved learning.

2.8 Conceptual Framework

Conceptual framework has been defined by Mugenda and Mugenda (2003) as a model that is and identified the concepts under the study and their relationships. It aims at explaining relationship between variables and it synthesizes the idea in a systematic way to provide direction. An independent variable is assumed to affect a dependent variable. The study independent variables were availability of infrastructure, instructor characteristics, learning environment and service support. The dependent variable was ODL programmes delivery in the University of Nairobi.

Independent Variables

Dependent Variable



Infrastructure related factors are important in ODL. These factors are ease of sharing information through technology, how much the learner has support from software, the quality of presenting information in terms of clearance and visualization of contents. Instructor plays major roles in ODL delivery in the implementation of technical infrastructure in order to determine the effect of technology in ODL (Upadhyaya & Mallik, 2013). Atan et al (2002) identified five instructor characteristics influencing ODL. These include; quality of the instructor, quality of learning activity, teaching styles, technological knowhow.

Learning environment terms can either be the tools which are used in the environment or the kind of learning that will be offered in the system. The objects of learning are used to represent

the environment's management. These tools are essential in communication, onsite facilitation as well as giving assistance to the tutors. Service support include services which assist in the retention of students in education, they include counseling, guidance and orientation of the student. The support offered in institutions with ODL is to a larger extent dictated by the distance student's learning needs.

2.9 Summary of the Literature and Research Gaps

The study views three theories on open and distance learning; Wedemeyer's theory which entails a study that is independent, Moore's theory which discusses the transactional distance as well as Holmberg's theory that explains communication and interaction. Wedemeyer's theory that entails an suggests that technology promotes democracy in education where learners and teachers conduct their responsibilities while they are separate from each. Moore's theory that discusses transactional distance considered three factors that are structure, autonomy and the dialogue of the learner that bridges the communication gap between the learner and the teacher. Holmberg's theory of interaction and communication indicates that service support is essential in integrating the student to learning environment.

Infrastructure has a major responsibility for open and distance learning success. In its absence, the distance, both academic and geographical cannot be broken and ODL is impossible. Therefore there is need for a major analysis of the factors that are considered while making decisions on the most appropriate infrastructure to use in ODL Programmes. The instructor characteristics such as attitudes toward distance education, control of technology, teaching styles, quality of learning activities and quality of instructor among other factors should be taken into consideration. Infrastructure also has its own aspects such as cost, interactivity, ability to meet instructional objectives, and ability to meet the demands of students in wide geographical distribution. None of these factors operate in isolation. Web based learning environment is enhances flexibility where students are in a position to carry out studies on their own location and time thus students are in charge of their own learning. Service support such as online library services, online tutor consultation improves the performance of open and distance learners.

Locally and globally, studies have been done on open and distance learning. In the global context, Alakklouk (2012) researched on the factors affecting E-Learning effectiveness at Open University Al-Quds of in Palestine and Musingafi et al. (2015) researched on problems that

Students face in the Open University of Zimbabwe. Due to differences in economic environment, learning environment and the legal framework governing higher education and use of ICT between countries, the findings of these studies cannot be generalized to Kenya.

Locally, Anyona (2009) researched on the problems and status of ODL in Kenyan public universities; Ikinya and Okoth (2013) investigated the factors that influence student performance on distance learning mode and Nyaga (2013) carried out a reserch on factors affecting implementation of distance education at the college of insurance, Kenya. However, these studies did not outline the factors influencing the open and distance learning programmes delivery. More specifically, the studies did not outline the influence of infrastructure, instructor characteristics, learning environment and service support on open and distance learning programmes delivery in public universities.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Data gathering and analyzing methodology was discussed in this study. Areas discussed are research design, population target, the sample size and technique used in sampling, instruments used in data collection, data collection procedure and data analysis and presentation.

3.2 Research Design

Research design is described as how circumstances are arranged for data collection as well as its analysis in a way whose aim is to have a combined significance to the purpose of the research (Kothari, 2004). It is therefore a conceptual structure whereby research is done. It is the blueprint in data collection, its measurement and its analysis. The research design employed was descriptive Byrman (2003) indicated that descriptive research is designed to obtain precise and pertinent information in respect to the state of a phenomenon, and wherever possible, to draw conclusions that are valid from the facts discovered. This study aims at exploring critical factors that influence open and distance learning programmes.

3.3 Target Population

Every member of a group of objects, subjects or individuals who either could be hypothetical or real from where the researcher has an intention of obtaining general conclusions of the study variables is referred as target population (Cooper and Schindler 2006). The study's target population was all the 36 teaching and non-teaching staff as well as 52 Masters of Distance Education (MDE) students (University of Nairobi, 2015). The total target population was therefore 88.

Table 3.1: Target Population

Category	Target population
Teaching staff	32
Non-teaching staff	4
MDE students	52
Total	88

3.4 Sample Size and Sampling Technique

A sample is given on the basis that it does not consume much time as well as it is cost effective as well as it can be used to survey the entire study population (Kothari 2004). Since the teaching

and non-teaching staff number was small, they were included in the study. However, 50% of MDE students were included. Sampling technique employed was simple random, it was employed in selecting the sample from the target population. This technique was essential as it gives all the members of as population equal opportunities of selection as part of the sample size. The study sample size was therefore 62 (32 teaching staff, 4 non-teaching staff and 26 MDE students).

Table 3. 2: Sample Size

Category	Target population	Sample Size
Teaching staff	32	32
Non-teaching staff	4	4
MDE Students	52	26
Total	88	62

3.5 Data Collection Instruments

Secondary and primary data were employed. Secondary data was gathered from university records and annual reports. Through the use of questionnaires that were semi-structured primary data was collected. The questionnaire had open ended questions and close ended questions and this would enable the respondents to indicate their perception without the influence of the researcher. In order to reduce money and time used and also facilitate an analysis that is easier, structured questions were used (Greener, 2008). Unstructured questions on the other had were used with the aim of encouraging the respondents to give in depth and felt responses thus making them feel not held back from giving any relevant information. Kothari (2004) staed that the use of questionnaires is a cost effective method that is used to collect information and in particular from a group of respondents that is huge. Questionnaires also facilitates anonymity. This study made use of the questionnaires as the information required was sensitive.

