EQUITY DIMENSIONS IN PUBLIC UNIVERSITY EDUCATION IN KENYA: AN ANALYSIS OF PARALLEL AND REGULAR UNDERGRADUATE DEGREE PLATFORMS

By

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university for any other award

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DEDICATION

To God the Almighty for life, health and wisdom and His abundant blessings that has guided me throughout the research period.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Page

LIST OF ABBREVIATIONS AND ACRONYMS

CBS	:	Central Bureau of Statistics
CHE	:	Commission for Higher Education
CUEA	:	Catholic University of East Africa
DVC	:	Deputy Vice Chancellor
EFA	:	Education for All
EPRC	:	Education Policy Review Commission
EOPHE	:	Equal Opportunity Practitioners in Higher Education
GoK	:	Government of Kenya
HE	:	Higher Education
IGAs	:	Income Generating Activities
IMF	:	International Monetary Fund
IPAR	:	Institute of Policy Analysis and Research
JAB	:	Joint Admissions Board
JKUAT	:	Jomo Kenyatta University of Agriculture and Technology
KCSE	:	Kenya Certificate of Secondary Education
KIPPRA	:	Kenya Institute of Public Policy Research and Analysis
KU	:	Kenyatta University
LIA	:	Letter of Interim Authority
MDG	:	Millennium Development Goals
MI	:	Module I (Also Regular)
MII	:	Module II (Also Parallel)
MoE	:	Ministry of Education
MoEST	:	Ministry of Education, Science and Technology
MU	:	Moi University
PES	:	Private Entry Scheme
SAPs	:	Structural Adjustment Programmes
SSP	:	Self Sponsored Programmes (Also Module II)
UEAB	:	University of East Africa Baraton
UIP	:	University Investment Project
UoN	:	University of Nairobi
UNESCO	:	United Nations Educational, Scientific & Cultural Organisation
UK	:	United Kingdom
USIU	:	United States International University
WTO	:	World Trade Organisation

ABSTRACT

The rapid expansion of university education in Kenya has necessitated inevitable reconfigurations and innovations in access and finance issues. Part of this is evident in the high demand for university education that has seen the mounting of alternative platforms variously called parallel, self-sponsored or module II. As of necessity, such developments come with inevitable consequences, including altering the pattern of access by socio-economic groups as well as gender, in as much as they engender institutional differentiation manifested in the appropriation of private funds, occasioned by differential enrolment of paying students. The dualistic admission policy has the potential of engendering inequalities among social groups, gender and between institutions, principally because, by 'liberalising' education, it opens up university admission to those students able to pay the fees. This poses a threat to equitable distribution of education opportunities in public universities. It is for this reason that the current study investigated the equity issues in Kenya's public university system since the mounting of the parallel platform, to identify equity dimensions evident in the provision of public university education in the parallel and regular undergraduate degree platforms on the basis of socio-economic status, gender equity, degree programmes equity and institutional equity. The study was carried out in three public universities namely: University of Nairobi, Kenyatta University and Moi University. The target population was 61,115 and the sample size was 748. The sample size was derived from Krejcie and Morgan's (1970) Tables for determining appropriate sample size given a specified population. Purposive sampling was used to select 40 university administrative staff and another 8 respondents from eight organisations referred to in this study as (education experts/policy makers). Two types of research instruments were used: interview guide and questionnaires. Questionnaires were administered to public university students and academic staff while interview guide was administered to the education policy makers (education experts) as university administrators, CHE, MoEST, JAB staff, World Bank, KIPPRA, Rockefeller, IPAR and Ford Foundation. Data analysis for this study was done both quantitatively and qualitatively. Chi Square statistical analysis was used in this study to compare frequencies occurring in different groups such as students, public university administrative and academic staff, including policy makers and education experts in university education on the four variables for the study. In line with the study objectives, six hypotheses were designed for this study and the results generated made the study findings, viz; Five objectives were investigated and the results indicated that there were differences in enrolment across gender by platform, that distributions of regular students by gender in the three public universities in the two (MI & MII) study platforms differed significantly, that students from the more affluent families (middle and high SES) dominated positions on the MII platforms, that irrespective of gender, the students' presence in any platform is determined by their parents/guardian/family SES, however gender on its own cannot determine a student's presence in either MI or MII. Furthermore, being female from lower SES diminished a student's chances of participating in pure science based programmes in public university education. While the socio-economic status of a female student's family would influence preference of the degree programme pursued, the same conclusion is not true for male students. The study concludes that there is a persistent gap in university education participation, between students from richer and poorer family backgrounds and recommends instituting gender equity structures by JAB and the government of Kenya.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

This section of the thesis outlines the evolution of university education worldwide and in Kenya since independence. Discussion of the section is angled on identifying equity dimensions in university education that previous studies have revealed. The discussion is segmented into three subsections namely: university education worldwide, origin of university education in Kenya – high subsidies for human resource development, imperatives of development and diversification - the emergence of privately-sponsored (Parallel/Module or II/MII) degree platform and challenges facing privately sponsored undergraduate degree programmes in public universities in Kenya. Additionally, the purpose of the study is also stated including the hypotheses that were tested by the study. It also specifies how the study is significant in Kenya's university education and development. Further in this section, the underlying assumptions limitations and delimitations of the study as well as definitions of terms to be used are outlined.

1.1.1 Higher Education Worldwide

Public systems of higher education worldwide are caught between increasing public and private demand for their services, rising per-student cost and declining government revenues. The public demand emerges from the increasing recognition of higher education, particularly university education, as a major engine of national economic growth and provider of individual opportunity and prosperity. The private demand or enrolment pressure especially in Africa and other developing countries begins in many countries with the sheer demographic increase in the tertiary education age cohort, compounded by the increasing secondary school completion rates, which in turn increases the number of secondary school graduates wanting to go on to university education. This is further compounded by an expansion of what may be considered a college-going age cohort to include adults formally by-passed by the system.

This is the social, political and economic background of one of the most intractable challenges faced by higher education system: the challenge of reconciling

the largely irreconcilable goals of expanding on one hand, both the capacity and quality and on the other hand, the goal of increasing participation and the equity of that participation (which also implies additional revenue). In response, most countries have turned to forms of private revenue supplementation for the support of their expanding higher education needs, the most important of which is *cost-sharing,* or the shift in higher educational costs from being borne mainly by government, to being shared by governments, parents and students (Bruce 1986, 2003, 2004a). This revenue is tuition fees. An internationally tuition policy labelled *dual track* appears to achieve some real revenue supplementation world over, but with problematic impacts on equality (Marcucci and Bruce, 2005). Dual track tuition fee policies are characterised by a highly restricted, 'merit-based' entry to free or very low cost higher education, with other applicants not so admitted, permitted entry on fee-paying basis. This study was about the equity dimensions that exist in dual track tuition fee system in public university education in Kenya, popularly known as parallel and regular admissions (parallel being students admitted on fee paying tuition and regular for students admitted on low fee paying tuition, sponsored by the government).

