THE IMPACT OF DOUBLE INTAKE PROGRAMMES ON THE QUALITY OF EDUCATION AT THE UNIVERSITY OF NAIROBI, KENYA

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DECLARATION

This research project is my original work and has not been presented for the award of a degree in any other university.

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This research project has been submitted for examination with our approval as the university supervisors.

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I dedicate this research project to my mother, Naomi Moragwa and my wife, Emily Electine for continuously supporting me and reminding me that I needed to finish this journey without which I would not have achieved this goal.

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TABLE OF CONTENTS

CHAPTER THREE

RESEARCH METHODOLOGY

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

LIST OF FIGURES

Figure **Page**

LIST OF TABLES

Table **Page**

ABBREVIATIONS AND ACRONYMS

CUE	Commission for University Education
FTSE	Full-Time Student Equivalent
ICT	Information and Communication Technology
KUCCPS	Kenya University and Colleges Central Placement Services
LCD	Light Cathode Display
NACOSTI	National Commission for Science, Technology and Innovation
SPSS	Statistical Package for Social Sciences
UASU	University Academic Staff Union
UNESCO	United Nations Educational Scientific and Cultural Organization
USIU-Africa	United States International University - Africa
WoM	Word of Mouth

ABSTRACT

The purpose of this study was to investigate the impact of double intake programmes on the quality of education in the University of Nairobi in Kenya. The study was guided by the following research objectives: equitable access to lecture halls, access and usage of ICT and library facilities, staff to student ratios and the support services and their impact on quality university education. This study was based on two theories; Abraham Maslow's Hierarchy of Needs theory and the Herzberg's Two-Factor Theory of Motivation. The study employed a descriptive survey design by administration of questionnaires, observation, document study and interviews. The target population of this study was the University of Nairobi, Kenya. The university had about 61,000 regular students enrolled to 43schools/faculties, 5,900 students in their fourth year of study and about 2,000 teaching staff. Probability sampling method which is a sampling method that relies on a random, or chance, selection method was used where simple random sampling technique for teaching staff and stratified random sampling of the students was done. The sample size was 251 fourth year students and 238 teaching staff, totaling to 489 respondents. Quantitative and qualitative data analysis methods were used with the aid of statistical package for social sciences (SPSS) version 26. The study found out that: most of the respondents did not consider that the university had equitable access to the lecture halls, access and usage of ICT facilities and the library was a challenge, staff numbers serving the students were insufficient and the support services were stained. The study recommends that: the university ensures provision of requisite infrastructure before introducing new academic programmes. The university should expand and maintain the ICT infrastructure to increase the use of technology in research and innovation. The university should increase the number of the staff whenever the number of students increases. Support services should be expanded to ensure effective service delivery for good quality of life. The study suggests that a similar research on the impact of the 100 percent transition from primary to secondary education be done in public secondary schools to compare the findings.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education was declared as a human right in 1948 and this was a clear indication that education is crucial in the lives of individuals all over the world (Bunyi, 2013). Notably, it is critically important that not only education but quality education is a key ingredient in the development of nations in terms of socio-economic development (Ofoha & Awe, 2011). University education system is an important component of development of modern economic systems of the post-industrial times (Tyurina & Troyanskaya, 2017). The present world needs to seek for competent human resources as a factor of production. The quality and accessibility of university education is key in development of human resources in the present times.

In Canada, it is believed that graduates from universities earn more in their working life times as compared to both college graduates and those who have completed high school (Michalski, Cunningham & Henry, 2017). According to Sandberg and Solvoll (2015), globalization has largely affected the higher education market, leading to competition for university education services to attract students. Universities have tried their best to look different from others due

to competition so as to attract as many students as there are for admission by introducing market-oriented strategies.

In Europe, the academic interest has shifted focus to the physical environment on which learning takes place (Wood, Warwick & Cox, 2012). Emotional and motivational experiences of the learners and the staff are affected by the physical environment. Sandberg and Solvoll (2015), attribute student satisfaction to higher performance. Hence high performance increases the perception of the quality of an institution translating to more attraction to the new admissions.As a basis for university functions, the students and employees are provided with effective infrastructure which plays an important role in achieving the goals of the university (Karna *et al.*, 2013). Campus facilities affect the perception and student satisfaction.

In Ethiopia, there has been a rapid expansion of higher education system entailing increased access to higher education and widening of participants (Tadesse, 2014). The enrolment rate is huge for the country compared to the institutional capabilities. Ethiopia needs to expand its facilities within the country in tandem with improving the quality of higher education system. Rapid expansion of postgraduate programmes has not been accompanied by provision of improved physical facilities (Berhanu, 2014).

Kenya has various factors that influence national systems of education that range from social, economic, technological to political influences (Mackatiani *et al.*, 2016).The education system of Kenya offers higher education in various types of institutions ranging from tertiary colleges, vocational learning centres, polytechnics and universities. This research proposal will basically focus on university education as a form of higher learning. In Kenya there are universities that are funded by the government, others that are funded by the church or religious groups and those that are funded by private individuals. Sifuna (1998) established that university education expanded rapidly as from 1980s in response to the high demand for such education. As per Bunyi (2013) the presentation of free primary education in Kenya in January 2003 brought about exponential increment in enrolment in public primary schools. Free day secondary education was introduced in 2008 to cater for the transition rate. Conversely, there has been a great need to increase the admission of graduates from the secondary schools to institutions of higher learning.

In May 2010, the then Minister for Higher Education William Ruto directed universities to admit extra 20,000 students into the public universities to deal with the backlog of students due to the 1982 coup in Kenya (Kimani, 2010). The Ministry of Education and the Joint Admissions Board made a move to admit to university two groups of candidates in the year 2011 (Mutai, 2013), popularly known as the double intake programme. Most universities protested this move but

they had to bow to the pressure. According the University Academic Staff Union (UASU) Secretary General Constantine Wasonga, university capitation was not commensurate with the rising number of student enrolment over the recent years (Wanjala, 2018). Parallel programmes or module II programmes gained ground in the public university as part of the income generating activities though posed challenges to the quality of university education in Kenya.

The double intake programme that was a policy measure in 2010 has had an on-going impact on the quality of university education. Among the challenges faced include; the few lecturers and professors to teach the large number of students, inadequate infrastructure to support the huge number of students enrolled in the programme and finally the overcrowded lecture theatres. Commercial buildings were acquired for the purpose of teaching (Ogachi & Jowi, 2012) leading to mushrooming of university colleges and campuses. These establishments could compromise the quality of university education because they could not meet the minimum quality and standards guidelines as stipulated by the Commission for University Education (CUE). Learning spaces should make learners comfortable with a sense of belonging (Ellison, 2016). Apart from teaching and research universities become the centre of the lives of thousands of students. Many a times the institutions become their actual homes. This research proposal has based its interest on University of Nairobi as it is in the heart of the capital city of Kenya with a diverse enrolment from all regions of the country and beyond.

1.2 Statement of the Problem

The introduction of free primary education in Kenya was aimed at ensuring that children in Kenya get access to affordable education. However when the programme was rolled out it led to an increase in student enrollment (Bunyi, 2013). The number of students joining secondary school went up triggering the need for free day secondary education policy to cater for the transition rate. Consequently, universities also needed to expand their infrastructure (Ogachi & Jowi, 2012). Tilak (2015), notes that expansion of university education has been unplanned. Whereas the student numbers have experienced tremendous growth, the investments in infrastructural provision has been left behind (Berhanu, 2014; Gichohi, 2016). Increase in number of universities with increase in student enrolment have become a concern to quality in university education given the fact that the enrolment has not matched the teaching and learning resources (Kagondu & Marwa, 2017). February 12, 2018 UASU Secretary General Constantine Wasonga in a letter to the Ministry of Education stated that universities capitation was not commensurate with the rising number of student enrolments over the recent years affecting quality of university education (Wanjala, 2018).

In the year 2010 universities were forced to engage in double intake programmes or mass enrolment. New students were joining university while the old students were still on session. This led to problems of water shortage, poor hygiene and general congestion (Odundo *et al*., 2015). Crush programmes have seen students

being on tight schedules limiting time for innovation and research. Teaching and learning in this case aims at beating deadlines (Onsoti, 2014). CUE has always brought forward concerns about the quality of university education. A report on the status of reforms in public universities 2018 by CUE identified inadequate physical facilities to accommodate the large numbers of students as well as to offer the ideal learning environment and inadequate academic staff as major challenges in public universities (Ouma, 2018).Thus the need to investigate the influence of double intake programmes on the quality of university education.

1.3 Purpose of the Study

The purpose of this study was to investigate the impact of double intake programmes on the quality of education in the University of Nairobi in Kenya.

1.4 Objectives of the Study

This study was guided by the following research objectives:

1. To establish the effect of equitable access to university lecture halls on quality of education at the University of Nairobi.
2. To assess how access and usage of ICT and library facilities affected quality of education at the University of Nairobi.
3. To determine the effect of staff student ratios on quality of education at the University of Nairobi.
4. To examine the effect of the student support services on quality of education at the University of Nairobi.

1.5 Research Questions

The study was guided by the following research questions:

1. How did equitable access to university lecture halls affect the quality of education at the University of Nairobi?
2. In what ways did access and usage of the ICT and library facilities affect the quality of education at the University of Nairobi?
3. What effect did staff student ratios have on quality of education at the University of Nairobi?
4. How did the student support services affect quality of education at the University of Nairobi?

1.6 Significance of the Study

The aim of this study was to assess the impact of the double intake programmes on the quality of university education and to recommend the measures that can be taken into account to ensure successful set up of university policies that meet the minimum standards set by CUE and that can translate to quality university education. This study might contribute knowledge to the policy makers when formulating policies regarding government expenditure on university education so as to address the disparities that are evident due to different levels of university education funding in Kenya. This will guide the formulation of policies that inform the placement of students in the universities in Kenya. Notably, the study can help institutional leaders have a basis for arguing against policies that can impact negatively on the quality of university education.

1.7 Limitations of the Study

Limitations of this Study include;

i) The location of the various faculties/schools and where students resided. Due to the fact that the university has several campuses and some students had to search for accommodation themselves, the respondents tended to be scattered all over hence tracing their where about was quite tedious.

ii) Respondent's attitudes posed a challenge to the study. Relative opinions of the respondents affected the study due to varied findings. The researcher had to convince the respondents that the study would help come up with possible solutions that will curb the problem of poor university education spaces that do not support quality education.

1.8 Delimitations of the Study

The study engaged on assessing the impact of double intake programmes on the quality of university education. The study delimited itself to the University of Nairobi because it is at the heart of the capital city of Kenya with a diverse enrolment countrywide and beyond. The university had resisted the 2010 directive but bowed to pressure in the 2013/2014 enrollment thus the need to study the impact the policy had on the university. Research was yet to be conducted in the University of Nairobi over the impact of double intake programmes on the quality of university education. The fourth year students were perfect for the study because they were affected by the double intake programmes.

1.9 Assumptions of the Study

It was assumed in this study that;

a) All the respondents would have the information required from them about the research topic.
b) The sample population would be representative of the whole population.
c) The universities were dynamic enough to handle the periodic changes in student enrollment.

1.10 Definition of Significant Terms

Academic Staff refers to the person who is appointed to teach, train or do research at a university.

Impact refers to all the outcomes as an aftermath of something or some practice. In this case impact refers to the outcomes related to teaching and learning process.

Double intake refers to the exercise of admitting to universities two cohorts of students in a single academic year.

Programme refers to a set of instructions that determine the progress of a course in formal education.

Standard refers to the reference point against which different aspects of the institution and programme are compared or evaluated for quality.

Quality refers to the details of how well the learning processes helps a learner to acquire the degree award.In this case, quality refers to UNESCO (2005) definition

as the need for more relevance, for greater equity of access and outcome and for proper observance of individual rights.