The questionnaires comprised of six sections. Section one entailed collected data on the demographic information of the respondents, the other four sections (second, third, fourth, fifth) comprised data on the four variables that were independent and the sixth section collected data on the variable that was dependent.

3.6 Validity of Research Instrument

Creswell (2005) indicated that the extent to which the measurement instrument is successful in quantification and description of the element under measure is known as validity. Commonly used forms of validity include the content and face validity. Face validity is when a question posed is misunderstood or misinterpreted. Cooper and Schindler (2006) asserted that face validity is reduced by pretesting. The degree to which the measure used represents all facets that shows social construct is Content or logical validity. Content validity was reached at through the comments and results that were in a pilot study that had been done in Kenyatta University. Items that did not measure the variables as intended to be measured were altered while others were completely discarded. Consultations and discussions with the supervisor were done to enhance content validity.

3.7 Reliability of Research Instrument

A pilot survey is meant to eliminate, in advance, some of the problems that are likely to be encountered during the final survey (Cooper & Schindler, 2006). In this study pilot testing was done in Kenyatta University before actual data collection for study is done. The university was used because it is assumed that the experiences of the course instructors, coordinators and open and distance learning students is similar to those at University of Nairobi and as such, the responses in the two universities were reasonably similar.

Reliability is used to determine whether similar results are produced each time the instrument is used in similar settings with the same subject type. Internal consistency will be used to measure reliability in this study (Bryman, 2003). Reliability of measurement is given by the internal consistency whereby it assumes that items which measure the same constructs should correlate. Measuring internal consistency is through using Cronbach's alpha. Cronbach's alpha (α) that is more than 0.7 is acceptably considered while a Cronbach's alpha (α) that is less than 0.7 is questionably considered (Creswell, 2005).

Table 3. 3: Cronbach Alpha

Construct	Cronbach reliability alpha(α)	No of items
Infrastructure related factors	0.731	4
Instructor characteristics	0.723	5
Learning environment	0.733	4
Service support	0.756	6
Delivery of ODEL	0.725	3

From the findings, infrastructure related factors had ($\alpha = 0.73$), instructor characteristics had ($\alpha = 0.723$), learning environment had ($\alpha = 0.733$) service supports had ($\alpha = 0.756$) and open and distance learning programmes delivery had ($\alpha = 0.725$). The indication was that the research instrument was therefore reliable and therefore amendment was not necessary.

3.8 Data Collection Procedure

Before data collection, permission was requested from National Council of Science and Technology Council (NACOSTI). Introduction letter also was written to the respondents by the researcher and the letter indicated the study purpose. Before the researcher made visits to the individual respondents, a visit to the management of the school of ODL was done by the researcher and informed them of his intentions. Questionnaires which were the research instruments were hand delivered to the respondents. Follow ups were then done by the researcher on a daily basis and this helped to monitor the progress of the respondents on how they were filling the questionnaires. The process of collecting data was expected to take about two weeks.

3.9 Data Analysis and Presentation

According to Cooper and Schindler (2006), analysis of data entails reducing the study's data to manageable information. It also involves the application of statistical techniques, development of summaries and looking out for patterns. It can also be described as a measure that allows the researcher to inspect, transform and model data so as to highlight the important information, suggest existing conclusions and support the making of decisions. The data collected was first scrutinized to ensure completeness and accuracy before entering it into the Statistical Package for Social Scientists (SPSS) version 21. Using this the researcher was able to derive measures of

central tendency, frequency distributions, association measures and dispersion measures. In the case where the data is quantitative, tables and figures were used in data presentation. Further, an advanced statistical technique (inferential statistics) was used. Regression analysis was used with the aim of determining the association between independent and dependent variables. Thematic content analysis was used in analyzing qualitative data. The study used a 95% confidence interval. This interval is used to indicate the level of significance of 0.05. This gives an implication that for a significant to be there, consequence among the independent and the dependent variables, the p-value should be less than the level of significance which is (0.05).

Multivariate regression model was used for determining the value of every variable and the association of the independent and dependent variables.

Regression equation was;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby;

Y = Delivery of open and distance learning programmes;

X₁ = Infrastructure related factors,

X₂ = Instructor characteristics,

X₃ = Learning environment,

X₄ = Service support,

ε = Error Term,

β₀ = Constant Term and

β₁, β₂, β₃, β₄ = Beta Co-efficient

3.10 Ethical Considerations

According to Cooper and Schindler (2006), a norm that governs the conduct of human and has a significant effect on the welfare of human is regarded to as ethics. To avoid losing credibility of the study, ethical issues were considered. Plagiarism was avoided through acknowledgement of new ideas that will be obtained from other scholars. Furthermore, any other person who was interested in taking part in the study was also required to fill the questionnaires. On the other hand, personnel who were not willing to get involved with the study were not forced to take part in any way. An informed consent was required on those respondents who took part in the study voluntarily. Moreover, there was adherence to strict confidentiality; there was no information

that was provided to a person who was authorized. To promote anonymity, it was necessary that the respondents indicate their names on the questionnaires and information provided was kept confidential. The respondents were assured that the information they given were entirely to be used for academic purposes. The researcher also obtained permit to collect data from the University of Nairobi and NACOSTI.