The origin of such a plan seems to lie in former Communist countries, in which free higher education was not only an expectation, frequently enshrined in a constitution or higher education framework law, but where the country did not have sufficient tax revenue to accommodate all of the qualified applicants (Bain, 2001). Governments and university leaders introduced dual track tuition policies in East Africa in order to expand higher education capacity (and hopefully quality), however equality was hardly a priority in this arrangement. A dual track system was introduced in Uganda at Makerere via the Private Entry Scheme (PES) in 1992 and later extended to all public universities (Carrol, 2004). In Kenya, the Makerere model was introduced in 1998 via, the self-sponsored, or Module II/Parallel degree programmes. In Tanzania, it was introduced in 2002.

1.1.2 Evolution of University Education in Kenya

Evolution of university education in Kenya is closely related to the post-secondary education in British East Africa Protectorate that dates back to 1922, when Makerere University College was set up. During the late 1940s and early 1950s Makerere

College was the only institution providing university education for the whole of British East Africa (E.A) Protectorate (Republic of Kenya, 2000).

The history of university education in Kenya dates back to 1949. In that year, a committee chaired by G.L. Willoughby (Ministry of Education, 1994), recommended the establishment of a technical and commercial institute in Nairobi to provide full-time and part-time instruction for courses leading to the Higher National Certificate offered in Britain. The institute was also to prepare matriculated students through fulltime study for university degrees in engineering and allied subjects not provided in Makerere. One of the most pressing needs that Kenya faced was that of training skilled manpower ready to take over the running of the economy from the departing Britons. This is a factor that, doubtless, motivated the growth of university education in Kenya. Hence the technical institute later obtained a royal charter in 1956, merged with Gandhi Memorial Academy (an institution of higher learning started by the Asian community) to become the Royal Technical college. It offered a three-year course leading to special certificates in arts, commerce, science, engineering, domestic science, architecture and survey. Henceforth, higher education received growing interest and attention and as result, two working parties were instituted in 1955 and 1958. They both recommended that each East African territory should establish a university college.

The Royal Technical College was transformed to Royal College Nairobi and began degree courses in 1961. In 1963, at independence, it became University College Nairobi and together with University College Dar-es-Salaam and Makerere University, they formed the Federal University of East Africa. Hence the first public university in Kenya, University of Nairobi was established by an Act of Parliament in 1970. Since then, UoN has grown and made significant contribution to the development of Kenya in terms of training qualified manpower to the labour market. This was also based on the premise that educational needs for each of the East African countries changed with time and management of the institutions also became difficult because of the varied cultures and economies. Each country later opted to cater for its own university educational needs.

Demand for higher education in Kenya continued increasing rapidly during the 80's and has steadily followed the trend into the 21st century. The biggest challenge currently facing university education is how to meet these demands with limited

resources and maintain quality, as well as enhance equity. The growth and development of university education has been both in terms of student enrolment as well as increased number of courses offered by the existing universities (Republic of Kenya, 1983). The 1980s saw the rapid growth of public universities in Kenya (Abagi, 1995). During the same period, it had become clear to the government that even with the expansion of University of Nairobi, it could still not meet the demand for university education.

The colonial administration and the Christian missionaries played a very crucial role in not only introducing scholastic education but also in determining distribution and in slowing and restricting education dissemination and universalisation (Republic of Kenya, 1983). Hence schooling was segregated in that Africans had their own schools as well as Europeans, Asians (particularly the Indians). This practice over the times has created educational imbalances whose effects is being experienced at all levels of education in Kenya particularly at university level. The government of Kenya responded to the high demands of university education by increasing the number of public universities and also enrolment. The number of public universities increased from one in 1970 to six by 2001 and enrolment jumped from 2786 to 41,825 (Economic Survey, 2002). The largest first year intake for public universities was the admission of 20,837 students in the 1990/91 academic year. This represented an increase of 184% over the previous year. Further significant increase in enrolment of 18% was noted from 52,906 during 2001/2002 academic year to 62, 875 students in 2002/2003 academic year (Economic Survey, 2003). Notably, there was a significant steep rise in the number of students, from about 5,000 in 1980 to 17,538 in the 1987/88 academic year which was the year of the double intake at both the UoN and Kenyatta University (KU). The high increase in enrolment is evidence of the pervasive demand for university education that could not properly be met by public university capacity.

Public universities were unable to accommodate 66% (22,000) of secondary school graduates who qualified for university admission in the 1999/2000 academic year (Brown, 2001). This is a scenario that has recurred in the Joint Admissions Board (JAB) selection for 2004/2005 academic year admissions. In 2003, 49,000 students qualified for university admission and 42,721 applied. Out of those who qualified and applied, only 10,872 students joined public universities, (The Daily

Nation, August 14th, 2004, Pp.2). Out of the rest, 38, 128 of the qualified candidates, 6,279 did not apply for admissions and were left with limited option either to seek the self-sponsored degree platform or join the middle-level colleges.

To address the continued desire for higher education by its populace the Kenya government encouraged the establishment of private universities.

Among the 30 private colleges and universities in sub-Saharan countries in 1991, 11 were in Kenya followed by Zaire with 7 (Brown, 2001). Private universities accounted for 14% of total students (48,745) enrolled in universities. The private universities admit 18,000 students every year out of those who qualify but miss admissions to public universities (Brown, ibid). Increase in enrolments in private universities heightened competition between private and public universities, coupled with the financial strains experienced by public universities during the period.

Public universities in Kenya have continued to receive less financial allocations from the government than their estimated expenditure in real terms, a trend that is expected to persist and which results in large number of students who miss university admission. For example, in the 1994/95 fiscal year, the government's recurrent expenditure on university education was K$ 186,608,067 (18% of the Ministry of Education recurrent Budget: GOK), (Abagi, 1995). The implications of such a scenario were the increasing debt burden that threatened to compromise the very essence of the objects and functions of the universities. The Government indeed made it quite clear that it would no longer be able to fully finance public universities (Republic of Kenya, 2000). This pointed to the fact that the Kenyan government had become financially strained necessitating the need for public universities to institute alternative sources of generating income to make up for the short fall and to continue providing skilled manpower to meet market needs.

As a consequence, during the 1994/95 financial year, the Government reduced the education budget from 37% of its total annual recurrent budget to about 30% with the argument that higher allocations were not sustainable (Republic of Kenya, 1999). Due to the circumstances, public universities were called upon to explore ways and means of financing university education partly with funds generated from sources apart from the Exchequer. The need for public universities to diversify their activities to include income generation projects was a major part of the speech of the former

Chancellor and President of Kenya Daniel Moi during the University of Nairobi 1994 graduation ceremony, (Republic of Kenya, 2000).