1.11 Organization of the Study

The study was organized into five chapters. Chapter one entailed the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, assumptions of the study and definition of significant terms. Chapter two dealt with the related literature review guided by the objectives. The literature gives a clear overview of the impact of double intake programmes on the quality of education under the following subheadings: a) the concept of higher education, b) global trends in higher education, c) university education in Kenya, d) university education space standards, in the sections including; lecture theatres/classrooms, and use of ICT. Chapter three entailed the research methodology focused on research design; target population sample size and sampling procedures, research instruments, validity of instruments, instrument reliability, data analysis, techniques, data collection procedures and ethnical consideration. Chapter four has details on data analysis, data presentation, interpretation of the findings guided by the study questions and the summary of data analysis. Finally, chapter five has the summary of the findings, conclusion and the recommendations that arose from the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter dealt with detailed report on the available literature related to the higher education double intake programmes and the quality of the university education. The literature gave a clear overview on the impact of double intake programmes on the quality of education. The literature review study was done under the following subheadings: a) the concept of higher education, b) global trends in higher education, c) university education in Kenya, d) university education space standards, in the sections including; lecture theatres/classrooms, and use of ICT.

2.2 The Concept of Quality Higher Education

In 1948, education was declared as a basic human right (UNESCO, 2004), an indication that education is critically important in the lives of individuals all over the world. Bunyi (2013) notes that it is not only education that is important but, quality education is a key ingredient in the socio-economic development of nations. There are different approaches to understanding what quality education is. Education quality is associated with students' performance in national examinations and other education learning assessment tests (Bunyi, 2013). Either, quality education should shift focus towards an approach that incorporates

discovery of talents and the development of analytical, cognitive and creative potential in utilizing resources (Kagondu & Marwa, 2017).

Higher education is that which is given in post-secondary institutions leading to a degree, diploma or a certificate of higher studies. The quality of higher education can be linked to knowledge transfer, knowledge creation and the ability to serve in the society. Higher education institutions are expected to prepare the students for the labour market and develop their social and wellbeing. The productive output in the labour market determines the quality of university education. Higher education is a key factor in a nation's effort to develop a highly skilled workforce to compete in the global economy (Odhiambo, 2016).

Developments in higher education during the past two to three decades have experienced six major global trends as noted in the study by Tilak (2015), (a) rapid expansion of higher education, (b) decline in public subsidies for higher education, (c) increase in cost-recovery through student fees and student loans, and generation of funds from donors and goodwill, (d) neglect of liberal arts, humanities, sciences, and social sciences, (e) adoption of new market modes of higher education that include privatization and commoditization, and (f) internationalization of a new type. According to Tilak (2015), the expansion of university education is marked by two striking features: it has been unplanned, growing erratically, and secondly the growth has taken place greatly in the private sector motivated by making profits.

In Ethiopia, there has been a rapid expansion of higher education system entailing increased access to higher education and widening of participants (Tadesse, 2014). The enrolment rate is huge for the country compared to the institutional capabilities. The government introduced a policy where 70 percent of the admissions of students will be to those who will major in engineering, natural science, health, agriculture and related subjects in higher education (Berhanu, 2014). The remaining 30 percent would be to those who would major in business, economics and other social sciences. Therefore, there is low allocation of budget, staff development and utilization of infrastructure such as offices and computer facilities to the 30 percent cadre. Rapid expansion of postgraduate programmes in the Addis Ababa University has not been accompanied by provision of improved physical facilities such as buildings and information technologies such as the internet (Berhanu, 2014).

University education in Kenya was first introduced and its development started in 1961 when the then Royal College, Nairobi, (Royal College, Nairobi (Amendment) Act, 1963), was elevated to university college status (Mutula, 2002). In June 1963, the university of East Africa was set up with Makerere, Nairobi and Dar es Salaam as its constituent colleges: after Africans in the region pushing for localization of university education (Sorobea, 1991). There was also need for local skilled manpower after independence. Led by Uganda and Kenya each country started plans of having its own university by the middle of 1970. A

Working Party on Higher Education, appointed in 1968, automatically recommended for the promotion of each college of the federal university to full university status by 1970 (Sorobea, 1991).

A commission of the presidential working party for the second university chaired by professor Mackay from Canada was constituted in 1981 to restructure the entire education system (Mackatiani *et al.,* 2016). The commission came up with recommendations that set up the 8.4.4 education system which was introduced in 1985, (Bunyi, 2013). The primary segment was to take eight years, secondary to take four years and university four years. The 8.4.4 system targeted equipping learners with work-related skills for employment and self-employment with a strong vocational and technical orientation.

University education is recognized as a key force for modernization and development (UNESCO, 2004). This has increased the demand for access of university education. Some universities have come up as a result of the political elites wanting a university established in certain regions where they represent. Politics took advantage of the demand for university education to square issues relating to historical and regional inequality (Sifuna, 1998). In Kenya, expansion of universities is increasingly moving to the rural areas, both in terms of location of institutions and focus on the student catchment areas (Ogachi & Jowi, 2012).

The financing of university education in Kenya has been clustered into three categories; there are those that are financed by the government of Kenya, those

that are privately sponsored and there are those that are of religion-based sponsorship. Since the government is remitting funds to universities that cannot support infrastructural expansion to support extra students on government sponsorship (Gichohi, 2016), they preferred to have more self-sponsored students who some could attend evening classes and others school based programmes. The CUE secretary Prof David Some said the funding was still inadequate:

> *"Funding higher education has emerged as one of the biggest concerns in Kenya, with the surge in student numbers. Government subsidies are no longer enough and universities are going into commercial activities." (Ogutu, 2015)*

In May 2010, the then Minister for Higher Education William Ruto directed that universities admit extra 20,000 students into the public universities to deal with the backlog of students due to the 1982 coup in Kenya (Kimani, 2010) that left the stakeholders at the universities troubled because of the limited resources. Politicians made major statements on education without specific implications on cost and implementation of the double intake programmes. Despite the universities being required to have their internal regulations (CUE, 2014)quality control remains one of the most critical issues in the history of higher education in Kenya (Kagondu & Marwa, 2017).

The Kenya Universities and Colleges Central Placement Service (KUCCPS) admitted 88,000 students in 2015 up from 58,000 in 2014 (Ogeto, 2015). According to the Economic Survey 2017, total university student enrolment was expected to increase by 10.5 per cent from 510,685 in 2015/16 to 564,507 in 2016/17. The survey determines that this increase in number of students was attributed to the increase in the number of public universities and financing of students in private universities by the government (Kenya National Bureau of Statistics, 2017). The Economic Survey 2019 indicates that the total enrolment in both public and private universities was expected to drop by 1.7 per cent to 513,182 in 2018/19. This decline was partly attributed to the reduction in number of candidates scoring a minimum university entry score of C+ (plus) and above in KCSE examinations since 2016 (Kenya National Bureau of Statistics, 2019)

2.3 University Education Space Standards

Kolb and Kolb (2005) note that the idea of learning space expands on Kurt Lewin's field of hypothesis and his idea of life space. Life space incorporates all realities which have presence for the individual and bars those which don't. Life space grasps needs, objectives, oblivious impacts, recollections, convictions, occasions of a political, financial, and social nature, and whatever else that may have direct impact on conduct. The learning space isn't really physical spot yet develops of the individual's involvement with the social condition.

According to Ellison (2016), a learning space should ideally have four attributes; easily accessed, able to be used for a range of activities, allow learners to socialize and lastly make learners comfortable with a sense of belonging. Keen attention on the physical environment in which learning takes place has become a growing area of academic interest over the past decade. The physical environment can have an impact on the emotional and motivational experiences of students and staff (Wanjala *et al*., 2014; Wood, Warwick & Cox, 2012).

The institutions have been forced to engage in double intake programmes which Odundo, *et al.*, (2015) attributes to the 1982 coup attempt, the 1990/91 outgoing 7-4-2-3 and incoming 8-4-4 education systems and the expansion of primary and secondary education and frequent student boycotts (Sufuna, 1998). Academic year 2017/18 has witnessed a number of strikes by the university staff, which has crippled teaching and learning activities. The limited resources at the universities hinder delivery of quality education to the students. Average class sizes have become larger (Norrie & Lennon, 2013). The lecturer student ratio is worrying 1:400, some lecturers have to use microphones (Ogeto, 2015). It is assumed that these changes of high enrolment rates have led to diminished educational quality in the university education outcome.

2.4 Access to University Lecture Halls on Quality of University Education

Lectures in the university are primarily conducted in auditoriums and lecture theatres which need to consider factors such as thermal comfort, indoor air quality

and audio and visual comforts for effective learning. Effective learning spaces are influenced by location, temperature, light, ICT facilities, comfort, noise cleanliness and security. Comfort in this case entails among other things; seating arrangement, comfortable chairs, desk space, food and drinks and washrooms (Ellison, 2016).

The learning environment can affect the behaviour of the students while doing their studies. Gurzynski-Weiss, Long and Solon (2015), say that aesthetic quality appears to play a role, with more participation observed among students in classrooms designed to be more aesthetically pleasing. Educational buildings need to have learning spaces that support the learning process; they have to be secure, comfortable and provide an inspirational setting for learning (Ndirangu & Udoto, 2011; Wanjala *et al*., 2014).

In Kenya just like in other Commonwealth African Countries, the Commission for University Education was established in 1985 to handle matters relating to university development. Statutory powers require the CUE to plan, develop, budget and maintain quality of university education (Commission for University Education, 2014; Universities Act, 2016). The government's involvement in expansion and management of universities is a widespread phenomenon in Kenya.

Most decisions made have been politicized hence affecting the effectiveness of CUE Sifuna (1998). The government makes decisions on budgetary matters making it difficult for CUE to play an active role in its functions hence engaging in political struggles with the universities management as well the politicians who make pronouncements regarding development of universities. Nonetheless, the CUE has been strict in abolishing teaching and learning of university education from areas without requisite infrastructure as a check on quality and standards. Universities have vacated the rented buildings in various towns and there is no more learning from secondary schools during the school holidays. This move has equally opened up to greater challenges where the number of students is not matched with the facilities (Kagondu & Marwa, 2017). A report on the status of reforms in public universities 2018 by CUE identifies inadequate physical facilities to accommodate the large numbers of students as well as to offer the ideal learning environment and inadequate academic staff as major challenges in public universities (Ouma, 2018).

UNESCO in its educational facilities programme published a guide for architects and university administrators involved in planning new institutions or remodeling and expanding existing facilities. The planner has to discover the space requirements for the myriad of activities which will take place in a higher education institution (UNESCO, 1979). Planners tend to make comparisons with already existing infrastructure but it is important to note that higher education

institutions tend to be unique. The planners have to consider the Full-time Student Equivalent (FTSE) when they are developing the infrastructure of an institution. FTSE is also used when doing student enrolment.Class hours are used to track enrolment of full and part-time students, with full-time students being those with a full credit load and part-time students being those taking fewer credit loads per week.

Some recommendations by the UNESCO educational facilities programme publication are that; a) the central administrative facilities for 3000 FTSE students should provide $0.55m^2$ per student, b) close seated lecture theatres should ensure a $0.5m^2$ per FTSE student occupancy, c) tutorial teaching space for 1 lecturer to 10 students requires an area of $1.4m^2$ per FTSE.

The physical environment can have an impact on the emotional and motivational experiences of students and staff (Wood, Warwick & Cox, 2012). This knowledge is very crucial for the institutional planners when setting up universities and their campuses. According to Ndirangu and Udoto (2011), overcrowded facilities, poorly maintained lecture theatres and library buildings, and inadequate teaching and learning resources, are likely to impact negatively on student achievement and academic staff motivation.

2.5 Access and Usage of ICT and Library Facilities on Quality of University Education

Learning experiences have witnessed tremendous changes over the last decade due to the changes in technology. Wendo and Mwanzu (2016) have found that many university libraries have not invested much in the ICTs for teaching and learning, research and general administration in the universities. Mwanzu and Wendo (2017), indicate that libraries in Kenya are transforming from the old set up of shelves for books and journals to ultramodern buildings that embrace aesthetic reflections. This ensures that the universities maintain a competitive edge on campus. Wireless access, laptops and plasma displays are only a few of the developments that have had an impact on the way students conduct their work and how public spaces are used (Forrest & Hinchliffe, 2005). There should be appearance of wireless networks to allow mobile computing hence students to be able to work from outside their classes in such social space as libraries, cafes and halls of residence.

In learning and teaching processes, cognitive opportunities are related with the use of information and communication technology (ICT). The implementation of ICT in education is a relevant factor in favor of the excellence in learning and teaching processes (Vazquez & Estrada, 2014).The evidence of surveyed university students suggests that PowerPoint, used as a presentation tool in university lectures, is pedagogically effective only while it provides variety and stimulates interest in the learning environment (Clark, 2008). Computers are used

by students to analyze data, search for information on the internet, prepare reports and presentations using the Microsoft Office packages and also write term papers and thesis (Sandberg & Solvoll, 2015). Availability of these resources will tend to improve on the quality of work done by the students while on campus.