3.11 Operational definition of variables

Table 3. 4: Operational Definition of Variables

Variable	Indicators	Measurement scale	Data Collection Instrument	Data analysis
Infrastructure	<ul style="list-style-type: none"> • Interconnection • Number of computers • Adoption of technology 	Ordinal	Questionnaire	<ul style="list-style-type: none"> • Frequencies • Mean • Standard deviation • Pearson's Rank Correlation
Instructor Characteristics	<ul style="list-style-type: none"> • Level of knowledge in distance education • Instructors command in distance learning • Technological knowhow in distance learning 	Ordinal	Questionnaire	<ul style="list-style-type: none"> • Mean • Standard deviation • Pearson's Rank Correlation
Learning Environment	<ul style="list-style-type: none"> • Onsite facilitation • Communication • Tutor assistance 	Ordinal	Questionnaire	<ul style="list-style-type: none"> • Mean • Percentages • Standard deviation • Pearson's Rank Correlation
Service Support	<ul style="list-style-type: none"> • Orientation • Timeliness of feedback • Guidance and counseling services 	Ordinal	Questionnaire	<ul style="list-style-type: none"> • Mean • Frequencies • Percentages • Standard deviation • Pearson's Rank Correlation
Delivery of Open and distance learning programmes	<ul style="list-style-type: none"> • Students performance • Enrolment • Timely finishing of the course • Transition 	Continuous	Secondary data	<ul style="list-style-type: none"> • Mean • Frequencies • Standard deviation • Pearson's Rank Correlation

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

Data analysis and interpretation according to the objectives and the purpose is done in this chapter. The aim of the research was to find out factors which have an effect delivery of open and distance learning programmes at the University of Nairobi. The chapter begins with a response rate followed by general information. The chapter also comprises of descriptive statistics on infrastructure related factors, instructor characteristics, learning environment, service support and delivery of open and distance learning programmes as well as correlation analysis results.

4.2 Questionnaire Return rate

Response rate refers to the questionnaires returned after them having been given out to the respondent. From the 62 questionnaires issued, 57 questionnaires were filled and given back, accounting for 91.93% return rate which was deemed adequate for the analysis. A 100% response rate was not achieved as several questionnaires had some inconsistent information and some were half way filled and thus not useful in this research study. Kothari (2004) indicates that 50% response rate or more is enough for the analysis, which shows that 91.93% was an acceptable basis for drawing conclusions.

4.3 General Information

This section comprised of the respondents general information in regard to their gender, age bracket, duration worked in the organization and highest level of education.

4.3.1 Gender of the Respondents

The respondents, both teaching and non-teaching staff and MDE students, were asked to indicate their gender. Results were as shown.

Table 4. 1: Gender of the Respondents

Gender		Category		Total
		Teaching and non-teaching staff	MDE students	
Male	Count	23	15	38
	Percent	69.7%	62.5%	66.7%
Female	Count	10	9	19
	Percent	30.3%	37.5%	33.3%
Total	Count	33	24	57
	Percent	100.0%	100.0%	100.0%

According to the findings in table 4.1, 69.7% of the teaching and non-teaching staff was male while 30.3% indicated that they were female. In addition, 62.5% of the MDE students were male while 33.3% were female. The implication of the findings was that most of the teaching and non-teaching staff and MDE students (respondent) were male.

4.3.2 Age of Teaching and Non-Teaching Staff

The respondents were asked to indicate their age. Results were as indicated in table 4.2.

Table 4. 2: Age of Respondents

		Frequency	Percent
Teaching and non-teaching staff	31-35	3	9.1
	36- 40	4	12.1
	41-45	18	54.5
	Above 46	8	24.2
MDE students	26-30	8	33.3
	31-35	10	41.7
	36- 40	6	25
	Total	24	100

41 to 45 years, 24.2% indicated above 46 years, 21.2% indicated between 41 and 45 years and 9.1% indicated between 31 and 35 years. This implies that most of teaching and non-teaching staff working in the University of Nairobi.

In addition, 41.7% of the MDE students indicated that they were aged 31 to 35 years, 33.3% indicated 26 to 30 years, 25% indicated 36 to 40 years. This implies that most of the pursuing a Master's in Distance education in Nairobi University were aged 31 to 35 years.

4.3.3 Working Experience of Teaching and Non-teaching Staff

The teaching and non-teaching staff was requested to indicate the period that they had worked in the University. The findings were as indicated below

Table 4. 3: Working Experience for Teaching and Non-teaching Staff

	Frequency	Percent
Below 5 years	3	9.1
5-10 years	17	51.5
11-15 years	10	30.3
16-20 years	3	9.1
Total	33	100.0

According to the findings, 51.3% of the teaching and non-teaching staff indicated that, they had worked in their organization for 5 to 10 years, 30.3% indicated for between 11 and 15 years, 9.1% indicated for below 5 years and 9.1% indicated between 16 and 20 years. This shows that most of the teaching and non-teaching staff working in University of Nairobi had worked in their organization for between 5 and 10 years.

4.3.4 Level of Education of the Respondents

Both the MDE students and the teaching and non-teaching staff were asked to indicate their highest education level.

Table 4. 4: Level of Education of the Respondents

Level of Education		Category		Total
		Teaching and non-teaching staff	MDE students	
PhD	Count	16	6	22
	Percent	48.5%	25.0%	38.6%
Master's Degree	Count	17	18	35
	Percent	51.5%	75.0%	61.4%
Total	Count	33	24	57
	Percent	100.0%	100.0%	100.0%

From the findings in table 4.4, 51.5% of the teaching and non-teaching staff indicated that they had Master's Degree as their highest level of education while 48.5% indicated that they had PhDs. This shows that most of the teaching and non-teaching staff working in the University of Nairobi had at least Master's degree as their highest level of education. In addition, 75% of the MDE students in the university were pursuing a Master's degree in distance education while 25.0% were pursuing PhD in distance education in the University of Nairobi.