Through University Investment Project (UIP), under which public universities accessed credit, conditionality was instituted limiting university admission to not more than 10,000 students per year, shared among the public universities.

In this way, the development assistance under the UIP programme further constrained university education that was already limited by the Kenya government based on bed capacity and lecture space among other factors. Due to the aforementioned fact, even private universities could not cope with the demand. This meant mounting of alternative platform by public universities to make up for the short fall. The 'quiet revolution', as Court, (1999) described it, was the self-sponsored/parallel/Module II pioneered by Makerere University. This was another alternative of handling the high demand for university education, which provided impetus for replication of similar platform in the Kenyan public universities. While student admission to private universities had the desired effect of reducing the demand, equity in student regional representation vis-à-vis inadequate human resources among other issues is still a challenge to university education in Kenya (Achola, 1997). Faced with this crisis, the University of Nairobi moved quickly to explore ways to generate, if not, diversify its financial or revenue base by using all the resources at its disposal (Kiamba, 2003). This move marked the introduction of academic platform for privately- sponsored students popularly known as parallel or Module II undergraduate degree platform, with University of Nairobi being the pioneer in 1998, among Kenya public universities.

1.1.3 Imperatives of Development Diversification: The Emergence of Privately Sponsored (Parallel/Module II) Degree Platform

Private and regular degree platforms phenomenon evolved in the East African region in the late 1990s and was specifically implemented in 1998, with financial short fall on the part of the government to meet demand for university education being one of the reasons. The other reason was improvement of quality of graduates to meet job requirements as well as building a strong manpower base with relevant skills and knowledge for their societies. Merisotis (2003), maintains that improving access to higher education for low-income minority, and other underrepresented populations is

key since it is an indication of commitment to equality of opportunity and as a major factor in the establishment of equity in higher education.

While Makerere University introduced private sponsorship also called (self-sponsorship) scheme in 1995, Kenya public universities began implementing the parallel platform (Module II) in 1998, pioneered by University of Nairobi (U.o.N). In Makerere University, privately sponsored students have to meet all the university financial requirements on their own. In other words, unlike those on cost-sharing scheme, the privately sponsored students have no kind of financial or material assistance offered to them by the government. As a result, entry into Makerere University for any course revolved around two issues, that is "qualifications" and "ability to pay". Due to democratisation of higher education, economic liberalisation policies and the ever-increasing demand for higher education particularly in Makerere University, it is evident that a large number of students apply to join university on private sponsorship (Mayanja, 2001). In the East African region, Tanzania and Kenya closely followed Makerere and utilized Makerere's framework by setting up similar degree platform in their public universities.

In Kenya, the beginning of an academic year under the Parallel or Module II platform was occasioned by a number of interrelated factors ranging from the high demand that existed for the platform and competition to a resistance of the parallel platform by the students who were already on the regular platform. During the 2002/2003 academic year, there were Module II (parallel) students in almost all faculties of the University of Nairobi with total of about 14,488 registered compared with about 13,000 students in the regular (Module I/MI) platform (Kiamba, 2003). This was already an indication of an equity dimension in enrolment between parallel and regular undergraduate platforms. The privately sponsored progrmmes are currently being conducted in all public universities, indicating its expansion and high demand. Public universities are strong to supply university education via the parallel platform. On the other hand, private universities are also responding by being aggressive in increasing enrolment to attract those left out on the regular platform admissions. In essence, there is a competition between private and public universities for self-sponsored students, since the public universities have introduced a Module II degree platform within their structures that is run concurrently with the Module I.

Student's resistance to the introduction of the parallel platform forced University of Nairobi earlier on, in 1998 forced it to be closed for a month following regular student's demonstrations (Kiamba, 2003). The stakeholders on the other hand complained of the platform not having been well structured in terms of management. However, the high income from the parallel platform accrued by University of Nairobi has proved to justify its implementation at the university. For example, the income increased right from the inception of the platform as outlined: 1997/1998, Ksh. 12,964,110; 1998/1999, 233,153,499; 1999/2000, 377,144,631; 2000/2001, 602,836,675; 2001/2002, 944,096,451 and 2002/2003, 1,209,512,592 (Kiamba, 2003). This was for the fact the contribution of Module II income to the total university income was seen dramatically rising from about 3.8% in 1997/98, 14% in 1988/99, 19.6% in 1999/2000, 23% in 2000/01, 29% in 2001/02, and to 33% in 2002/03 (Kiamba, 2003). As a proportion of the total Government allocation to the University, Module II was about six percent in 1997/98 and had risen within six years to about 68% in 2002/03. (Kiamba, 2003). Hence the implementation of parallel platform is seen as a significant move for public universities' financial stability.

One of the areas that necessitated this study was to assess distribution of educational opportunities between parallel and regular undergraduate degree platforms. This was an important aspect of this study despite the fact that Module II is built on the premise of willing seller and willing buyer. Its importance is derived from persistent disparities in university education, and the Module II scenario where the rich are competing with the poor for admission to university depending on their ability to pay fees. No research so far on equity dimensions of the parallel and regular degree platforms has been conducted. Despite the fact that enrolment in parallel platform is steadily increasing compared to the regular one, no information is available to indicate the interfaces of the parallel and regular degree platforms, for any equity dimensions. Hence the need for this study that investigated further challenges on equity dimensions of the two platforms.

1.1.4 Challenges Facing Provision of University Education in a Liberalised Regime

One of the standing policy challenges of Africa is how to provide good quality higher education to large numbers, equitably but without undue dependence on public

resources (Court, 1999). Being the pioneer in the implementation of privately sponsored platforms in public universities, Makerere University faced some challenges. One of the major challenges is how to attract private resources while protecting both quality and equity of access. These prepositions, true to all developing countries, have a particular resonance in Africa where primary and basic education remains inadequate (Court, 1999).

Historically, access to government places at Makerere was highly competitive to the disadvantage of students from low-income backgrounds. With entry to state funded positions based almost entirely on "A" level results, successful candidates tended to come from the high quality, more expensive secondary schools - schools beyond the economic reach of many (Mayanja, 1998). Opening Makerere to private students seems likely to have further eroded economic equity. The implication of the foregoing statement is that in a liberalised economy, there can never be economic equity since access to available resources depends more on monetary ability as compared to non-monetary ones. Students, who qualified and did not get admission through the Ugandan government plan, had an opportunity to undertake their degree programmes in the private scheme, so long as they were able to pay full fees. Critics in Uganda note that many who have qualified academically have been unable to afford the fees and in consequence claim that economic privilege of the Makerere University student body had increased (Mayanja, 2001).