People in many academic institutions no longer depend on printed materials only; instead, they also use e-resources to meet their information needs (Katabalwa, 2016). Hossain and Islam (2012), note that the best libraries should provide access to world-class information resources which stimulate academic and research activities by complementing or supplementing printed books. Libraries provide resources to students which they can use in their studies and students who are satisfied with the library exhibit higher levels of satisfaction with university facilities (Sandberg & Solvoll, 2015).

According to Wendo and Mwanzu (2016), the Commission for University Education (CUE) requires that academic libraries provide a collection of current and relevant information resources for all academic programmes. These resources should be in print, non-print and electronic formats (Commission for University Education, 2014). Wendo and Mwanzu (2016) found that many university libraries have not invested much in the ICTs for teaching and learning, research and general administration in the universities. Vazquez and Estrada (2014) belief that the level of success, in terms of the implementation of ICT, is directly related with the level of acceptance and involvement of the teaching staff, as well as their

level of domain and skills within the use of the technology. In their study they found out that the application of ICT in Mexican universities has been a slow and complicated process, taking into consideration the acquisition of new equipment and the training required to successfully use update its implementation.

Berhanu (2014), realizes that the available classrooms in the Addis Ababa University for the social sciences courses are not equipped with computers, LCD screens and projectors. The set up and movement of these resources to and from the classrooms every now and again is not easy and consumes much of the lecture time. Katabalwa (2016) did a research on the usage of electronic journal resources subscribed by the University of Dar es Salaam and discovered that the availability of ICT has made possible the access and use of e-resources. People in many academic institutions no longer depend on printed materials only; instead, they also use e-resources to meet their information needs, Katabalwa (2016). Electronic resources help to complement or supplement printed books. There are different types of electronic resources which include electronic books (e-books), electronic journals (e-journals) and other electronic resources.

2.6 Staff to Student Ratios on Quality of University Education.

The growth in university education in Kenya has not been appropriately accompanied with needful building infrastructure and teaching and learning assets (Gichohi, 2016).The enrollment costs have long gone high over time with minimal funding of the university education. This has translated to large average

class sizes, growing reliance on contract professors and tutors and greater online course delivery (Norrie & Lennon, 2013). It is assumed that those changes of high enrollment rates have brought about dwindled instructional quality inside the university training outcome. Ndirangu and Udoto (2011), observe that scholars have needed to study from congested environments at the same time as the educational staffs have needed to teach big classes. The exponential increase in scholar numbers has placed heavy strain on facilities and human resource within the universities ((Wanjala, 2018).

Student learning can be enhanced and made more effective when learning environment is made adequate and appropriate (Wanjala *et al*., 2014).The increased admissions required investment in staffing as well. The number of qualified lecturers has been growing although it does not match the student enrolment rate. Most members of the teaching staff are not housed or are forced to teach in many different campuses. They travel long distances taking a lot of time and at times they reach class late (Ogeto, 2015). According to Brint and Clotfelter (2016) effectiveness of operations can reduce when staff numbers decline below a critical threshold or when staff motivation declines due to overwork

2.7 Student Support Services on Quality of University Education

Majority of the students in enrolled in the university study far from their homes. In this case the students need to be accommodated in the universities for convenience. The accommodation of students within the immediate environment

in which they study has always been incorporated in higher learning institutions. Student accommodation is largely insufficient and overcrowded (Oladiran, 2013). In Nigerian universities, on-campus students' accommodation has remained grossly inadequate, most students do not benefit from the school accommodation provision and as a result, they are forced to seek off-campus accommodation (Clarkson *et al.*, 2017).

The increasing number in demand for higher education has led to build up pressure on the infrastructure that was put up in place when the numbers of the students were low. The notable problems facing student accommodation around the world include growing overcrowding of students that is actualising to congestion that mounts increasing pressure on infrastructures, social amenities; rapidly deteriorating environment; and indiscriminate increase in rent (Clarkson *et al.*, 2017). According to Modebelu and Chinyere (2014), one of the major issues in managing tertiary education for quality and sustainability in the third world nations is the issue of the increasing negative influences of climate change and the associated environmental degradation in the institutions. Students should conveniently access food, drinks and toilets in order to make the best use of their time when studying (Ellison, 2016). According to UNESCO (1979) residential areas should accommodate 420 students per hectare of land and the communal area require 1.05m2 per FTSE student.

Satisfied customers tend to have a higher probability of generating positive word-of-mouth (WoM) (Kwan et al., 2013). Thus, Sandberg and Solvoll, (2015) say that it is more likely that satisfied students engage in positive WoM communication than do less satisfied students. Kehrwald *et al.*, (2013) also argued that for spaces to contribute to learning, they needed a clearly stated strategy of instruction. This will help the services and facilities to work together towards the philosophies that are basis of the space, rather than just occupying the space. This is particularly relevant in areas which tend to include a number of competing services such as classrooms, toilets and cafeterias.

2.8 Summary of the Literature Review

Quality education is important in socio-economic development of a nation and it is measured thorough the productive output in the labour market (Bunyi, 2013). In Kenya university education became necessary after independence to answer the call for local skilled manpower to take up the challenges of the newly born independence. This study aims at finding out the impact of double intake programmes on the quality of education at the University of Nairobi. Previous studies by (Ogachi & Jowi, 2013; Sifuna, 1998) focused on factors that lead to growth of universities and university infrastructure across the nation without a focus on the quality of university education. On the other hand, Gichohi (2016) realized that the growth of universities and their infrastructure was unplanned and therefore sought to study governance factors by management affecting

development of infrastructural facilities. She did not seek to find out the significance of the infrastructure in promoting quality university education.

Surveys carried out by (Ogeto, 2015; Ndirangu & Lennon, 2013) indicate that there has been an increase in enrollment of students for university education over the recent years. They note that this increase has an impact on the existing infrastructure. However, they did not seek to find out the impact of huge enrolment on the quality of university education. A backlog of students to join university may occur from time to time which my lead to double intake programmes. There is a gap on how best this scenario can be handled without affecting the quality of university education. This study sought to determine the management practices that may not undermine the quality of university education in future. The government and other stakeholders who fund university education get an insight on the need to set up student placement policies that are in line with the existing infrastructure and manpower for quality university education.

2.9 Theoretical Framework

This study was based on two theories; Abraham Maslow's Hierarchy of Needs theory and the Herzberg's Two-Factor Theory of Motivation. Abraham Maslow in 1940s developed his theory of individual development and motivation where he suggested that human beings have a hierarchy of needs. All humans act in a way which will address basic needs, before moving on to satisfy higher level needs. The important thing to recognize is Maslow's contention that one's sense of well-

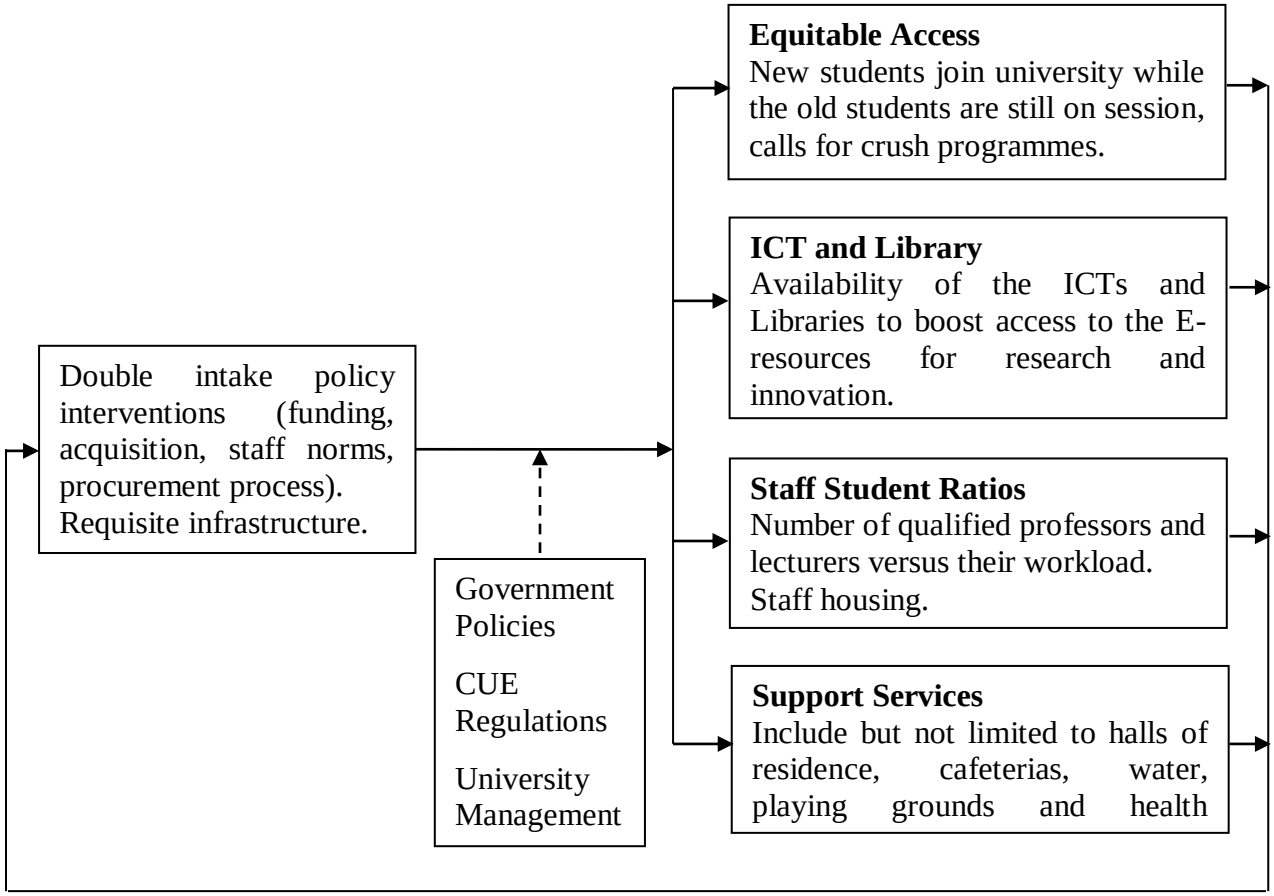
being increases as the higher level needs are met. The universities have come up with programmes and courses to meet the desires of the students as well as the job market; this is to ensure that the learners are first comfortable before they can work to achieve better grades in their studies. Various modes of study such as the regular and module II programmes, evening classes, distance learning as well as school-based programmes are meant to satisfy the learners.

Frederick Herzberg in 1959 proposed a Two-Factor theory where he notes that there are some job factors that result in satisfaction while there are other job factors that prevent dissatisfaction. The managers must guarantee the adequacy of the hygiene factors (factors which are essential for existence of motivation at workplace) to avoid employee dissatisfaction. Managers must make sure that the work is stimulating and rewarding so that the employees are motivated to work and perform harder and better. The university learning spaces must act as a model for quality education. The environment of the student is the most significant in student motivation. Effective learning takes place where instructional resources are used. The environment has to motivate students to do independent learning. Pressure on these facilities will equally cause them to get dilapidated quickly eliminating the element of motivation and satisfaction among the students who will be using those facilities. Quality education will be achieved when the universities operate within their optimum standards.

2.10 Conceptual Framework

In this study quality in university education was reviewed through policies that are formulated and implemented in the university education of Kenya by the Universities Act and the University Standards and Guidelines. Cross examination of these policies would help determine the areas that should be maintained and what improvements would help maximize benefits as well as find techniques to eliminate problems. The conceptual framework is illustrated in the figure 2.1 that follows.

Figure 2.1: The Conceptual Framework.



This framework presents the relationship between the independent and the dependent variables. In this study, the independent variables affect the overall performance of a certain university. The intervening variables equally come in to affect the dependent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the research design, target population, sample size and sampling procedures, research instruments, validity of research instruments, reliability of research instruments, data collection procedures, data analysis techniques and ethical considerations.

3.2 Research Design

This study employed a descriptive survey design to find out how university double intake programmes impact on the quality of education in the University of Nairobi. Gichohi (2016), in her studies notes that a descriptive survey entails a collection of information from a selected sample by the way of administration of questionnaires, observation, document study and interviews. Descriptive survey design collects data about the population's opinions, habits, attitudes, and any variety of social issues.