4.4 Factors affecting Delivery of Open and Distance Learning

Factors affecting Delivery of ODL of the respondents comprises of factors such as infrastructure, instructors characteristics, learning environment, service support and also how to measure open and distance learning programs delivery.

4.4.1 Availability of Infrastructure and Delivery of Open and Distance Learning Programmes

The respondents were asked to state the extent to which the infrastructure related factors stated influence the delivery of ODL programmes in the University of Nairobi. Where 1 represented No extent at all, 2 represented low extent, 3 represented moderate extent, 4 represented great extent and 5 represented very great extent.

Table 4. 5: availability of Infrastructure on Delivery of ODEL Programmes

	N	5	4	3	2	1	Mean	Std. Deviation
Interconnection	57	36.8	43.9	15.8	3.5	0.0	4.140	.811
Number of computers	57	29.8	15.8	17.5	22.8	14.0	3.245	1.055
Adoption of Technology	57	56.1	43.9	0.0	0.0	0.0	4.561	.500

The respondents indicated with a mean of 4.561 and a standard deviation of 0.500 that technology adoption affected delivery of open and distant learning to a very great extent. They also indicated that interconnections influences open and distance learning programs delivery in the University of Nairobi to a great extent as shown by a mean of 4.140 and a standard deviation of 0.811. Further, the respondents indicated with a mean of 3.245 and a standard deviation of 1.055 that the number of computers influences the open and distance learning delivery to a moderate extent.

The study found that infrastructure related factors have a significant influence on the delivery of ODL programmes in the University of Nairobi. These findings are in agreement with Upadhyaya and Mallik (2003) who argued that a considerable growth has been seen in the adoption of infrastructure within HE both for ODL and on-campus teaching and learning, which has improved delivery. The study found also found that technology adoption influences delivery of ODL to a very great extent. The findings are in agreement with Bielawski and Metcalf (2003)

findings that infrastructure related factors such as the ease of sharing information through technology, how much software support learners get, quality of presented information in relation to its clearness and visualization are key in ODL..

In addition, the study established that interconnections influences open and distance learning programs delivery in the University of Nairobi to a great extent. The results are agreement with Upadhyaya and Mallik (2003) argued that interconnections and medium richness paves way for both asynchronous and synchronous communication and also offers support to various didactical aspects like graphics, text, audio and video messages, which have a key responsibility in ODL delivery. Further, the study found that the number of computers influences the delivery of open and distance learning to a moderate extent. The findings are in agreement with Essary (2014) findings that number of computers available for teaching staff, non-teaching staff and students used significantly influenced delivery of ODL.

4.4.2 Instructor Characteristics and Delivery of Open and Distance Learning Programmes

Further the respondents were requested to indicate to what extent the stated instructor’s characteristics influence ODL programmes delivery in the University of Nairobi.

Table 4. 6 Instructor characteristics on Delivery of ODEL Programmes

	N	5	4	3	2	1	Mean	Std. Deviation
level of knowledge in distance learning	57	63.2	35.1	1.8	0.0	0.0	4.614	.526
Instructors level of command in distance learning	57	47.4	52.6	0.0	0.0	0.0	4.473	.503
technology knowhow in distance learning	57	68.4	31.6	0.0	0.0	0.0	4.684	.468

The respondents indicated with a mean of 4.684 and a standard deviation of 0.468 that instructor’s technology knowhow in distance learning influences delivery of open and distant learning to a very great extent. They indicated with a mean of 4.614 and a standard deviation of .526 that instructor’s level of knowledge in distance learning influences delivery of open and distance learning programs in the University of Nairobi to a very great extent. The respondents indicated with a mean of 4.473 and a standard deviation of 0.503 that the instructors command in distance learning influences the delivery of ODL to a great extent.

The study found that instructor characteristics have a positive and significant effect on the delivery of ODL programmes in the University of Nairobi. The findings are in line with Upadhyaya and Mallik (2013) who purported that instructors have a key role in delivery of ODL in implementation of technical infrastructure in order to determine the effect of technology in ODL. The findings are also in agreement with Atan et al. (2002) findings that instructor characteristics positively influence ODL if they are intrinsically motivated to self-gratification, intellectual challenge and an interest in using technology. The study also revealed that instructor's technology knowhow in distance learning influences delivery of ODL to a very great extent. The findings are in agreement with Bielawski and Metcalf (2003) findings that it is important that the instructor should have capability in technology and should be in a position to carry out basic trouble shooting tasks. Students are more likely to have a learning outcome that is positive where the attributes of the instructor are positive in relation to how technology is promoted and learning is distributed.

In addition, the study found that instructor's level of knowledge in distance learning influences delivery of ODL programs in the University of Nairobi to a very great extent. The findings are in line with Upadhyaya and Mallik (2013) findings that the level of knowledge of the instructors on distance learning has a significant effect on the delivery of ODL. Further, the study revealed that instructors command in distance learning influences the delivery of open and distance learning to a great extent. The research findings are in agreement with Atan et al (2002) argument that the quality of instructor entails how he commands the subject matter and how able he is in making presentations that are understandable and clear thus having a key responsibility in ODL delivery.

4.4.3 Learning Environment and Delivery of Open and Distance Learning Programmes

The respondents were requested to indicate which extent the stated aspects of learning environment were influencing ODL programmes delivery in the University of Nairobi.

Table 4. 7: Learning Environment on Delivery of ODEL Programmes

	N	5	4	3	2	1	Mean	Std. Deviation
Onsite facilitation	57	50.9	45.6	3.5	0.0	0.0	4.473	.570
Communication	57	49.1	40.4	10.5	0.0	0.0	4.386	.674
Tutor assistance	57	57.9	35.1	7.0	0.0	0.0	4.508	.630

The respondents indicated that tutors assistant affected delivery of open and distant learning to a very great extent as shown by the mean of 4.508 and a standard deviation of 0.630. The respondents also indicated with a mean of 4.473 and a standard deviation of 0.570 that onsite facilitation influences delivery of ODL programs in the University of Nairobi to a great extent. Furthermore, they indicated with a mean of 4.386 and a standard deviation of 0.674 that communication in distance learning influences the delivery of ODL to a great extent.