Achola, (1992), further, emphasised that subsidized university education in Kenya before the introduction of parallel/module II, was more accessed by the rich. Who then was in module II platform during the study?, what were the existing equity dimensions?. The reason being that public universities in Kenya admit both Module II students who qualify and have the ability to pay full fees, and qualified module I, able to access the limited government sponsorship. A need arose in this study to find out who is in the parallel and regular undergraduate platforms, based on equity dimensions specifically on four variables; gender, socio-economic status (SES), degree programme and institutional equity. The high enrolment rates have subsequently changed the demand, as well as times and circumstances of public university education. For those people who qualify, financially able and aiming to escape the painful pangs of ignorance, public universities have liberalized their education and are willing to admit such students.

Considering that education is on the market for those who qualify and can afford to pay the full fees, chances are that the parallel platforms may favour the rich and the working class. This is a potential for inequitable access by socio-economic groups. However, much as this is a potentiality, the exact extent is unknown.

1.2 Statement of the Problem

The preceding background demonstrated that the provision of university education poses several challenges regarding its distribution to both regular and parallel platforms. Part of this evidence (Deolalikar, 1999) showed that typically, up to 45% of Kenya's public university students, before the introduction of parallel platform, came from the richest expenditure quintile (high and upper middle class brackets). Given the high fees charged for the parallel degree programmes, there was a likelihood that the situation would worsen.

A total of 14,488 students of the 2002/2003 academic year were registered in the parallel degree platform, compared to 13,000 students in the regular one at the University of Nairobi. It was also clear that within a period of six years, the parallel platform enrolment had not only equalled in the same university, but also surpassed the regular platform (Kiamba, 2003). This was another potential to inequitable access to university education in Kenya. Nevertheless, no similar study had been, this far, undertaken based on equity dimensions in the parallel and regular platforms.

To determine the inequities in university education, this study investigated four equity dimensions namely: gender, degree programme, SES and institutional equity to find out whether they were a threat to equitable provision of public university education and their implications for public university education & development in Kenya. The major question of investigation for this study was: what equity dimensions among students were evident in the provision of public university education for parallel and regular undergraduate degree platforms on the basis of gender, degree programmes, SES and institutional equity.

1.3 Purpose of the Study

The purpose of this study was to explore equity dimensions in parallel and regular undergraduate degree platforms based on four variables; SES, gender, degree programmes and institutional equity; and to draw implications for public university education policy.

1.4 Research Objectives

1) To determine differences in student enrolment in regular and parallel undergraduate study platforms by gender and socio-economic background.
2) To identify differences in proportion of regular and parallel undergraduate students across public universities.
3) To determine relationship among gender, socio-economic background, study platform and preference for degree programme.
4) To explore the perceptions of regular and parallel students, lecturers and education experts on equity issues in the undergraduate degree programmes in public universities in Kenya.
5) To draw implications for higher education policy in Kenya based on the study findings.

1.5 Study Hypotheses

The study investigated the following six hypotheses:

1) There is no significant difference in the number of male and female undergraduate students enrolled in parallel and regular study platforms
2) There is no significant difference in public universities in the proportion of undergraduate students enrolled in the regular and parallel study platforms by degree programmes
3) There is no significant difference in socio-economic backgrounds of students in parallel and regular study platforms.
4) There is no significant difference in student gender, socio-economic background and the study platform chosen
5) There is no significant difference in student distribution in degree programmes by gender and socio-economic background

6) There is no significant difference in student gender, socio-economic background and preference of the degree programme chosen.

1.6 Significance of the Study

Given the importance of university education particularly in shaping individual career patterns, this study was seen to be significant in the following ways:

i) The findings of the study were significant in further revealing current and specific inequalities in the parallel and regular undergraduate study platforms to help in establishing relevant mechanisms to promote equity of access to university education.
ii) Policy makers, planners and education experts could use the study findings for regulatory and administrative framework for parallel and regular study platforms especially for institutional application in equity plans.
iii) The study findings showed the potential education and social policy implications based on the possible failure to provide equity of access to parallel and regular study platforms.

1.7 Delimitations of the Study

The study had one delimitation. It confined itself to specific respondents as the key participants of parallel and regular degree platforms in public universities in Kenya. The particular respondents involved in the study included:

1) Public university students in both parallel and regular degree programmes who had been undertaking their degree programmes for the past one-four years
2) Public university academic staff, who had taught students in both platforms, since they were directly involved in the facilitation and/or conducting the parallel and regular undergraduate degree programmes.
3) University policy makers and administrators for the useful data regarding equity dimensions on privatisation of public university education and challenges in enacting realistic policies for both parallel and regular platforms.
4) Ministry of Education Science and Technology staff. This group of respondents was recognised for the respective roles they play in higher education and involvement in education policy making.

1.8 Limitations of the Study

The following were the major limitations of the study:

1) There was inadequate relevant literature on equity dimensions between parallel and regular degree platforms in public universities in Kenya. Hence the extent of comparison of the two platforms was done on the basis of the findings of this study.
2) Student's parents were not included in the study since they were spread all over the country; hence they were not easily at the reach of the researcher within the stipulated research period.
3) Private universities admitted only students for self-sponsored degree programmes and this limited the extent of comparison of the two platforms.

1.9 Assumptions of the Study

The basic assumptions of this study were:

1). The mounting of parallel programmes was prompted by a genuine desire to widen access to university education
2). Notwithstanding the initial resistance to the introduction of parallel programmes, there was harmony between students in the two platforms.
3). Mounting of degree programmes was prompted by both economic and financial considerations and not premised on the need to enhance equity in university education.

1.10 Theoretical Framework

1.10.1 Introduction

The area of the research study was informed by the whole idea of the theory of liberalization/democratisation of education. The theoretical framework originated from the "Expert Group for Democratisation of education", which discusses education for democratisation (Hughes, 1951). Hughes in his theory emphasises that one of the main goals of the comprehensive reform of the education systems in developing countries in the modernization and reorganisation of the education system is, "a substantial contribution to the democratic development of a country and its future integration". Hence, Hughes in addition justified that democratising of education is the extension of education opportunity to all persons irrespective of class status or ethnic and racial identification. Democratisation as used in this study means the process of making education accessible to as many people as possible. It relies on the principle of equality (equity, access and respect of equal rights for all regardless of their gender, age, race, ethnic or religious background, place of living and wealth, ability, health status etc). Hence democratising of education is the extension of education opportunity to all persons irrespective of class status or ethnic and racial identification. Although democratisation of education is necessary at all levels of the school system, university sector observes focus for several reasons. Universities are the training grounds for professionals to work in the Kenyan economy both in the private and public sector.