3.3 Target Population

The target population of this study was the University of Nairobi, Kenya. The university has about 61,000 regular students who are enrolled to 43schools/faculties. Out of these, there are 5,900 students who are in their fourth

year of study. In addition, there was about 2,000 teaching staff in the university who were also part of the population studied.

3.4 Sample Size and Sampling Procedures

A sample is a portion of the population that represents the entire population. For the purpose of getting a representative sample, the target population was grouped into two. In order for the sample to be an accurate representative of the population the cross-section of the population should be selected scientifically (Calmorin & Calmorin, 2007). According to Calmorin and Calmorin (2007) the following formula is used to have a scientific determination of sample size.

$$S_s = \frac{NV + [Se^2(1-P)]}{NSe + [V^2P(1-P)]}$$

Where: S_S = Sample size

N = Total number of population

V = Standard value (2.58)

Se = Sampling error (0.01)

P = Largest possible proportion (0.50) (Calmorin & Calmorin, 2007).

Since the targeted population in this study is 5,900 fourth year students and 2,000 members of the teaching staff the sample size in this study was as shown in table 3.1 that follows;

Table 3.1 Sample Size

Target Population	Population	Sample Size
Fourth year students	5,900	251
Members of the teaching staff	2,000	238
Total	**7,900**	**489**

This study employed the use of a probability sampling method which is a sampling method that relies on a random, or chance, selection method so that the probability of selection of population element is known (Schutt, 2009; Egbenya *et al*, 2016). Simple random sampling technique for teaching staff and stratified random sampling of the students was done. This is a technique of sampling that relies on a random or chance selection method so that every element on the sampling frame has a known probability of being selected. In other words, it is a technique of sampling in which every sample element is selected only on the basis of chance, through a random process (Schutt, 2009).

3.5 Research Instruments

The study used questionnaires, document study guide, observation checklist and interview protocol as the instruments for the study. The questionnaires were administered on the representative sample of the target population. Gichohi (2016), found out that the questionnaires can be self-administered, they are anonymous and can be standardized above all they ease data analysis procedures.

The questionnaires had both the closed and open ended questions. Document study guide on infrastructure, enrollment, staff employment and graduation as well as observation checklist on lecture halls enabled the researcher not to miss out on the important areas of study. The interview protocol enabled the researcher to have a smooth flow of questions and therefore save on time set aside for the interview. The instruments collected both the qualitative and quantitative data. The instruments were developed by the researcher.

3.5.1 Validity of Research Instruments

Validity is the degree to which a test measures what it purports to be measuring. The degree to which results obtained from analyzed data represents a phenomenon under investigation can be referred to as validity (Gichohi, 2016).Face validity and Content Validity will be tested. Face validity involves the misunderstanding or misinterpretation of the question by the respondent. This was checked by way of employing the pre-testing method. The instrument was administered on five responds before the main research to check for unclear wordings and if the questionnaire was too long. Content validity refers to the capacity of the instrument to provide adequate coverage of a topic. Adequate preparation of the instruments through guidance of the supervisor helped to establish the content validity.

3.5.2 Reliability of Research Instruments

Reliability is the measure of the extent to which an instrument will consistently yield the similar results after being administered several times to the same respondents (Gichohi, 2016).Reliability was established by the test retest method where the pretest respondents filled in the questionnaires and the same was subjected to a retest. The collected score was computed by the use of Pearson's moment correlation coefficient (r) using the following formula:

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{\{(N\sum X^2 - (\sum X)^2)(N\sum Y^2 - (\sum Y)^2)\}}}$$

Where:

ΣX = the sum of scores in the X distribution.

ΣY = the sum of scores in the Y distribution.

ΣX^2 = the sum of the squared scores in the X distribution.

ΣY^2 = the sum of the squared scores in the Y distribution.

ΣXY = the sum of the product of paired X and Y scores.

N = the number of paired X and Y scores.

A reliability co-efficient of about 0.8 was sufficient enough to judge an instrument as reliable for use in conducting a study (Orodho, 2014).

3.6 Data Collection Procedures

The National Commission of Science, Technology and Innovation (NACOSTI) are mandated with giving permission to researchers to conduct their research on various areas of interest. I sought for permission from the commission and thereafter visited the targeted population in order to conduct the research. I made necessary arrangements with the institutions prior to my visits. The letter of introduction helped in familiarizing with the respondents. I left the questionnaires with the target population and pick them later. I trained my research assistant on how to approach the respondents with courtesy and to understand the time frames within which to collect the questionnaire from the respondents with confidentiality.

3.7 Data Analysis Techniques

After data collection, data coding followed for the purpose of analysis. Data analysis involved both the quantitative and qualitative procedures. Quantitative data analysis entailed descriptive and inferential statistics using the computer spreadsheets and the Statistical Package for Social Sciences (SPSS).Qualitative data was analyzed thematically by the way of understanding the meaning of the given responses by the respondents and their consistency to the subject. Analyzed data was compared to the documented data on the researches done earlier. Thematically, data presentation with regard to the objectives of the study

followed. Presentation was through the frequency distribution tables, percentages and inferential statistics.

3.8 Ethical Considerations

The research permit was sought before administering the research instruments in data collection for the protection of the participants and their rights. The respondents were also assured of the confidentiality of their identities and that of the information provided as to be solely for the research purpose.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter covered data analysis of this study that had sought to investigate the influence of double intake programmes on the quality of university education at the University of Nairobi. The findings presented included the response rate, the bio data of the respondents and response based on the study objectives. The objectives that guided the study were equitable access of lecture halls, access and usage of ICT, staff student ratios and student support services influence on quality education at the University of Nairobi.

4.2 Questionnaire Response Rate

The response rate from the data collection exercise sought to explain the willingness and the level of understanding of the questionnaire administered. The response rate is as represented in Table 4.1 that follows.

Table 4.1 Questionnaire Response Rate

Population	**Questionnaires Distributed**	**Questionnaires Returned**	**Response Rate Percentage (%)**
Students	251	216	86%
Staff	238	172	72%
Total	**489**	**388**	**79%**

The data in Table 4.1 can be interpreted that the sampled respondents were willing to participate owing to the fact that 79 percent of them filled and returned the questionnaires. It may be a clear sign of understanding and grasp of the subject of the study hence relevance of the study.

4.3 Social Demographic Information

The study sought the socio demographic information of the university staff and the fourth year students who participated in the study. The staff stated the length of time they have been in the institution. Together with the students they also gave information on the delayed graduations of students. This was with a view of relating the information to their understanding of the university practices in relation to the quality of education at the university.

The staff's length of stay in the university was captured as shown in table 4.2 that follows.

Table 4.2 Length of Stay of the Staff Members at the University

Length of stay	**Frequency**	**percentage**
0-2 Years	27	15%
3-5 Years	89	52%
6 Years and above	56	33%
Total	**172**	**100%**

The responses as shown in table 4.2 indicate that majority of the respondents (52%) had served as for a period of 3-5 years while others had served for periods of over 6 years (33%). A negligible percentage had served for less than two years (15%). This reflected a reliable of understanding of the double intake practices in the university and therefore being beneficial to exploiting the experience of the respondents. In this regard the respondents had a vast experience of the effects of the double intake programmes that the university had engaged in as directed by the Ministry of education.

The responses given by the students on the delayed graduations were as represented on the table 4.3 that follows.

Table 4.3 Graduation Rates

Responses	**Frequency**	**Percentage**
Yes	202	94%
No	14	6%
Total	**216**	**100%**

The responses in table 4.3 above indicate that majority students (94%) are convinced that learners delay to graduate after their stipulate time of course duration. Respondents gave reasons that indicate that an enlarged population that surpasses the infrastructure in place is a major cause that leads to students not graduating on time. Some other reasons given were lack of school fees, student

unrests as well as the boycotts by the lecturers. The study focused on the enrollment of the students in large numbers than the infrastructure that is place to support university education.

4.3.1 Student Population and the Infrastructure in Place

Delayed graduation of students also led to an increase in number of students on campus. Just like the double intake programmes the huge student numbers had posed a major strain on the infrastructure that is in place. Students had to use the available resources in turn or shifts. Many classes had to be postponed for the lack of rooms for learning to take place. Some did local arrangements with their lecturers so that they meet in different hours to compensate for the missed classes. Sometimes students were forced to go for very long holidays to give room for other programmes to take place as the facilities in place are not enough to have all the programmes taking place at the same time. There was a big concern from the respondents of students losing their marks. This was attributed to the large number of students that a lecturer has to handle in one particular time. All this findings relate to the research done by (Kagondu & Marwa, 2017) depicting that the university did not have adequate resources for quality university education.

4.4 Double Intake and Equitable Access to Lecture Halls

The study sought to answer the question, ‘How did equitable access to university lecture halls affect the quality of education at the University of Nairobi?’ The

question was answered using the items that were in the questionnaires and other instruments of data collection. The data on this question was analyzed using descriptive statistics, frequencies, percentages, Chi-square test and the Pearson's coefficient correlation and the results were shown in the following subheadings.

4.4.1 Adequacy of Facilities to Support Double Intake Programmes

Data on the adequacy of facilities to support the double intake programmes in the university was as shown in figure 4.1 that follows.

Figure 4.1 Adequacy of Facilities to Support Double Intake Programmes

Responses in figure 4.4.1 above indicate that majority of the respondents 70.9 percent (n=275) did not consider the university to having adequate facilities that could support the double intake programmes while 29.2 percent (n=113) thought otherwise.The growth in student numbers had a direct effect on the access of the facilities in the various campuses of the university. The rising population required more infrastructure to accommodate the needs of various education programmes.

This indicated that the infrastructural demands affected the quality of university education in that the population could not be accommodated comfortably by the available facilities agreeing with studies by Ouma (2018). Therefore, it can be interpreted that despite the need to have the double intake programmes to solve the backlog of the students who had completed their form four and needed to join university, the move could compromise the quality of university education just as indicated in the studies by Ndirangu and Udoto (2011).However, the double intake programmes are periodical events that may not warrant infrastructural expansion for short term.

4.4.2 Direct or Indirect Effect on Access to Facilities

Responses on how respondents were affected with regard to accessing the facilities in the university was as shown in table 4.4 that follows

Table 4.4 Direct or Indirect Effect on Access to Facilities

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	25	56	58	125	124	388
Percentage	6.4	14.4	14.9	32.2	32	100

The responses in table 4.4 above show that most of the respondents 32.2 percent (n=125) and 32 percent (n=124) agree and strongly agree respectively that they were affected either directly or indirectly by the double intake programmes when it came to access of the facilities for comfortable learning at the university while

6.4 percent (n=25) and 14.4 percent (n=56) strongly disagree and disagree that they were affected. The responses confirmed that the periodic enrollment that was unplanned did not foresee the challenges that would arise. The findings were in line with studies by Gurzynski-Weiss, Long and Solon (2015) who argued that students could not comfortable without appropriate infrastructure. It could be interpreted to mean that the university needed more facilities to accommodate the high student population at the time. Findings confirmed results of a study by Kagondu and Marwa (2017) that universities did not have the necessary physical facilities to effectively offer teaching and learning to their students.

4.4.3 Inability to Access Lecture Halls at Times

Data on the inability to access the lecture halls at times when required for use in the university was as shown in figure 4.2 that follows.