The study established learning environment has a positive and significant effect on the delivery of open and distance learning programmes in the University of Nairobi. These findings are in line with Bielawski and Metcalf (2003) findings that the learning environment influences the delivery of ODL. Learning environment for ODL is defined as where learning takes place in a specified area that is web based. Online Learning Environment (OLE) is an example of this item and it is essential where the students can have a access to resources online, the systems can be used in assessing communication and online course, the assistance of the tutor can be obtained as well as assessment can be received. The study also established that tutors assistant influences delivery of open and distant learning to a very great extent. The findings are in line with Doo Hun and Morris (2009) findings that offering of assistance to students significantly influenced adoption and delivery of ODL in institutions of higher learning. The instructor should therefore practice teaching styles that are interactive and should also encourage interactions between students. It is important that the instructor has a capability in technology and is in a position to carry out basic trouble shooting tasks.

In addition, the study found that onsite facilitation influences delivery of open and distance learning programs in the University of Nairobi to a great extent. The findings are in agreement with Bielawski and Metcalf (2003) who argued that there exist an argument whereby objects on learning are digital resources that can be useful in learning when they are reused Furthermore, the study revealed that communication in distance learning influences the delivery of open and distance learning to a great extent. The findings are in agreement with May (2005) argument that the student's perception on telecommunication in terms of its delivery of the course content was an appropriate method. In addition, Upadhyaya and Mallik (2003) posit that both asynchronous and synchronous communication and also offers support to various didactical aspects like graphics, text, audio and video messages, which has a key responsibility in ODL delivery.

4.4.4 Service Support and Delivery of Open and Distance Learning Programmes

The respondents were requested to indicate the extent which the factors that are stated on service support influence ODL programmes delivery in the University of Nairobi.

Table 4. 8: Service Support on Delivery of ODEL programmes

	N	5	4	3	2	1	Mean	Std. Deviation
Orientation	57	33.3	54.4	12.3	0.0	0.0	4.210	.647
Timeliness to feed back	57	35.1	56.1	8.8	0.0	0.0	4.263	.613
Guidance and counseling services	57	50.9	5.3	7.0	0.0	0.0	4.175	.826

The respondents indicated with a mean of 4.263 and a standard deviation of 0.613 that timely feedback affects delivery of ODL to a great extent. They also indicated with a mean of 4.210 and a standard deviation of 0.647 that orientation to distance learning influences delivery of ODL programs in the University of Nairobi to a great extent. Further, they indicated that guidance and counselling services also influence the delivery of ODL to a great extent as indicated by a mean of 4.175 and standard deviation of 0.826.

Further, the indication of the results was that that service support has a positive and significant impact on the delivery of ODL programmes in the University of Nairobi. These findings agree with Essary (2014) argument that service support is the service which assists in the retention of students in education; they include counseling, guidance and orientation of the student and influences ODL delivery.

The study revealed that timely feedback influences delivery of ODL to a great extent. The study findings showed that orientation to distance learning influences ODL programs delivery in the University of Nairobi to a great extent. Guidance and counseling services also had an influence the delivery of ODL to a great extent. The findings are in agreement with Hun and Morris (2009) findings that success in serving, attracting as well as retaining students will hinge more on service support excellence than on any other matters in technology. Such support mechanisms include on-site facilitation, guidance and counseling, library services and appropriate administrative policies.

4.5 Delivery of open and distance learning programmes.

The respondents were requested to rate ODL programmes delivery in the University of Nairobi.

Table 4. 9: Delivery of Open and distance learning

	Frequency	Valid Percent
Excellent	22	38.6
Good	35	61.4
Total	57	100.0

61.4% of the respondents indicated that delivery of ODL in the University of Nairobi was good while 38.6% indicated that ODL delivery in the University of Nairobi was excellent. This implies that ODL delivery in the University of Nairobi was good.

4.5.1 Measures of Delivery of Open and Distance Learning

The respondents were further asked to rate various delivery measures of ODL in the University of Nairobi.

Table 4. 10: Measures of Delivery of Open and Distance Learning

	N	Excellent	Good	Moderate	Bad	Poor	Mean	Std. Deviation
Student performance	57	57.9	40.4	1.8	0.0	0.0	4.561	.535
Enrolment	57	54.4	38.6	7.0	0.0	0.0	4.473	.629
Time finishing of the Course	57	7.0	8.8	31.6	22.8	29.8	2.403	1.208
Transition	57	3.5	3.5	47.4	28.1	17.5	2.473	.946

According to the findings, the respondents rated students' performance in ODL in the University of Nairobi as excellent as shown by a mean of 4.561 and standard deviation of 0.535. They rated enrolment in ODL in the University of Nairobi as excellent. This was as indicated by a mean of 4.473 and a standard deviation of 0.629. However, the respondents rated time finishing of the course in ODL in the University of Nairobi as excellent bad as indicated by a mean of 2.403 and a standard deviation of 1.208. Also, they rated transition in ODL in the University of Nairobi as bad as shown by a mean of 2.473 and a standard deviation of 0.946.

4.6 Inferential Statistics

Regression analysis and correlation analysis were employed to determine the influence of the independent variables (infrastructure related factors, instructor characteristics, learning environment, service support) on the dependent variable (delivery of open and distance learning programmes).

4.6.1 Correlation Analysis

Correlation analysis was employed to help in measuring the association that existed between the variables that were independent and the dependent variable, delivery of open and distance learning programmes. The study used Pearson Product Moment correlation, whose range is from -1 to 1.