Originating from the fact that education is a basic human right, the promotion of genuine democracy and respect for human rights is therefore not only a moral imperative, but also the determining factor in building sustainable human development through distribution of inequalities of Kenya's education system. Actions in support of democratisation and respect for human rights, including the right to participate in education, particularly university education, can make a major contribution in terms of fairness, accessibility and respect of equal rights for all, regardless of sex, age, race, ethnic or religious background, place of living and wealth, ability or health status. Based on liberalisation and democratisation of education, this study investigated equity dimensions of undergraduate degree

programmes in both parallel and regular platforms with respect to four variables as gender, degree programmes, socio-economic background and institutional equity.

1.10.2 Rationale for liberalisation/Democratisation Theory

In this study, the use of democratisation theory had to do with how education is provided, funded, appropriated and distributed to the consumers, which emphasises education more as a good. Democratisation of education is not just a national Kenyan phenomenon occasioned by declining government subsidies for higher education, but rather it stems from a real demand for education, coupled with government challenge to institutions of higher education to find alternative means of guaranteeing funds. The democratisation wave, which has been sweeping across the African continent during the last few years, also had its impact on the education sphere. In this study democracy was not only seen as a form of political arrangement and governmental structure ("the rule of people" by direct or representative democracy), but it also assumed and incorporated a democratic social arrangement: a type of social life that implies acceptance and practice of the principles of equal rights, opportunities and treatment for all members of the community.

The theory of democratisation in this study was applied through identified equity dimensions, determining the levels of democratisation in university education in both parallel and regular undergraduate degree programmes and proposed strategic solutions and a plan of equity. Education for Democratic Citizenship is increasingly being used to indicate a set of education measures, actions and activities with the primary goal to prepare the children, youth and adults for the role of active citizens in a modern democratically arranged society. On this basis, this study was guided by the global move that emphasizes on democratising/Liberalising university education.

Empirical evidence has revealed equity dimensions in university education. In the 2000/2001 student enrolment, 40,000 students were enrolled in public universities, out of which only 28% were women, while the remaining 72% were males. It was also evident that 40% of the 7,000 students enrolled in private universities were women (Musembi and Brown, 2001). Other studies also reveal that, further education and various types of careers are clearly influenced by students' socio-economic

background, the higher the socio-economic status, the greater the likelihood to opt for further studies and more professional courses (Achola, 1997). Public universities in Kenya have gradually accomplished their initial mission of fostering an intellectual community in the country. However, they also faced difficulties such as enrolment beyond their capacity to plan and finance; fiscal challenges; and a decline in quality. To help solve some of these problems, the Kenyan government has supported the establishment and growth of private universities and colleges. Today, almost one in six college and university students attend a private college or university, and this figure increases annually (Brown, 2001).

1.10.3 Democratisation of University Education

Higher Education and subsequently university education, is gradually being liberalised/democratised with some African countries taking the lead, particularly the East African region, Kenya being part of the process. Public universities in Kenya provide undergraduate degree programmes through the parallel platform to those individuals who qualify and are able to pay full fees on their own. This has given the universities an opportunity to make a choice of the extra students they need other than the regular ones, normally admitted by JAB every year. On the other hand the potential students have the liberty and freedom to make informed and own decisions in a free market. Therefore, democratisation of university education is both an aspect of liberalisation and globalisation.

The General Agreement of Trade in Services (GATS) of the World Trade Organisation treats higher education (HE) as an 'educational product'. It is where provision of higher education is designed specifically to eliminate barriers to trade in services, allowing 'suppliers' (public universities) to pursue commerce in HE without regard to the public good, equity and quality of programme, thus turning public services into commodities (World Bank, 1998). Employers estimated that an educational system liberated from the control of the state, structured into autonomous and competing entities, will adapt more spontaneously to the changing demands of the economy and technology. However this may depend on the current arrangement of university education by different governments especially the less developed ones such

as Kenya, in terms of how each government treats the advantaged and disadvantaged students on access to university education.

Beyond simply generating more income, higher education has become a terrain for marketization agendas (World Bank 1998). Since the 1990s universities have been urged to adopt commercial models of knowledge, skills, curriculum, finance, accounting, and management organization, in order to deserve state funding and protect themselves from competitive threats. Moreover, higher education has become more synonymous with training for 'employability'. In view of all these, the question was whether commercialising university education also enhances equity in university education. This study was intended to form a basis of assessment of the situation in public universities on equity dimensions in the parallel and the regular platforms. This is where the key issues seemed to lie. If education is profitable - which it is-, then who will determine the contents, shouldn't we be concerned by the fact that there are also increasingly less "people who are able to consume it?" Moreover, is it true that what universities serve is what "consumers" really want? Or is it what the market demands? One side of the controversy argues that democratisation of higher education benefits potential students because it reduces production costs, thereby placing the "product" within reach of a larger number of people. But on the other hand, the advantages seem to lie exclusively in a greater dissemination of knowledge. Knowledge that is on the surface seems to be increasingly closer to the "common people", brought to them by the opening of markets to education providers. These providers are specifically targeting the least developed countries that turn to this option as a way of compensating the shortfalls of state-funded education. Not to mention are the costs involved in accessing these educational menus, since commercialisation of higher education brings greater privatisation to educational services which most people will be looking for, and which they are forced to paying for, with the ensuing aggravation of social inequality (World Bank 1998).

Lastly, the controversy today also revolves around acknowledging that leaving education entirely in the hands of market forces entails ignoring that it is a right recognized by the Universal Declaration of Human Rights. The debate then focuses on accepting education as a common good and the importance that it has and must have for the development of any society. The implementation of parallel

undergraduate degree platform was a manifestation of the phenomenon of commoditisation; that is taking education to the market place emphasizing the fact that education is a public good in terms of its public and private provisions. However, public provision of university education in Kenya has its limitations, which include under provision of education by the government as a result of limited resources as well as inadequate control of the high demand for university education.

Much of the governments' limitation is encompassed on the idea that education is a commodity and its public and private provision happens in a market place where consumers are to choose which one can possibly satisfy their needs. Individuals have the freedom and liberty as well as limited control as consumers of education to improve their social welfare in society. This poses a question of what the parallel platform is all about, the undergraduate students who pay full fees and the exclusion of those who cannot afford. Hence, other questions arose; what happens to those who cannot afford; what happens to public provisions. The least of all was: What equity dimensions were manifested in the parallel platform vis-à-vis the regular one, and what implications do these equity dimensions have for university education in Kenya.