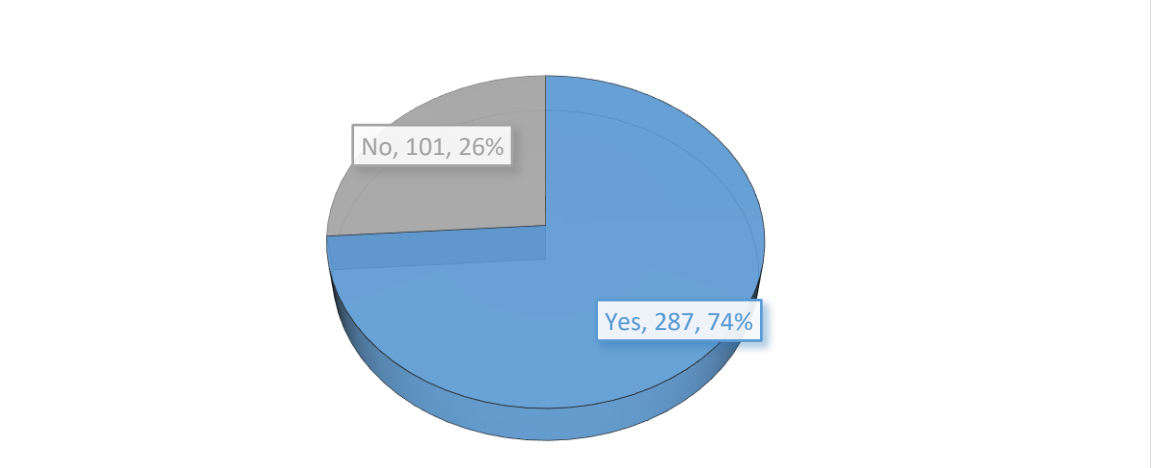


Figure 4.2 Inability to Access Lecture Halls at Times

The findings in the figure 4.2 indicate that majority of the respondents 74 percent (n=287) sometimes could be unable to access the lecture halls when they needed to access them. Only 24 percent (n=101) of the respondents said that they did not have challenges in accessing the lecture halls whenever they needed to use them. This findings could be attributed to the studies by Kagondu and Marwa (2017) who there could be challenges of access to university facilities where the number of students is not matched with the facilities. This situation forced the affected parties to make local arrangements to have their classes at different times to make up for the lost time.

A Chi-Square test was used to test the influence of inadequacy of lecture halls on the inability to access the university lecture halls by students and lecturers for teaching and learning. The findings are as shown in table 4.5 that follows.

Table 4.5 Chi-Square Test on the Inadequacy of Lecture Halls' influence on the Inability to Access the Lecture Halls

	Value	**df**	**Asymptotic significance (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**
Pearson Chi-Square	56.107[a]	1	.000		
Continuity Correction[b]	54.216	1	.000		
Likelihood Ratio	83.324	1	.000		
Fisher's Exact Test				.000	.000
Linear by Linear Association	55.962	1	.000		
N of Valid Cases	388				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 29.41.

b. Computed only for a 2x2 table

Table 4.5 shows a Chi-Square value of $x^2 = 56.107$ at significance level 0.000. The Chi-Square test indicates that the P-value .000 is less than the $\alpha = .01$. It can be interpreted that, statistically there was a relationship between the inadequacy of lecture halls and the inability to access the lecture halls at the university.

The Pearson's correlation coefficient was also used to test the relationship between the inadequacy of lecture halls and the inability to access the lecture halls whenever they were needed by students and lecturers for teaching and learning. The findings are as shown in table 4.6 that follows.

Table 4.6 Correlation between the Adequacy of Lecture Halls and Inability to Access the Lecture Halls

		Adequacy of Facilities	Inability to Access Lecture halls
Adequacy of Facilities	Pearson Correlation	1	.380**
	Sig. (2-tailed)		.000
	N	388	388
Inability to Access Lecture halls	Pearson Correlation	.380**	1
	Sig. (2-tailed)	.000	
	N	388	388

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.6 shows the Spearman's Rank Order correlation run to determine the relationship between the adequacy of lecture halls and inability to access the

lecture halls as r_s=0.38, and p=0.000). It can be interpreted to mean that there is a moderate positive correlation between the adequacy of facilities and the inability to access the facilities.

4.4.4 Coping with Large Number of Students versus Access to Facilities

The respondents had varied responses regarding the way the university copes with the large number of students verses the seemingly inadequate facilities. Some respondents alluded that the university has come up with a strategy where some students go home for long holidays while some cohorts remain in school to continue with their studies and this has eased on the pressure exerted on the facilities. Other respondents said that the university introduces the evening programmes or timetables that enable learners to access the facilities in shifts. It was noted that some learners have to make local arrangements with their lectures, in that they can have their classes during the weekends so that they can cover their courses in time to avoid the backlogs.

There were respondents who noted that the university was trying to come up with more infrastructural developments that would increase the number of lecture halls. At times some lectures were done in makeshift classrooms such as tents and under tree shades. Students were urged to pay their fees in time as a way that would help the university get funds to meet its infrastructural obligations.

4.5 Double Intake on Access and Usage of ICT and Library Facilities

The study sought to answer the question, 'In what ways did access and usage of the ICT and library facilities affect the quality of education at the University of Nairobi?' The question was answered using the items that were in the questionnaires and other instruments of data collection. The data on this question was analyzed using descriptive statistics, frequencies and percentages and the results were shown in the following subheadings. The data on this question was analyzed using descriptive statistics, frequencies, percentages, Chi-square test and the Pearson's coefficient correlation and the results were shown in the following subheadings.

4.5.1 Libraries' Capacity to Accommodate a Huge Number of Students at Any Time

Respondents were asked to give their thoughts on the size of the libraries and the ability to serve the students at any particular time. The responses given were as shown in table 4.7 that follows.

Table 4.7 Libraries' Capacity to Accommodate a Huge Number of Students at Any Time

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	28	50	68	100	142	388
Percentage	7.2	12.9	17.5	25.8	36.6	100

Findings in table 4.7 indicate that most of the respondents 25.8 percent (n=100) and 36.6 percent (n=142) agree and strongly agree respectively that the university had set up libraries with adequate facilities to support learning, especially personal studies. This is an indication that the university understands that the library that satisfies the needs of the students ensure that students do well in their studies. The findings concur with the studies done Mwanzu and Wendo (2017) that there is transformation of libraries in higher learning institutions to becoming ultramodern facilities that support learning activities. The findings are in line with Wendo and Mwanzu (2016) that technological advancements will make it easier for the learners to access learning materials from the online platforms.

4.5.2 Satisfaction on Accessibility and Use of ICT Facilities

The study sought to find out the extent to which the learners were satisfied with the accessibility and use of the ICT resources. Figure 4.3 shows the responses as follows.

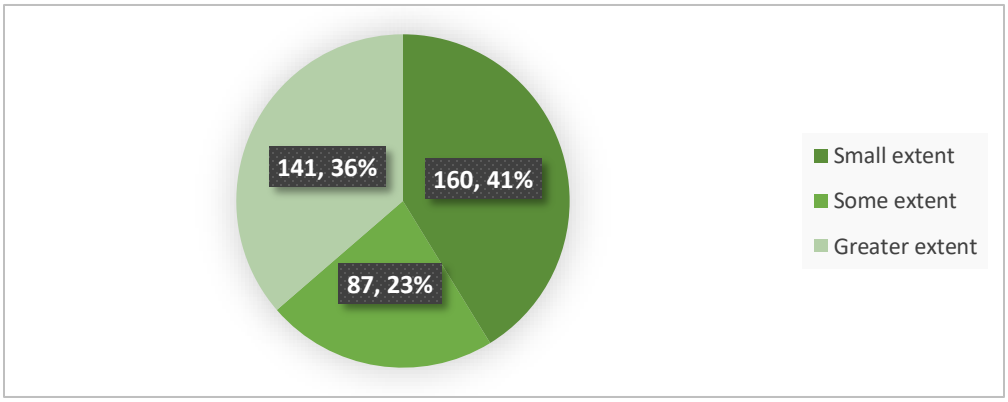


Figure 4.3 Satisfaction on Accessibility and Use of ICT Facilities

Findings in figure 4.3 show that most of the respondents 41 percent (n=160) were to a small extent satisfied, 23 percent (n=87) were to some extent satisfied and 36 percent (n=141) were to a great extent satisfied with provisions of the ICT facilities by the university. The respondents confirmed that the studies by Wendo and Mwanzu (2016) were true that the university has not invested much in the ICTs for teaching and learning, research and general administration in the universities. The facilities in place could not support the huge influx of students' numbers that were not foreseeable to happen in the future. Many students had to get off campus to have their assignments done in cybercafés as the available computers on campus were always on demand. Most of the respondents felt that the wireless hotspots were limited to some geographical areas on campus. Students who needed to use the wireless need to move all the way from the comfort zones in order to access the internet facilities. The responses verified that the university contrary to Wanjala *et al*., (2014) who said that student learning can be enhanced and made more effective when learning environment is made adequate and appropriate. The findings agreed with Gichohi (2016), that the expansion in university education in Kenya has not been adequately accompanied with requisite building infrastructure and teaching and learning resources.

A Chi-Square test was used to test the influence of the huge library capacity on the level of satisfaction in accessing and using ICT facilities. The findings are as shown in table 4.5 that follows.

Table 4.8 Chi-Square Test on the Library's Capacity and Satisfaction in Access and Usage of ICT Facilities

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	52.268[a]	8	.000
Likelihood Ratio	52.926	8	.000
Linear by Linear Association	13.519	1	.000
N of Valid Cases	388		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.28.

Table 4.8 shows a Chi-Square value of $x^2 = 52.268$ at significance level 0.000. The Chi-Square test indicates that the P-value .000 is less than the $\alpha = .01$. It can be interpreted that, statistically a huge library at the university does not influence the satisfaction on access and use of the ICT facilities. Therefore, this implies that the library can be of huge capacity but without the requisite ICT infrastructure to support teaching and learning.

The Pearson's correlation coefficient was also used to determine the relationship between the huge library capacity and the level of satisfaction of access and use of ICT facilities. The findings are as shown in table 4.9 that follows.

Table 4.9 Correlation between the Library's Capacity and Satisfaction in Access and Usage of ICT Facilities

		Huge Library Capacity	Satisfied with ICT Facilities
Huge Library Capacity	Pearson Correlation	1	-.187**
	Sig. (2-tailed)		.000
	N	388	388
Satisfied with ICT Facilities	Pearson Correlation	-.187**	1
	Sig. (2-tailed)	.000	
	N	388	388

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.9 shows the Spearman's Rank Order correlation run to determine the relationship between the library capacity and the level of satisfaction of access and use of ICT facilities as r_s = -0.187 and p= 0.000. It can be interpreted to mean that there is negligible correlation between the capacity of the library and the satisfaction on the access and use of the ICT facilities. Therefore, this means that the university should put measures that will ensure development of ICT facilities for quality education outcomes.

4.5.3 Use and Improvisation of ICT Facilities

The study sought to determine the extent to which the lecturers were using the ICT facilities in learning or improvising in cases of the lecture halls without the ICT facilities. Table 4.10 that follows shows the responses that were given.

Table 4.10 Use and Improvisation of ICT Facilities

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	73	65	99	94	57	388
Percentage	18.8	16.8	25.5	24.2	14.7	100

Responses in table 4.10 above indicate that most of the respondents 24.2 percent (n=94) and 14.7 percent (n=57) agree and strongly agree respectively that lecturers embrace the use of ICT to make learning interesting and captivating. This study indicated that 25.5 percent (n=99) were undecided to whether the lecturers make use of the ICT facilities when teaching. To some extent, 18.8 percent (n=78) and 16.8 percent (65) strongly disagree and disagree respectively that lecturers use the ICT facilities when teaching. The findings imply that the lecturers agree with Clark (2008) and Vazquez and Estrada (2014) who say that when PowerPoint is used as a presentation tool in university lectures, it is pedagogically effective only while it provides variety and stimulates interest in the learning environment. Large student numbers could not favour the students who sat at the back of the lecture theatres, especially when demonstrations were

being done using laptops. Some lecture halls did not have inbuilt projectors and displays. Cases where the lecturers wanted to use the portable projectors with their laptops, it took time to set up the devices hence wasting part of the time meant for learning.

4.5.4 University Measures to Develop and Acquire Modern ICT Infrastructure

The university is believed to have the best digital repository across the country. Graduates are required to submit their projects and thesis on the online platform of the university to allow easy access by other scholars. Most administrative roles of the university were seen to be done through the online portal. Examples to note were; course enrollment, application for school identity cards, monitoring fees payment, issuance of exam cards and provision of exam results. The university had tried to install ICT facilities in the lecture halls to boost the use of ICT. The major concern noted by respondents was that some of the facilities that were in place do not work and maintenance was not taken keenly by the university. It was noted that computers in the library and ICT laboratories could break down and take ages before they are repaired or replaced with new ones.

The university recorded some improvement by creating more wireless network hotspots commonly known as Wi-Fi and providing passwords to the learners for easy access to the internet for digital materials which was in line with studies

done by Forrest and Hinchliffe (2005). This was meant to help students to use their own computers, laptop and mobile phones to help decongest the university ICT centres. These needed to be accompanied with more power outlets in form of sockets so that learners could be able to charge their gadgets. The university had also ensured that all the new infrastructural buildings that developed in the recent past were compliant with the ICT needs of a modern university. An example was the University of Nairobi Towers at the main campus which had installations of microphones, projectors, display boards and several power supply sockets.