Table 4. 11: Correlations Coefficients

		Delivery of open and distance learning	Infrastructure related factors	Instructor characteristics	Learning environment	Service support
Delivery of open and distance learning	Pearson	1	.514**	.449**	.422**	.348**
	Correlation Sig. (2-tailed)		.000	.000	.001	.008
	N	57	57	57	57	57
Infrastructure related factors	Pearson	.514**	1	-.062	-.090	.093
	Correlation Sig. (2-tailed)	.000		.647	.507	.492
	N	57	57	57	57	57
Instructor characteristics	Pearson	.449**	-.062	1	.342**	-.265*
	Correlation Sig. (2-tailed)	.000	.647		.009	.046
	N	57	57	57	57	57
Learning environment	Pearson	.422**	-.090	.342**	1	-.104
	Correlation Sig. (2-tailed)	.001	.507	.009		.442
	N	57	57	57	57	57
Service support	Pearson	.348**	.093	-.265*	-.104	1
	Correlation Sig. (2-tailed)	.008	.492	.046	.442	
	N	57	57	57	57	57

The results show that infrastructure factors have a positive influence on ODL programmes delivery in the University of Nairobi as shown by a correlation coefficient of 0.514. The association was significant since the p-value (0.00) indicated was less than the significance level (0.05).

The results also show that instructor characteristics have a positive and significant influence on ODL programmes delivery in the University of Nairobi as indicated by a correlation coefficient of 0.449. The association was significant since the indicated p-value (0.000) was less than the significance level (0.05).

In addition, the learning environment has positive and significant influence on ODL programmes delivery in the University of Nairobi as shown by a correlation coefficient of 0.422. The association was significant since the indicated p-value (0.001) was less than the significance level (0.05).

Further, the indication of the results was that service support has a positive and significant influence on ODL programmes delivery in the University of Nairobi as indicated by a correlation coefficient of 0.348. The association was significant since the indicated p-value (0.008) was less than the significance level (0.05).

4.6.2 Regression Analysis

Multivariate regression model was used for determining the value of every variable and the association of the dependent and independent variables. The regression equation was;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby; Y = Delivery of open and distance learning programmes; X₁ = Infrastructure related factors, X₂ = Instructor characteristics, X₃ = Learning environment, X₄ = Service support, ε = Error Term, β₀ = Constant Term and β₁, β₂, β₃, β₄ = Beta Co-efficient

Table 4. 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735 ^a	.540	.505	.33116

The R-Squared is used to show the dependent variable proportion which may be explained through the variable that is independent. From the findings, the R-squared was 0.540, and this indicated that the four independent variables (infrastructure related factors, instructor characteristics, learning environment, service support) can explain 54% of the variation in the dependent variable. It was an indication that that other factors that were not been put into consideration in the research can elaborate 46% of the variation in the dependent variable, delivery of open and distance learning programmes.

Table 4. 13: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.707	4	1.677	15.290	.000
	Residual	5.703	52	.110		
	Total	12.410	56			

From Table 4.13, the analysis of variance in was used in the determination of state of the model, whether it was fit for data. The results indicate that the model was significant since the p-value (0.000) was less than 0.05 thus the model is statistically significant in establishing the influence of infrastructure related factors, instructor characteristics, learning environment and service support on delivery of ODL programmes in the University of Nairobi. Further, the F-calculated (15.290) was found to be more than the F-critical (2.5252) and this was an indication that there was fitness in the model thus could be used establishing the effect of the four independent variables on the dependent variable.

Table 4. 14: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.189	.946		4.428	.000
Infrastructure related factors	.367	.077	.454	4.797	.000
Instructor characteristics	.353	.132	.275	2.668	.010
Learning environment	.332	.126	.266	2.648	.011
Service support	.220	.105	.205	2.094	.041

The regression model was;

$$Y = 4.189 + 0.367X_1 + 0.353X_2 + 0.332X_3 + 0.220X_4 + \varepsilon$$

The results show that holding all the four independent variables constant, open and distance learning programmes delivery in the University of Nairobi will be having an index of 4.189. The results also show that infrastructure related factors have a significant effect on of open and distance learning programmes delivery in the University of Nairobi as shown by a beta coefficient of 0.367 (p-value=0.000). It was an indication that improvement in infrastructure related factors by a unit would lead to a 0.367 improvement in the ODL programmes delivery in the University of Nairobi.

From the results instructor characteristics has a positive and significant effect on ODL programmes delivery in the University of Nairobi as shown by a beta coefficient of 0.353 (p-value=0.010). It was an indication that improving instructor characteristics by a unit would lead to a 0.353 improvements in ODL programmes delivery in the University of Nairobi.

In addition, the results indicate that learning environment has a positive and significant impact on ODL programmes delivery in the University of Nairobi as indicated by a beta coefficient of 0.332 (p-value=0.011). It was an indication that improvement in learning environment by a unit would lead to a 0.332 improvement in the delivery of ODL programmes in the University of Nairobi.

Further, the results indicated that service support has a positive and significant effect on the delivery of ODL programmes in the University of Nairobi as shown by beta coefficient of 0.220 (p-value=0.041). It was an indication that improvement in service support by a unit would lead to a 0.220 improvement in the delivery of ODL programmes in the University of Nairobi.

From these findings, we can infer that infrastructure related factors have the most significant influence on the delivery of ODL programmes in the University of Nairobi, followed by instructor characteristics, learning environment and service support.

CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Summary of the research findings are reviewed in this chapter. The conclusions derived from these results are also reviewed. This therefore leads to recommendations and further studies suggestions being made.

5.2 Summary of the Findings

The part comprises summary in regard to study objectives. Specifically, it comprises of the findings on influence of infrastructure factors, instructors characteristics, learning environment and service support on influence ODL programmes delivery.