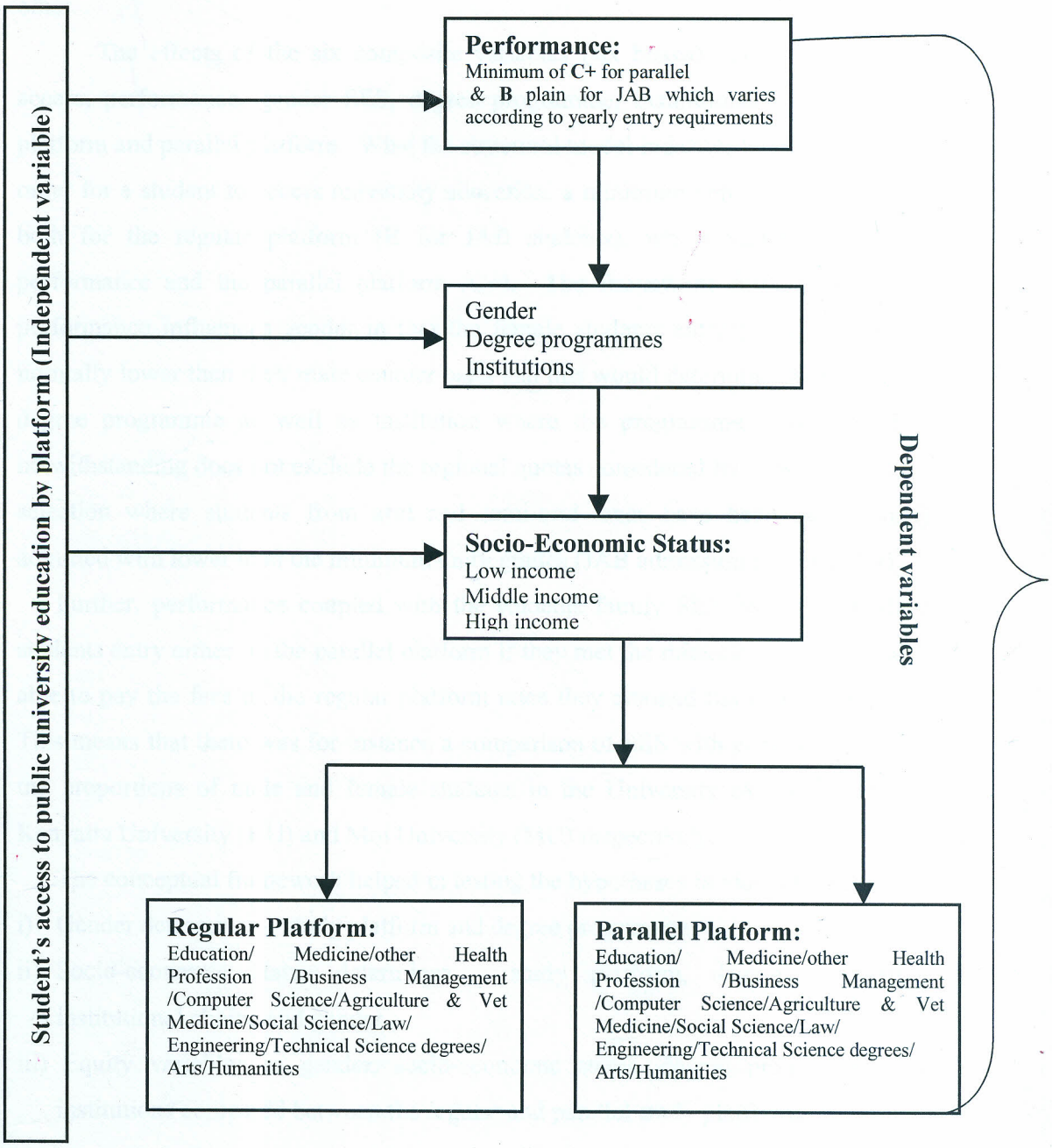
1.11 The Conceptual Framework

This study was based on the conceptual framework of liberalisation and democratisation of education for the fact that university education is liberalised and hence it is a service in the Kenyan market and provided by both the public and private universities. The consumers for the public universities are the parallel and regular undergraduate students.

The model was based on the fact that university education is in the free market and public universities are the providers of both parallel and regular undergraduate degree programmes. Students who qualify and have the ability to pay can apply for admission to undertake the degree programme in a public university through the parallel platform. In this scenario, the study did not only investigate student distribution across degree programmes that were provided for in the parallel and the regular platforms, but also identified dimensions of equity in terms of performance, access, gender, socio - economic status, and institutional equity. The study also

documented implications of the variables for university education in Kenya. The conceptual frame is as presented in Figure 1.

Figure 1: The Conceptual Framework: Regular-Parallel Platform Equity Interface in Public University Education



Source: The Researcher

In developing the conceptual framework for this study, an attempt was made to investigate equity dimensions between the regular and parallel study platforms based on study variables namely student performance, gender, socio-economic status (SES), degree programme and institutional equity. Figure 1 exhibits the conceptual model which encompasses the major variables and their possible pattern of influence on each other.

The effects of the six composite variables (six boxes) outlined are student access, performance, gender SES, degree programme, institutional equity, regular platform and parallel platform. What the structural model indicates therefore is that in order for a student to access university education, a minimum entry point is required both for the regular platform (B for JAB students), which varies with yearly performance and the parallel platform (C+). The framework further shows that performance influences gender in that the female students entry point in Kenya is normally lower than their male counter parts and this would determine their choice of degree programme as well as institution where the programme is offered. This notwithstanding does not exclude the regional quotas considered by JAB in university selection where students from arid and semi-arid areas have been exceptionally admitted with lower than the minimum entry grades (JAB admission records, 2006).

Further, performance coupled with the students family SES, would then allow students entry either on the parallel platform if they met the minimum grade and were able to pay the fees or the regular platform once they attained the acceptable grade. This means that there was for instance a comparison of SES with gender to establish the proportions of male and female students in the University of Nairobi (UoN), Kenyatta University (KU) and Moi University (MU) respectively.

The conceptual framework helped in testing the hypotheses in view of whether:

i) Gender determines – study platform and degree programme.
ii) Socio-economic status determines – study platform, degree programme, institutional choice and gender.
iii) Equity variables as gender, socio-economic status, degree programmes and institutions compared between the regular and parallel study platforms.

1.12 Operational Definition of Central Terms

Degree Programme: refers to planned series/list of instructions of the undergraduate degree courses offered by public universities through the parallel and regular platforms.

Draftees: refers to MI students, randomly allocated undergraduate degree courses on the basis of vacant positions available and not by choice.

Dual Track: refers to the merit based /free/very low fee/government –sponsored entry against fee-paying/self-sponsored entry to university education

Equity: refers to the values of fairness or justice in the way educational opportunities and resources are allocated or shared in public universities, by advocating for a deliberate reduction of all forms of discrimination based on gender, socio-economic status, degree programme, institutions or any other handicap.