4.6 Double Intake's Effect on Staff Student Ratio and the Teaching/Learning Activities

The study sought to answer the question, 'What effect did staff student ratios have on quality of education at the University of Nairobi?' The question was answered using the items that were in the questionnaires and other instruments of data collection. The data on this question was analyzed using descriptive statistics, frequencies and percentages and the results were shown in the following subheadings.

4.6.1 Student Numbers versus Non-Academic Staff Numbers

Data collected from respondents regarding this question was analysed by getting the frequencies and percentages of the responses that were given by the respondents.

Responses on whether the university had enough number of the non-academic staff versus the number of students enrolled were as shown on Table 4.11 that follows.

Table 4.11 Student Numbers versus Non-Academic Staff Numbers

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	48	75	75	111	79	388
Percentage	12.4	19.3	19.3	28.6	20.4	100

The responses in table 4.11 above show that most of the respondents 28.6 percent (n=111) and 20.4 percent (n=79) agree and strongly agree that the non-academic staff of the university during the double intake enrollment were not proportional to the number of students. Those who were undecided over the issue were 19.3 percent (n=75) while a minority of the respondents 12.4 percent (n=48) and 19.3 percent (n=75) thought that the number of the non-academic staff was sufficient to serve the students at that time. The implication of these responses is that students could not be served well or in time whenever the needs arose. For instance, queues could be very long at the university health centre and the cafeteria. Cleaning was hectic for the staff because the users of the available facilities were many hence continuously making the already cleaned areas dirty. Examples drawn from this were the staff cleaning the libraries, washrooms and the hostels. The findings were in agreement with Brint and Clotfelter (2016) who found out that effectiveness of the staff can reduce when their numbers are below

the threshold. This impacted negatively on the learning environment where the learners seemed not to get adequate and effective environment. The findings were in agreement with Wanjala *et al*., (2014) who said student learning can be enhanced and made more effective when learning environment is made adequate and appropriate.

4.6.2 Student Numbers versus Academic Staff Numbers

The study also sought to assess the effect of double intake programmes had on the increased number of students versus the available academic staff numbers. The responses given were as shown on table 4.12 that follows.

Table 4.12 Student Numbers versus Academic Staff Numbers

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	36	64	56	132	100	388
Percentage	9.3	16.5	14.4	34	25.8	100

Data in table 4.12 above show that most of the respondents 34.0 percent (n=132) and 25.8 percent (n=100) were of the opinion that the number of the academic staff was not sufficient enough to serve the students who were enrolled in the university. Those who were undecided were 14.4 percent (n=56) while a minority of the respondents 9.3 percent (n=36) and 16.5 percent (n=64) were of the opinion that the number of academic staff were sufficient enough to handle the large number of the students who were enrolled. The findings in table 4.8 above agree

with the study by Norrie and Lennon (2013) that average class sizes have become larger. Some class sizes were too large that the lecturers have to use microphones in order for every student to get want is being taught. The findings showed that microphones were used to project the voice of lectures to the big crowd of learners which was in tandem with the studies done by Ogeto (2015).

The study findings also indicate that assessment of these huge numbers of students attached to a single lecturer was a problem. There were cases reported of missing marks by the students probably because their answer sheets were misplaced or got mixed up with others. Lecturers felt that teaching and marking of this large number of students' work was overwhelming. It was noted that class attendance was almost impossible to monitor with this large student numbers. Findings were in line with Wanjala *et al*., (2014) that the large number of students attached to a lecturer made the learning environment less effective. The diminished educational quality in the university education outcome can be attributed to these study findings. The study findings implied that the situation did not comply with the standards set by the UNESCO (1979).

4.6.3 Student Access to Individual Attention from their Lecturers

This study also sought opinion regarding the individual attention accorded to the students towards teaching and learning processes. The responses given were as shown in the table 4.13 that follows.

Table 4.13 Student access to individual attention from their lecturers

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	148	96	28	64	52	388
Percentage	38.1	24.7	7.2	16.5	13.4	100

The study findings in table 4.13 above indicated that most of the respondents 38.1 percent (n=148) and 24.7 percent (n=96) did not think that the students were getting individual attention from their lecturers. On the other hand, 7.2 percent (n=28) were undecided of whether students get the individual attention or not. Respondents who think that students get individual attention were 16.5 percent (n=64) and 13.4 percent (n=52). This findings were attributed to the large student numbers versus a single lecturers attached to them. The finding were in line with thoughts by Ndirangu and Udoto (2011) that lecturers experienced a huge work load and at the same time, the number of students who could want to see them was huge and therefore not all could get the time to consult.

4.6.4 Students Missing Out Some Concepts Due to Large Class Numbers

Responses on the impact of large number of students in lecture halls on some students missing out some concepts from lecturers were as shown on figure 4.4 that follows.

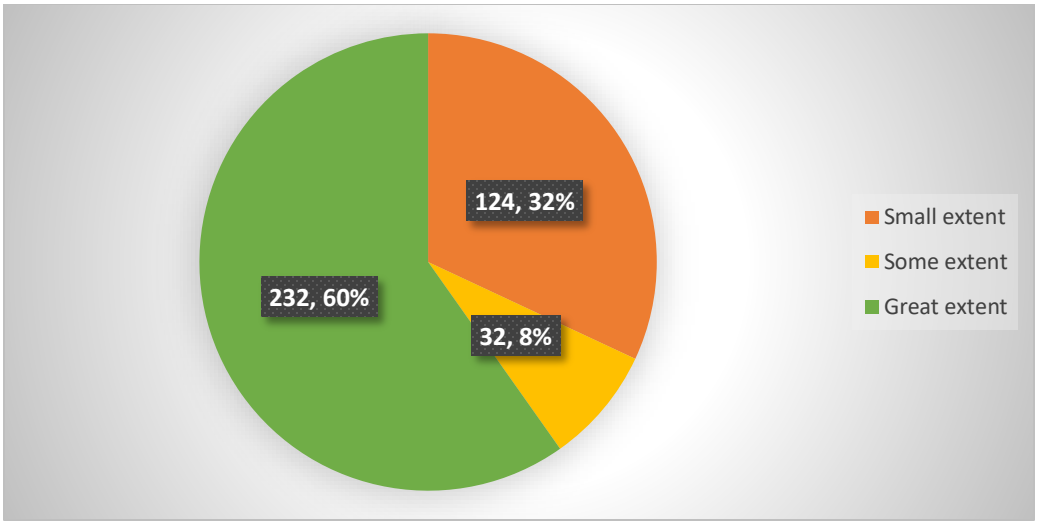


Figure 4.4 Students Missing Out Some Concepts Due to Large Class Numbers

The finding of the study from the responses in figure 4.4 above indicate that majority 60 percent (n=232) were of the opinion that to a great extent some students missed out on some concepts due to large students numbers in the lecture halls. On the contrary, 32 percent (n=124) thought that to a small extent learners missed on some concept, and 8 percent (n=32) thought it was to some extent. The findings showed the same scenario to what Ellison (2016) had in mind that a learning space should ideally have four attributes; easily accessed, able to be used for a range of activities, allow learners to socialize and lastly make learners comfortable with a sense of belonging. The study findings alluded that these basic specifications of the learning spaces were not met when the double intake programmes took place hence affecting the learning outcomes. The findings

agreed with the studies by Wanjala *et al*., (2014); Wood, Warwick and Cox, (2012) that the learners in this physical environment cannot not motivated to be attentive during the lectures.

A Chi-Square test was used to test the influence of students versus academic staff numbers on the extent of students missing out on concepts during lectures. The findings are as shown in table 4.14 that follows.

Table 4.14 Chi-Square Test on Students versus Academic Staff Numbers Influence on the Extent of Students Missing Out on Concepts during Lectures

	Value	**df**	**Asymptotic significance (2-sided)**
Pearson Chi-Square	4.311[a]	8	.828
Likelihood Ratio	4.249	8	.834
Linear by Linear Association	.501	1	.479
N of Valid Cases	388		

a. 2 cells (13.3%) have expected count less than 5. The minimum expected count is 2.97.

Table 4.14 shows a Chi-Square value of $x^2 = 4.311$ at significance level 0.828. The Chi-Square test indicates that the P-value .828 is greater than the $\alpha = .01$. It can be interpreted that, statistically a when the number of students is not in line with the recommended number of the academic staff numbers the students will miss out on the concepts that are taught during the lectures.

The Pearson's correlation coefficient was also used to determine the relationship between the students versus academic staff numbers on the extent of students

missing out on concepts during lectures. The findings are as shown in table 4.15 that follows.

Table 4.15 Correlation between the Students versus Academic Staff Numbers and the Extent of Students Missing Out on Concepts during Lectures

		Students versus Academic Staff numbers	Extent of missing concepts during lectures
Students versus Academic Staff numbers	Pearson Correlation	1	.036**
	Sig. (2-tailed)		.480
	N	388	388
Extent of missing concepts during lectures	Pearson Correlation	.036**	1
	Sig. (2-tailed)	.480	
	N	388	388

Table 4.15 shows the Spearman's Rank Order correlation run to determine the relationship between the students versus academic staff numbers and the extent of students missing out on concepts during lectures as $r_s = 0.036$ and $p = 0.480$. It can be interpreted to mean that there is a strong positive correlation between the student academic staff rations and the extent of missing out on concepts while attending lectures. Therefore, this means that the university should ensure that the lecturers handle a standard number of students to avoid compromising the quality of university education.

4.7 Double Intake's Effect on the University's Student Support Services

The study sought to answer the question, 'How did the student support services affect quality of education at the University of Nairobi?' The question was answered using the items that were in the questionnaires and other instruments of data collection. The data on this question was analyzed using descriptive statistics, frequencies, percentages, Chi-square test and the Pearson's coefficient correlation and the results were shown in the following subheadings.

4.7.1 Policies or Regulations Prohibit Some Student Activities in Social Areas

Responses on the policies or regulations that prohibit students from engaging in some activities when they are in the social areas such as cafeterias, student centres and hostels were as shown in table 4.16 that follows.

Table 4.16 Policies or Regulations Prohibit Some Student Activities in Social Areas

Responses	Frequency	Percentage
Yes	277	71.4%
No	111	28.6%
Total	388	100%

The responses in table 4.16 showed that majority of the respondents 71.4 percent (n=277) were of the opinion that the university had put in place policies or regulations that ensured that students do not engage in activities that could affect

others as they shared the common spaces. These findings were a confirmation to Kehrwald *et al.*, (2013) findings that the university should mind learning spaces that had a clear strategy in instruction. Students were not allowed to cook their own meals in the university's halls of residence because of hygiene reasons which was in agreement with studies by Modebelu and Chinyere (2014) that it was a way of checking climate change and the associated environmental degradation in the institutions. At times the aromas from meals cooked in the hostels were considered hindrances to the students who were doing studies from their rooms. The university also thought that the electricity bill due to cooking in the hostels was high and therefore this policy was a move to reduce the operational costs.

4.7.2 Pressure on the Social Facilities in the University

Responses on the pressure that was experienced on the social facilities after the double intake programmes was as shown on figure 4.5 that follows.

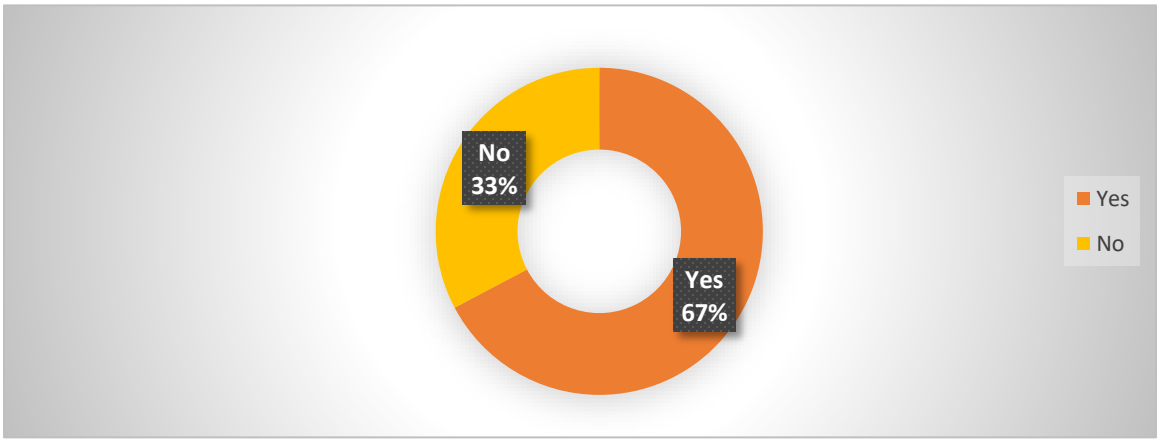


Figure 4.5 Pressure on the Social Facilities in the University

Figure 4.5 shows that majority of the respondents 67.3 percent (n=261) indicated that the social facilities in the university were under pressure due to the large student population. Right sizes of facilities considering the student population were ignored when the double intake programmes was set to roll. Getting services at those facilities took a longer time than usual having an implication on time management. The pressure exerted upon the facilities also led to quick deterioration of these facilities and therefore impacting negatively on the comfort and satisfaction required in order to boost effective learning. The findings were in agreement with Kwan et al., (2013) who found that satisfied customers tend to have a higher probability of generating positive word-of-mouth.