5.2.1 Availability of Infrastructure and Delivery of Open and Distance Learning Programmes

Infrastructure related factors have a significant influence on delivery of ODL programmes in the University of Nairobi. In institutions of higher learning globally, growth has been considerable in the adoption of infrastructure both for ODL and on-campus teaching and learning. Infrastructure related factors are important in ODL. These factors are ease of sharing information through technology, how much the learner has support from software, the quality of presenting information in terms of clearance and visualization of contents. The study found also found that technology adoption influences delivery of ODL. In addition, interconnections and medium richness allows for both asynchronous and synchronous communication and also offers support to various didactical aspects like graphics, text, audio and video messages, which plays an important role in delivery of ODL. Further, the number of computers influences ODL delivery.

5.2.2 Instructor Characteristics and Delivery of Open and Distance Learning Programmes

Instructor characteristics have a positive and significant impact on the delivery of ODL programmes in the University of Nairobi. Instructors have a major role in delivery of ODL in implementation of technical infrastructure in order to determine the effect of technology in ODL. However, instructor characteristics positively influence ODL if they are intrinsically motivated to self-gratification, intellectual challenge and an interest in using technology. The study also revealed that instructor's technology knowhow in distance learning influences ODL delivery. It is therefore crucial that the instructor is in a position to perform trouble shooting tasks that are

basic as well as should be technologically capable. Students are more likely to have a learning outcome that is positive where the attributes of the instructor are positive in relation to how technology is promoted and learning is distributed. In addition, instructor's level of knowledge in distance learning influences delivery of ODL programmes in the University of Nairobi. Further, instructors command in distance learning influences ODL delivery to a great extent. Instructor's quality is all about his command on the subject of discussion and how able he is to make presentations that can be understood clearly and those that that plays a great role in ODL delivery

5.2.3 Learning Environment and Delivery of Open and Distance Learning Programmes

The study established learning environment has a positive and significant impact on delivery of ODL programmes in the University of Nairobi. Learning environment for ODL is defined as where learning takes place in a specified area that is web based. Online Learning Environment (OLE) is a good example whereby the students can have access to online resources, use the systems to access online course and communication, obtain assistance from the tutor as well receive their assessment. The study also established that tutors assistant influences provision of open and distant learning. In addition, the study found that onsite facilitation influences delivery of ODL programs in the University of Nairobi. Also, communication in distance learning influences the delivery of ODL to a great extent. Both asynchronous and synchronous communication and support various didactical elements like text, graphics, audio and video messages in ODL.

5.2.4 Service Support and Delivery of Open and Distance Learning Programmes

Further, service support has a positive and significant impact on the delivery of ODL programmes in the University of Nairobi. Service support is the service which assists in the retention of students in education; they include counseling, guidance and orientation of the student and influences ODL delivery. The study also revealed that timely feedback influences open and distant learning delivery. The study also found that orientation to distance learning influences delivery of ODL programs in the University of Nairobi. Further, the study established that guidance and counseling services also influence the delivery of ODL. Success in serving, attracting as well as the retention of student will hinge to more service support excellence than any other matters in technology. Such support mechanisms include on-site facilitation, guidance and counseling, library services and appropriate administrative policies.

5.3 Conclusion of the Study

Conclusions describe that infrastructure related factors have a positive and significant influence on ODL programmes delivery in the University of Nairobi. Infrastructure factors are important in the ODL since they facilitate learning through sharing information to the learners through technology and the computers were sufficient enough to allow information transfer and connection between the learners and the staff. The study found that interconnections, number of computers and adoption of technology have a significant influence on ODL programmes delivery.

In addition, the study concludes that the instructor's characteristics have a positive and significant influence on ODL programmes delivery in the University of Nairobi. This is because knowledge of technology and the command of the instructor will assist in relaying information to the learners. The study established that level of knowledge in distance learning, instructors' level of command in distance learning and technology knowhow in distance learning have a significant influence on ODL delivery.

Further, the study gives a conclusion that learning environment has a positive and significant effect on ODL programmes delivery in the University of Nairobi. Tutors assistance has the most significant influence on open and distance learning programmes delivery. The onsite facilitation and communication are also significantly influence delivery of ODL programmes.

Lastly, service support has a positive and significant effect on ODL programmes delivery in the University of Nairobi. These services will assist the learners in managing programme workload; developing appropriate learning competencies and helping them become independent. The study found that Orientation, timeliness to feedback and guidance and counseling services influence ODL programmes delivery in the University of Nairobi.

5.4 Recommendations

In regard to the study findings and the conclusion made, the study offers the various recommendations. These recommendations are:

The study found that the number of computers available for use by the teaching staff, non-teaching staff and MDE students is crucial to ODL programmes delivery. As such, the recommendation is that the University of Nairobi should ensure that there are enough computers in the University for use by the teaching staff, non-teaching staff and students.

The instructors' technology knowhow in distance learning has an influence on ODL programmes delivery. Therefore, the University of Nairobi should develop training programmes to improve and update the instructors' technological knowhow in distance learning.

The study also found that online facilitation and tutor assistance influence the delivery of ODL programmes. Hence the study recommends that more platforms should be developed in the University of Nairobi to enhance service support to the students through tutor assistance and communication between tutors and students.

Open and distance learning programmes deny the students ample time to interact with the tutors and instructors and hence may not receive guidance and help required during the course work. Therefore, the study recommends that University of Nairobi should set up guidance and counseling department in the ODL department so as to offer services on provide guidance and counseling to the students.

5.5 Suggestions for further studies

1. The focus of the research was on the University of Nairobi. Therefore, more researches to be carried out on the factors that are affecting the delivery of ODL programmes in other Kenyan Public Universities.
2. The four factors studied (infrastructure related factors, instructor characteristics, learning environment, service support) could only explain 54% of ODL programmes delivery in the University of Nairobi. Hence other further research studies should be done on the factors that influencing ODL programmes delivery in the University of Nairobi.
3. A comparative study should be conducted to compare open and distance learning in Public Universities.