Equity Dimension: refers to unveiling the manifestation or extent of any kind of or scope of fairness or justice in parallel and regular undergraduate degree programmes in public universities.

Gender: refers to differences and inequalities between female and male undergraduate students in public university education opportunities in the parallel and regular platforms, responsibilities assigned, activities undertaken, access to and control over educational resources.

Institutions: refers to public universities that provide both parallel and regular undergraduate degree programmes.

Liberalisation/demoratisation/Privatisation/McDonaldization: refers to the liberty and freedom of public universities to provide undergraduate degree programmes through the parallel and regular platforms to those individuals who qualify and are able to pay the fees. It observes the principle of equality (equity, access and respect of equal rights for all regardless of their gender, age, race, ethnic or religious background, place of living and wealth, ability, health status),

Platform: As used in the study, refers to the twin admission processes of the full-fee paying (parallel) and the state controlled/subsidised channel/regular.

Private/Parallel/self-sponsored/Module II programmes – refers to undergraduate degree programmes taken by students who fully pay charges for their degree programmes on their own without any support from the government

Regular/Module I/Government sponsored Programmes - refers to undergraduate degree courses taken by students whose tuition charges is subsidised by the government. The Students and the government have some cost-sharing arrangement where about K shs. 1 10,000 of the tuition fees are paid by the government and the student pays the remaining Kshs. 10,000.

Socio-Economic Status: refers to students family income, parental education level (father, mother), parental occupation (father, mother), and social status to providing optimal care and university education, ranked as high, middle and low SES, depending on their family's relative economic and social ranking

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This study aimed at identifying equity dimensions in parallel and regular undergraduate degree platforms in Kenya's public universities. Specific equity variables for the study were: student socio-economic status, gender equity, degree programmes equity and institutional equity. It was forecasted that findings from investigations on these variables would enable greater participation by key stakeholders in decision making on the provision of undergraduate degree programmes for both parallel and regular students in public universities in Kenya. Literature review has been discussed with reference to equity dimensions on university education worldwide, Africa, East Africa and specifically Kenya being the main focus of this study. Literature review on Kenya was also based on parallel and regular undergraduate degree programmes that previous studies had revealed as a foundation on which this study was built.

2.2 Equity in University Education Worldwide

Equity in education in this study focuses on the values of fairness and social justice in the way educational opportunities and resources are allocated or shared, by advocating for a deliberate reduction of all forms of discrimination based on gender, socio-economic status, degree programme or any other handicap (Republic of Kenya, 2000). However, the foregoing statement notwithstanding, equity dimensions keep recurring across all levels of education in the world.

A brief description of policy initiatives implemented by governments throughout the world reveals the unprecedented scope of university change currently taking place as well as the striking similarity of tendencies also taking place in such a wide variety of nations with different social, political, historical, and economic characteristics. Although the pace and the dynamics of this change may vary according to the specific historical conditions and social formation of each country, the direction of the change seems to follow an analogous path (Rodriguez 1995, Schwartzman 1993, Kent 1993 and Ivíc 1991).

Latin American governments like their counterparts in Europe, Africa, North America, Asia and Australia, drastically reduced subsidies, forcing institutions of higher education to rely more on private funding and to compete among each other both for funding and students. New legislative frameworks to propel university restructuring are being developed, and a wave of government plans, acts, regulations and recommendations are hoisting universities into the marketplace, proposing radical changes in all aspects of academic life, from finances to curricula and to research agendas. With the argument that universities should be competitive, search for excellence and for ways to satisfy the demands and requirements of the business world, most countries' national evaluation systems are being established to provide the basis for funding allocation. The challenge is, once education is left on private hands, and then only those who can afford it access it, raising equity dimensions in university education even further.

In recent decades, there was an impressive growth in enrolments, together with the multiplication of universities, creating greater institutional differentiation, and increasing regionalization and privatization. The statistics for entire educational systems, especially higher education, are significant: educational expansion in Latin America, 1960–1970, accounts for the highest rates of educational growth in the world. During that decade, the rate of growth for higher education was 258.3% (Torres 1990). In Mexico, between 1960 and 1980 for example, the student population grew by 700%. Despite this fact, Pablo Latapi points out that between 1952 and 1972 the proportion of students enrolled in higher education grew merely from 2.4% to 3.8%, showing a strong and highly selective mechanism in the system of higher education (Latapí 1982). Another trend has been the rapid growth of the private sector in Latin American higher education: from the 1950s to the 1990s, the private shares in total enrolment grew from an insignificant 7% to almost 40%. This has assisted governments to reduce pressures for accessibility without incurring budgetary increases, or even to decrease expenditures. A case in point is Chile, where, as a result of the growth of private institutions, public expenditure on higher education decreased from $171 million in 1981 to $115 million in 1988 (Schiefelbein & Schiefelbein 1990, 1996).

The American government also proposed to privatize certain disciplines, ceasing public funding to these activities, and replacing it by user fees, endowments

and contributions from the private sector and business world. The landmark of Thatcher's university policy was the Education Reform Act, which severely reduced government financial support to higher education, and was thought to increase accountability for the use of public funds. It required higher education institutions to become consumer friendly, responsive to their patrons and customers or clients, and entrepreneurial, providing the highest quality goods at the lowest price, and competing for students and research projects. As a result of the Act, universities must not only compete among themselves, but also with some polytechnics, which have been granted university status by the Privy Council. Despite pressuring universities to attract funding from other sources, particularly the private sector, the Reform Act incorporated members of industry and commerce in governing bodies. Further, in many countries, public universities begun to implement more selective admission policies. In the US, state governments gradually reduced financial support of public universities, leaving a vacuum for the private sector to fill. As a result of it, at the beginning of the 1990s far less than half of the budgets in the leading state universities came from general state revenues. The foregoing discussion becomes a pointer to the route university education is taking in terms of access, costs, supply and demand.

2.2.1 University Education in the African context

Widespread university education in Africa is essentially a post-colonial phenomenon. Excluding North Africa with its different history, and South Africa with its special circumstances of both history and resources, only 18 out of the 48 countries of sub-Saharan Africa had universities or university colleges before 1960 (Akilagpa, 2004). With the approach of political independence or soon thereafter, many African countries regarded the establishment of local universities as a major part of the post-colonial national development project. The new universities were to help the new nations build up their capacity to develop and manage their resources, alleviate the poverty of the majority of their people, and close the gap between them and the developed world. In this sense the establishment of the new universities should be seen in the same light as the various efforts at nation-building, including the setting up of national industrial and commercial undertakings, national airlines and shipping lines, and the whole notion of import substitution industrialisation.