A Chi-Square test was used to test the influence of prohibitive policies had on the pressure experienced at the social areas. The findings are as shown in table 4.17 that follows.

Table 4.17 Chi-Square Test on the Influence of Prohibitive Policies on the Pressure at Social Facilities Due to Large Student Numbers

	Value	df	Asymptotic significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	319.530[a]	1	.000		
Continuity Correction[b]	315.265	1	.000		
Likelihood Ratio	368.334	1	.000		
Fisher's Exact Test				.000	.000
Linear by Linear Association	318.707	1	.000		
N of Valid Cases	388				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 36.33.

b. Computed only for a 2x2 table

Table 4.17 shows a Chi-Square value of $x^2 = 319.530$ at significance level 0.000. It can be interpreted that, statistically there was a relationship between the prohibitive policies at the social areas and the pressure experienced on the social facilities. It can thus be interpreted to mean that the policies put in place determined the pressure exerted on the social facilities.

The Pearson's correlation coefficient was also used to test the relationship between prohibitive policies and the pressure experienced at the social areas. The findings are as shown in table 4.18 that follows.

Table 4.18 Correlation between the Prohibitive Policies at the Social Areas and the Pressure on Social Facilities Due to Large Student Numbers

		Prohibiting policies at the social areas	Pressure on social facilities
Prohibiting policies at the social areas	Pearson Correlation	1	.907**
	Sig. (2-tailed)		.000
	N	388	388
Pressure on social facilities	Pearson Correlation	.907**	1
	Sig. (2-tailed)	.000	
	N	388	388

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.18 shows the Spearman's Rank Order correlation run to determine the relationship between the policies prohibiting some behaviours in the social areas

and the pressure exerted on the social facilities as $r_s = 0.907$, and $p = 0.000$. It can be interpreted to mean that there is no relationship between policies put in place at the social areas and the pressure that is experienced at the social areas. This is to mean that even if the policies are done away with the pressure will still exist because the number of students is large.

4.7.3 Mechanisms in Place to Ensure Equal Chance to Get Hostel Accommodation

The study sought to determine whether the university had put mechanisms to ensure that all the students had an equal chance of getting accommodation in the university's campuses. The responses that were given were as shown in the table 4.19 that follows.

Table 4.19 Mechanisms in Place to Ensure Equal Chance to Get Hostel Accommodation

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	80	61	52	95	100	388
Percentage	20.6	15.7	13.4	24.5	25.8	100

The study findings from the responses in table 4.19 above indicate that most of the respondents 24.5 percent (n=95) and 25.8 percent (n=100) agree and strongly agree respectively that the university had put in place mechanisms to ensure that all students had an equal chance to get accommodation in the halls of residence.

The findings exonerate the university from the trouble that students undergo in the quest to get accommodation. The implication was that the government had failed when it allowed the double intake programmes in the university without providing the necessary student support services. Minority of the respondents 20.6 percent (n=80) and 15.7 percent (n=61) strongly disagree and disagree respectively that students had an equal chance to get accommodation and therefore these students spent much of their time in movement from campuses to areas where they had acquired rental house which had a negative effect of their academic outcomes. Some students could not do their studies in the library or hold group discussions till late because they needed to move off campus. The findings agreed with the study by Oladiran, (2013) who found out that student accommodation is largely insufficient and overcrowded in the public universities and thus, agreeing with Sandberg and Solvoll (2015) who say that it is more likely that satisfied students engage in positive WoM communication than do less satisfied students.

4.7.4 Water Supply in Campus

The study sought to understand the implication of huge student numbers on the water supply while in campus. The responses given were as shown in the table 4.20 that follows.

Table 4.20 Water Supply in Campus

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	108	112	32	64	72	388
Percentage	27.8	28.9	8.2	16.5	18.6	100

Responses in table 4.20 above indicate that most of the respondents 27.8 percent (n=108) and 28.9 percent (n=112) strongly disagree and disagree respectively that they were satisfied with the water supply in the university campuses. A minority of the respondents 16.5 percent and 18.6 percent thought that the water supply was sufficient. The population in the university needs water for various functions ranging from cleaning, cooking, drinking and the lavatories. The increased enrollment of students had a direct impact on the demand for water in the university. A common problem was observed in the toilets where water was not enough for flushing down wastes. Some water points were visibly broken down; the available ones that were working remained under pressure most of the times. The study findings were in line with the conclusions of Odundo *et al.*, (2015) that large student numbers led to problems of water shortage and poor hygiene.

4.7.5 Cafeteria Services versus the Large Student Numbers

Considering the fact that the student population had increased, the study sought to find out the effect this change had on the students whenever they needed meals from the cafeterias around the campuses. The responses that were given are as shown on table 4.21 that follows.

Table 4.21 Cafeteria Services versus the Large Student Numbers

Responses	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
Frequency	130	67	32	87	72	388
Percentage	33.5	17.3	8.2	22.4	18.6	100

The responses on table 4.21 above are a clear indication that the increase in student numbers was not commensurate to the development of infrastructure in terms of expansion to cater for the need. Most of the respondents 33.5 percent (n=130) and 17.3 percent (n=67) dissented that the cafeterias were enough to serve the student population. Responses were in line with the fact that the exponential growth in student numbers had put heavy strain on facilities and human resource in the universities as was noted by Wanjala (2018). The findings related to Ellison (2016) who found out that learning outcomes are directly affected by the comfort which the students get as they are being served in different capacities. According to Ellison students should conveniently access food, drinks and toilets in order to make the best use of their time when studying. This study findings suggest that Gichohi (2016) was right by saying that the requirements for infrastructure before setting up a university and the requisites before introducing new programmes entails adequate space and for delivery of academic programs.

4.8 Summary of Data Analysis

How did equitable access to university lecture halls affect the quality of education at the University of Nairobi? The findings indicated that most of the respondents did not consider the university to having adequate facilities that could support the double intake programmes. The findings confirmed that the periodic enrollment that was unplanned did not foresee the challenges that would arise. In what ways did access and usage of the ICT and library facilities affect the quality of education at the University of Nairobi? Majority of the respondents think that the university had set up libraries with adequate facilities to support learning, especially personal studies. Majority of the respondents were not satisfied with provisions of the ICT facilities by the university. Majority of the respondents were of the opinion that lecturers embrace the use of ICT to make learning interesting and captivating. The major concern noted by respondents was that some of the facilities that were in place do not work and maintenance was not taken keenly by the university.

What effect did staff student ratios have on quality of education at the University of Nairobi? The responses that were given indicate that majority of the respondents thought that the non-academic staff of the university during the double intake enrollment were not proportional to the number of students. Majority of the respondents were of the opinion that the number of the academic staff was not sufficient enough to serve the students who were enrolled in the university. The study findings indicated that majority of the respondents did not

think that the students were getting individual attention from their lecturers due to the large student numbers versus a single lecturers attached to them. The finding of the study indicate that majority were of the opinion that some students missed out on some concepts due to large student numbers in the lecture halls.

How did the student support services affect quality of education at the University of Nairobi? The responses showed that majority of the respondents were of the opinion that the university had put in place policies or regulations that ensured that students do not engage in activities that could affect others as they shared the common spaces. Majority of the respondents indicated that the social facilities in the university were under pressure due to the large student population. Right sizes of facilities considering the student population were ignored hence getting services at those facilities took a longer time than usual.The study findings from the responses indicate that majority of the respondents were of the opinion that the university had put in place mechanisms to ensure that all students had an equal chance to get accommodation in the halls of residence. Majority of the respondents were not satisfied with the water supply in the university campuses. Majority of the respondents dissented that the cafeterias were enough to serve the student population.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines summary of the study findings, conclusions and recommendations drawn from the findings in relation to the impact of double intake programmes on the quality of education in the University of Nairobi, Kenya. The study was guided by the following research objectives: equitable access to lecture halls, access and usage of ICT and library facilities, staff to student ratios and the support services and their impact on quality university education.

5.2 Summary of the Study

The study employed a descriptive survey design by administration of questionnaires, observation, document study and interviews. The target population of this study was the University of Nairobi, Kenya. The study was guided by the following research objectives: equitable access to lecture halls, access and usage of ICT and library facilities, staff to student ratios and the support services and their impact on quality university education. The target population of the study was the University of Nairobi which had about 61,000 regular students enrolled to 43schools/faculties, 5,900 students in their fourth year of study and about 2,000 teaching staff. Probability sampling method which is a sampling method that relies on a random, or chance, selection method was used

where simple random sampling technique for teaching staff and stratified random sampling of the students was done. The sample size was 251 fourth year students and 238 teaching staff, totaling to 489 respondents. The study used questionnaires, document study guide, observation checklist and interview protocol as the instruments for the study.

Permission to conduct the research was sought from the National Commission of Science, Research and Innovation. The researcher thereafter visited the respective campuses of the university in Nairobi and produced the introductory letter before seeking out the respondents. The researcher sought the consent of the respondents before administering the research instruments to them. The researcher also assured the respondents of utmost confidentiality as regards their identities. Quantitative and qualitative data analysis methods were used with the aid of statistical package for social sciences (SPSS) version 26.

The summary of findings was as guided by the objectives of the study:

Most of the respondents were of the opinion that accessing lecture halls was a challenge owing to the fact that the students who needed to use them were many at any particular time. Respondents did not think that the university had adequate lecture halls that could support the double intake programmes in the institution. It was alluded that some learners had to make their own arrangements of when and where to take their classes from. The scramble for the lecture halls had implications such as deterioration of the available facilities hence affecting the

comfort and satisfaction intended to support the teaching and learning process for better academic outcome.

The university had huge libraries that had anticipated growth of student numbers over the years. However, it was noted that the double intake programmes posed a growth of student numbers that was beyond the anticipation of the planners of the university's infrastructure. Majority of the learners thought that the influx of student numbers made students missing space in the library whenever they needed to do their personal studies or assignments. Most of the respondents did not indicate satisfaction in the ICT infrastructure in the university. The internet access around the campuses was limited to some areas. The students were forced to move to those places where they could be connected to the internet. Most respondents felt that the movements curtailed comfort in learning experiences. Insufficient ICT facilities posed a challenge to students when doing their assignments as they had to wait for their turn on the available facilities or had to go an extra mile and pay for services rendered off campus. Majority of the respondents were of the opinion that the lecturers were able to embrace the use of technology while teaching. ICT use in learning helped in understanding of the course content. This also helped learners in large classes to get what their lecturers were passing across.

Most of the respondents did not think that the university sufficient non-academic staff numbers to cater for the large student numbers. Services had slowed down

because the student numbers surpassed those who were to serve them. Cleanliness and hygiene were affected as well. Majority of the respondent were in agreement that the lecturers handled extremely huge classes that it was supposed to be. Assessment of the students was questionable regarding the number of students per a single lecturer. Students could not be able to get individual attention due to the numbers and time constraints. Most respondents thought that some students missed out on concepts thought because they were very many and could not be attentive. Other lost morale to attend classes and opted to stay away. Clearly, the student lecturer ratios had a watering down impact in the education outcomes.