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APPENDICES

Appendix I: Introduction Letter

Pascal Obuya Muchanji

P.O. BOX 514,

KIKUYU

3RD May 2017

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

REF: Request for participation in a research study on ‘factors influencing the delivery of ODL programmes at the University of Nairobi’

I am a student at the University of Nairobi carrying out a research project since it is part of the requirements of my Master of Distance Education course. The study seeks to evaluate the factors influencing the delivery of ODL programmes at the University of Nairobi.

The findings of the research will be confidential and will be used academically and there is no time that there will be a mention of your individual name in the report. Your participation with honesty will be appreciated.

Yours faithfully

PASCAL MOBUYA

Appendix II: Questionnaire for Teaching and Non-Teaching Staff

This is an academic study assessing the factors influencing delivery of ODL programmes at the University of Nairobi. The information herein requested is for use to meet academic requirements and as such shall be treated with highest confidentiality.

SECTION ONE: GENERAL INFORMATION

1. Gender

Male Female

2. Age

Below 30 31-35

36- 40 41-45

Above 46

3. How many years have you been working in the organization

Below 5 years 5-10 years

11-15 years 16-20 years

Over 21 years

4. Education Level

PhD Master's Degree

Bachelor's degree Diploma

Certificate Secondary certificate

SECTION TWO: FACTORS INFLUENCING DELIVERY OF ODL PROGRAMMES

5. Using the below Likert scale, state the extent to which the following infrastructure related factors influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Interconnection					
Number of computers					
Adoption of technology					

Influence of Instructor Characteristics on the Delivery of Open and distance learning programmes

6. Using the below Likert scale, state the indicate to which extent the following instructor characteristics influence the delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Level of knowledge in distance education					
Instructors command in distance learning					
Technological knowhow in distance learning					

Influence of Learning Environment on Delivery of Open and distance learning programmes

7. Using the below Likert scale, indicate the extent to which the following aspects of learning environment influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1

Onsite facilitation					
Communication					
Tutor assistance					

Influence of Service Support on Delivery of Open and distance learning programmes

8. Using the below Likert scale, indicate the extent to which the following aspects of service support influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Orientation					
Timeliness of feedback					
Guidance and counseling services					

Delivery of Open and distance learning programmes

9. How do you rate the delivery of ODL programmes in University of Nairobi?

- Excellent [] Good []
Moderate [] Bad []
Poor []

10. How do you rate the following delivery measures of ODL programmes in University of Nairobi?. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Students performance					
Enrolment					
Timely finishing of the course					
Transition					

Appendix III: Questionnaire for MDE students

This is an academic study assessing the factors influencing delivery of ODL programmes at the University of Nairobi. The information herein requested is for use to meet academic requirements and as such shall be treated with utmost confidentiality.

SECTION ONE: GENERAL INFORMATION

1. Gender

Male Female

2. Age

18- 25 26-30

31-35 36- 40

41-45 Above 46

3. In which education level are you?

PhD Master's Degree

4. Which degree programme are you pursuing?

.....

SECTION TWO: FACTORS INFLUENCING DELIVERY OF OPEN AND DISTANCE LEARNING PROGRAMMES

Using the below Likert scale, state the extent to which the following infrastructure related factors influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Interconnection					
Number of computers					
Adoption of technology					

Influence of Instructor Characteristics on the Delivery of ODL programmes

Using the below Likert scale, state the extent to which the following instructor characteristics influence the delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Level of knowledge in distance education					
Instructors command in distance learning					
Technological knowhow in distance learning					

Influence of Learning Environment on Delivery of ODL programmes

Using the below Likert scale, indicate the extent to which the following aspects of learning environment influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Onsite facilitation					
Communication					
Tutor assistance					

Influence of Service Support on Delivery of ODL programmes

Using the below Likert scale, indicate the extent to which the following aspects of service support influence delivery of ODL programmes in University of Nairobi. Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Orientation					
Timeliness of feedback					
Guidance and counseling services					

Delivery of ODL programmes

How do you rate the delivery of ODL programmes in University of Nairobi?

Excellent [] Good []
 Moderate [] Bad []
 Poor []

How do you rate the following delivery measures of ODL programmes in University of Nairobi? (**5=Excellent, 2=Good, 3=moderate, 2=Bad, 1=Poor**). Please mark with a CROSS (X) in the applicable box

	5	4	3	2	1
Students performance					
Enrolment					
Timely finishing of the course					
Transition					

Appendix IV: NACOSTI Letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30523-00100
NAIROBI-KENYA

Ref. No: **NACOSTI/P/17/47909/18736**

Date: **16th August, 2017**

Pascal Obuya Muchanji
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Factors influencing delivery of open and distance learning programmes in public universities in Kenya: The case of the University of Nairobi,”* I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **16th August, 2018.**

You are advised to report to the **Vice Chancellor, University of Nairobi, the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The Vice Chancellor
University of Nairobi.


Appendix V: NACOSTI Certificate

THIS IS TO CERTIFY THAT:
MR. PASCAL OBUYA MUCHANJI
of UNIVERSITY OF NAIROBI, 514-900
KIKUYU, has been permitted to conduct
research in Nairobi County

on the topic: FACTORS INFLUENCING
DELIVERY OF OPEN AND DISTANCE
LEARNING PROGRAMMES IN PUBLIC
UNIVERSITIES IN KENYA: THE CASE OF
THE UNIVERSITY OF NAIROBI

for the period ending:
16th August,2018

Permit No : NACOSTI/P/17/47909/18736
Date Of Issue : 16th August,2017
Fee Recieved :Ksh 1000





Applicant's Signature

Galenwa
Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.


REPUBLIC OF KENYA


National Commission for Science,
Technology and Innovation
RESEARCH CLEARANCE
PERMIT
Serial No.A 15289
CONDITIONS: see back page