Support services provided through the social facilities such as the cafeterias, student centres, health centres and hostels also played a major role in the quality of life of students as they strived through their academic journey. Most of the respondents thought that their policies or regulations in place to ensure that every students lives comfortably in the social areas with others. However, a majority of the respondents were in agreement that the facilities offering support services experienced immense pressure due to the large student numbers. Some of the facilities deteriorated at a faster rate hence reducing comfort and satisfaction leading to a low quality of life. Majority of the respondents were of the opinion that the university had in place mechanisms to ensure that students had an equal chance to get accommodation in the university's halls of residence. The only challenge noted was that the hostel accommodation was limited and therefore not

all students could be accommodated with the university campuses. The influx in student numbers had led to a problem of water shortage as indicated by most of the respondents. Lack of water led to consequences of poor sanitation and hygiene. This environment had an implication on the education outcomes where students were affected whenever they got ill. The university prohibited students from cooking in their halls of residence but did not ensure expansion of the cafeterias around the campuses. Most respondents felt that students lost a lot of time as they way in line to get served their meals. Some missed the meals in the cafeterias because of the increase in demand for meals at the cafeterias.

5.3 Conclusions of the Study

The study drew the following conclusions:

Inequitable access to lecture halls demoralized students from attending their classes due to the inconveniences caused. There was a great deal of loss of the learners' time due to the fact that they had to move around look for rooms and eventually end up postponing their classes. In large, learners could not get comfortable areas to takes their lecture notes. Writing on their laps was a struggle that impacted negatively on the learners' attitude.

In this present world, learning activities need to be boosted by the use of ICT. Lack or insufficient use of ICT in the lectures affected the education outcomes. Learners are required to do research on the internet as they do their assignments. Poor ICT infrastructure could encourage learners to copy assignments of their

classmates and this could not be a clear picture of the education outcomes. Lecturer's use of ICT is intended to boost the learners' interest in learning. Absence of ICT use leads to boring classes and their low education outcomes.

The university accepted to engage in double intake programmes without considering an increase in the number of the staff members. The number of students admitted overwhelmed both the academic and non-academic staff members who served them. This led to degenerated service provision consequently low education outcomes.

Support services as crucial as they are the university did not consider expanding the facilities. The available facilities were under immense pressure. The facilities depreciated quickly affecting the quality of life of the learners during their stay in campus. Some services got slowed down because the demand of those to be served was more that those serving. Cloak rooms that were not working properly led to poor hygiene that affected learners because they had to stay away from attending classes due to sickness.

Double intake programmes was a move that was not well thought of as to have negative impact on the quality of university education. However, the move was deemed as temporary and could not warrant expansion of the infrastructure at the university because of a short-time goal. The double intake programmes consequently compromised the quality of university education.

5.4 Recommendations of the Study

The research study made the following recommendations based on the findings:

Students who went through the double intake programmes suffered a risk of failure to undertake their academic programmes in an ideal environment because of the shortage of infrastructural provisions at the university. The university should ensure provision of requisite infrastructure as a pre-condition for allowing new academic programmes. Government policies should ensure that the needs of the universities infrastructural demands are documented annually and therefore lay plans based on the envisaged growth.

The university should lay out plans to catch up with the recent technological advancements to ensure rich research and innovations. ICT facilities can be expanded through acquiring more computers and laptops as well doing repairs to those break down for use by the students. The university should set up more internet hotspots around the campuses to make the internet more easily accessible to the learners. Installation of power outlets can ensure that learners are able to work from their comfort zones.

Whenever there is an increase in the student numbers the university must ensure a relative increase in the number of both the academic and non-academic staff where necessary. Compromise in the ratios of the students to staff will always have a negative impact on the quality of education. The university should always plan on the number of staff required versus the anticipated students to be enrolled.

Expansion of some of the support services is inevitable even when the situation is temporary. The university has to repairs of the facilities that have broken down due to pressure to ensure continued service to the learners. The university also has the mandate of advising the government against policies that may lead to the suffering of the education sector because these institutions experience the effect directly on the ground.

5.5 Suggestions for Further Research

The study suggests that similar studies to be done on the other public universities nationally to confirm whether the situation identifies with them. Equally, the study can be done on the public secondary schools to determine the effect of the 100 percent transition rate from primary to secondary school on the quality of secondary school education.

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APPENDICES

Appendix I: Letter of Introduction

University of Nairobi
Department of Educational Administration and Planning,
P. O. Box 30197,
Nairobi,
December, 2018.

To whom it my Concern
Dear Sir/Madam,

Re: DATA COLLECTION

I am a student undertaking a degree in Master of Education in Corporate Governance in the University of Nairobi. I am carrying out research on **"The Impact of Double Intake Programmes on the Quality of Education at the University of Nairobi".** This is part of partial fulfilment of the requirement for the award of Degree of Master of Education in corporate governance.

Your school/faculty has been sampled as the target population in the above stated research. I write to seek permission to collect data from your institution. Information obtained will be purely for academic purposes. Your support will be highly appreciated.

Thanking you in advance.

Yours Faithfully,

Boni Obutu.

Appendix II: Questionnaire for the teaching/ academic staff

Section A: Background Information

1. How long have you worked in this university?

_____

2. How many times in an academic year does the university enrol new students?
Once ( ), Twice ( ), Thrice ( )

3. How many times in year do students graduate from the university?
Once ( ), Twice ( ), Thrice ( )

4. Are there cases where students take longer to complete their studies than usual?
Yes ( ) No ( )

If yes, please state why._____

5. How does the delayed transition of the students affect the student population and the infrastructure?

_____

Section B: Double intake and equitable access to lecture halls

The university had adequate lecture halls to support the double intake programmes.

Yes ( ) No ( )

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) You were affected directly or indirectly by the double intake programmes in accessing lecture halls.	5	4	3	2	1

You are at times unable to access lecture halls when you are required to use them.

Yes ( ) No ( )

How does the university deal with the large number of students who want to access the facilities at a given period of time?

_____

Section C: Access and Usage of ICT and Library facilities

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) The university library was big enough to accommodate a large number of students at any time.	5	4	3	2	1
b) Lecturers use ICT facilities or improvise in cases where they are not available to make the lectures captivating.	5	4	3	2	1

To what extent are you satisfied by the standards of the ICT infrastructure in the university?

A small extent [ ] Some extent [ ] A great extent [ ]

What does the university do to cope with the call to develop and acquire the modern ICT infrastructure?

_____

_____

_____

Section D: Staff verses student numbers and teaching/learning activities

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) The university had enough non-academic staff to serve the number of students enrolled in the university.	5	4	3	2	1
b) The university teaching staff members handled a huge number of students than it should be the case.	5	4	3	2	1
c) Students are able to get individual attention from their lectures.	5	4	3	2	1

Large number of students in lecture halls made some students to miss some concepts from lecturers.

To a small extent [ ] To some extent [ ] To a great extent [ ]

Section E: University student support services

1. Are there regulations or policies that prohibit students from engaging in some activities when in the social areas such as cafeterias, student centres and hostels?

Yes ( ) No ( )

Give example(s) _____

2. Are the social facilities (cafeterias, student centres, health centres and hostels) under pressure due to the mass enrolment of students?

Yes ( ) No ( )

3. As pertains to support resources and quality of life in public universities what will be your take on the following:

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) There are transparent mechanisms in place to enable all students an equal chance to get accommodation in hostels	5	4	3	2	1
b) Water supply in campus is sufficient for use by everyone at any time	5	4	3	2	1
c) The university cafeterias are sufficient enough to serve the student population.	5	4	3	2	1

Thank You for Your Participation

Appendix III: Questionnaire for the students

Section A: Background Information

1. How long have you studied in this university?

_____

2. How many times in an academic year does the university enrol new students?
Once ( ), Twice ( ), Thrice ( )

3. Are there cases where students take longer to complete their studies than usual?
Yes ( ) No ( )

If yes, please state why._____

4. How does the delayed transition of the students affect the student population and the infrastructure?

_____

Section B: Double intake and equitable access to lecture halls

The university had adequate lecture halls to support the double intake programmes.

Yes ( ) No ( )

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) You were affected directly or indirectly by the double intake programmes in accessing lecture halls.	5	4	3	2	1

You are at times unable to access lecture halls when you are required to use them.

Yes ( ) No ( )

How does the university deal with the large number of students who want to access the facilities at a given period of time?

_____

_____

Section C: Access and Usage of ICT and Library facilities

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) The university library was big enough to accommodate a large number of students at any time.	5	4	3	2	1
b) Lecturers use ICT facilities or improvise in cases where they are not available to make the lectures captivating.	5	4	3	2	1

To what extent are you satisfied by the standards of the ICT infrastructure in the university?

A small extent [ ] Some extent [ ] A great extent [ ]

What does the university do to cope with the call to develop and acquire the modern ICT infrastructure?

_____

_____

_____

Section D: Staff verses student numbers and teaching/learning activities

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) The university had enough non-academic staff to serve the number of students enrolled in the university.	5	4	3	2	1
b) The university teaching staff members handled a huge number of students than it should be the case.	5	4	3	2	1
c) Students are able to get individual attention from their lectures.	5	4	3	2	1

Large number of students in lecture halls made some students to miss some concepts from lecturers.

To a small extent [ ] To some extent [ ] To a great extent [ ]

Section E: University student support services

1. Are there regulations or policies that prohibit students from engaging in some activities when in the social areas such as cafeterias, student centres and hostels?

Yes ( ) No ( )

Give example(s) _____

2. Are the social facilities (cafeterias, student centres, health centres and hostels) under pressure due to the mass enrolment of students?

Yes ( ) No ( )

3. As pertains to support resources and quality of life in public universities what will be your take on the following:

SA= Strongly Agree, **A**= Agree, **U**= Undecided, **DA**= Disagree, **SDA**= Strongly Disagree.

Circle appropriately

Pointers	SA	A	U	DA	SDA
a) There are transparent mechanisms in place to enable all students an equal chance to get accommodation in hostels	5	4	3	2	1
b) Water supply in campus is sufficient for use by everyone at any time	5	4	3	2	1
c) The university cafeterias are sufficient enough to serve the student population.	5	4	3	2	1

Thank You for Your Participation

Appendix IV: Document Study Checklist

In this study the researcher will need to go through a number of documents to ascertain the trends of various activities that promote quality education in the university. These documents will include but not limited to:

i) Infrastructural development records

ii) Students' enrollment data over the recent past.

iii) The staff employment and turnover data over the recent past.

iv) Data on the number of graduates in the past 5 years.

Appendix V: Observation checklist

In this study the researcher will also take time to study events as they are on the ground to assess the situation on a one on one basis. In this method the researcher will need to be present at the following places to make the observations:

	Insufficient	Sufficient	Very sufficient
Lecture halls/theatres			
Lecture rooms			
Halls of residence			
Cafeterias and the health centre.			

Appendix VI: Interview Protocol Form

Faculty: _____

Interviewee (Title and Name): _____

Interviewer: _____

Double intake and quality education interview

Introduction

I have selected to speak to you today because I have identified you as someone who has a great deal to share about teaching, learning, and assessment on this campus. My research project as a whole focuses on the impact of double intake programmes on the quality of education in the University of Nairobi. I would wish to understand if there are any challenges and how they are being overcome by all the stake holders.

A. **Background Information**

i. How long have you been at this institution?

ii. How long have you been in your present position?

iii. What is your field of study?

iv. Briefly describe your role as it relates to student learning. How are you involved in teaching and learning here?

B. **Institutional Perspective**

1. What is changing about teaching due to the double intake programmes?

2. Have you or your colleagues met challenges due to the double intake programmes?

3. What is the strategy at this institution for handling the double intake programmes? Is it working – why or why not?

4. What proposals have you fronted to the administration regarding the challenges?

Appendix VII: Letter of Authorization

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/33601/27454**

Date: **18th December, 2018**

Boni Obutu Ongosi
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"The impact of double intake programmes on the quality of education at the University of Nairobi, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **18th December, 2019.**

You are advised to report to **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 County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix VIII: Research Permit

THIS IS TO CERTIFY THAT:
MR. BONI OBUTU ONGOSI
of UNIVERSITY OF NAIROBI , 0-40200
Kisii,has been permitted to conduct
research in *Nairobi County*

on the topic: *THE IMPACT OF DOUBLE INTAKE PROGRAMMES ON THE QUALITY OF EDUCATION AT THE UNIVERSITY OF NAIROBI, KENYA*

for the period ending:
18th December,2019

Permit No : NACOSTI/P/18/33601/27454
Date Of Issue : 18th December,2018
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

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NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 22489

CONDITIONS: see back page