The attainment of political independence in most African countries, the typically young and small university sector was invested with high national aspirations and supported from public resources. A scenario which has changed and become more problematic in the form of reduced levels of public funding on the part of the African governments. There are broad range of changes that have conditioned developments in Africa and elsewhere. Akilagpa (2004), identified that there are fundamental alterations in the key drivers of wealth generation and power relations, caused by transformations in the global political economy and the heightened significance of information and knowledge to production, management and the services throughout the world. This includes the increasing pace of globalization; "the comodification" of knowledge and the centrality of generation and application to social and economic development, the increased openness of national borders to flows not only of goods and services but of knowledge and information, the enhanced mobility and global market for high skilled labour and the new organizational forms and delivery modes that have resulted from the ICT revolution.

Against the foregoing background, the explosive growth in the stock of global knowledge and the rapid rate of obsolescence have led to a steady shift from the importance of acquiring a particular body of knowledge to developing the skills for acquiring new knowledge and the capacity for using as a resource in addressing societal needs Theses developments have brought on the one hand, demands for new kinds of knowledge, new modes of knowledge production and dissemination, and on the other, greater possibilities for effective networking and partnership. The impact of these transformation drivers has been heightened in Africa since the mid 70s by economic and social changes specific to the continent.

In relation to universities, the relevance of these developments was the general retreat of the stage from social provisioning and the declines in the level of real resources available to African higher education, at the very time that the role of knowledge in societal development became accentuated. Fundamentally, demand and supply in university education influences the aspect of equity across the board. The discussions that follow, provide the forces of demand and supply and how the two have impacted on university education in the world.

i) Demand for university education in Africa

Apart from a diversified student population and new kinds of courses and delivery modes, higher learning institutions in the world have also to address new knowledge needs. The new knowledge needs were more applied and required in most cases, in consultancies and policy advice. This placed emphasis on a wider range of knowledge services to be provided by the universities. Increases in demand for university education were also seen in terms of access, capacity and enrolment expansion, which were part of challenges in university education.

A striking feature of the higher education terrain in Africa has been the rapid increase in the number and variety of institutions as well as the levels of enrolment since political independence in the 1960s. From a low of 52 in 1960, the number of universities almost trebled to 143 by 1980, and more than doubled to 316 by 2000 (Mbemba and Mario, 2003). The vast bulk consisted of public universities, which accounted for almost all the increase till the 1980s. The number of *private* universities, estimated at seven in 1960, remained below 20 till the mid-1980s, only to begin a rapid climb, from 27 in 1990 to an estimated 71 within ten years and 84 two years later. Overall student enrolment increased at an equally striking rate. From an estimated total of 181,000 in 1975, there was a three-fold increase within five years, according to published figures, to over 600,000 by 1980. The numbers more than doubled again in a decade, to 1,750,000 by 1995. (Mbemba; Mario, 2003).

What was striking about the spurt of expansion of both institutions and enrolment in the 1990s was the acceleration in the rate of establishment of *private universities*. Though their number is still low and student enrolment quite small relative to the public institutions, their rapid spread represents a new departure in higher education provision in Africa. Evidence of this more recent expansion, though not yet fully captured in the official statistics, can be seen from case study material from selected countries. From our selection, the mover in the 1980s was Kenya, which went from 2 private universities in 1980 to 9 by 1990. In the 1990s it was Tanzania (from 1 in 1990 to 11 by 2000); Uganda (2 to 10); Congo (0 to 4) and Senegal (0 to 3). In the last couple of years, the movers have been Burundi, which went from none in 2000 to 4 by 2002 (Mario, 2003). The case of Ghana is particularly striking. In 1990, there were three public universities with a total enrolment of just

under ten thousand (10,000) students, and no private universities. By the academic year 2000/2001 the numbers had risen to five public universities and seven private universities, with a total combined enrolment of just under 43,245 made up of 40,673 in the public, and around 2500 in the private universities (Mario, 2003). The trend has been just as sharp in Mozambique, where enrolment at the University of Laurenço Marques (later Universidade Eduardo Mondlane) stood at 2433 at independence and the start of the civil war in 1975. After dropping to 750 within three years, it climbed back to 4000 by 1990 (Mario, 2003). Less than ten years later, the number had trebled to over 12,000. Similar stories can be told almost everywhere. Thus, in the Republic of Congo, the number of students at the Université Marien N'gouabi grew from 3785 in 1976 to 19,000 by 1997, while in Nigeria the rise was from 176,000 in 1989/90 to 376,000 a decade later (Mbemba; Mario, 2003).

The forgoing discussion is evidence of the demand for university education and also the rapid increases experienced in enrolment of undergraduate students in some African countries confirming that public universities' capacity have been stretched to maximum and are gradually becoming unable to admit all qualified students.

ii) Provision of university education in Africa

This expansion and diversification of demand normally coincided with two other related developments. One of these, namely, the over-stretching of university capacity resulting from expanded enrolment without commensurate resource increases, has already been noted in the background section of this study particularly in the case of Kenya. The second factor was the rise of the ideology of the market, the retreat of the governments from social provisioning and the institutionalisation of cost-recovery in the social sector. This combination of factors ensured that the existing public universities were in no condition to meet the extended scale and variety of demand for higher education (Akilagpa, 2004). The principal response was the establishment of yet more public universities in virtually all countries. However, this was not restricted to universities, as there were increases as well in both the public and private (non-university tertiary sectors). In addition to this expansion in capacity of the conventional institutions new institutional forms, new programme offerings, and new

types of providers came into prominence. The institutional forms included part-time and evening classes, vacation courses and an increase in distance education. Though these were not altogether new, the scale and spread of their use was quite dramatic. Makerere University, for instance, increased evening classes to more than triple the scale of regular day classes, and introduced courses in social sector planning, tourism and hotel management.

Universities in Africa and the world round, therefore compete to meet market demand a scenario with implications of access and equity among different student socio-economic backgrounds. The students hence have opportunity to choose which university programmes are suitable to them. Additionally, higher education providers therefore have a challenge of equity dimensions to handle. This study investigated equity dimensions that existed among undergraduate programmes in both regular and parallel platforms in public universities in Kenya.

iii) Higher education providers

In this study, university education providers included public universities, however private universities, were not totally left out since in both cases the universities operate for-profit as well as not-for-profit basis. Also of importance is the increasing presence of offshore provision of university education in the form of correspondence, directly and via Internet, as well as local franchises and branches of foreign-based institutions that exist worldwide including Kenya. Against this general background of a diversifying higher education system worldwide, the researcher took up for closer scrutiny four equity dimensions: gender, socio-economic status, degree programme and institutional equity in public universities in Kenya. This study focussed on Public universities as providers of university education for the undergraduate degree programmes in the parallel and regular platforms.

The researcher however is not forgetting the coming of ***private universities*** and the notion of ***"the public good"*** in the current heavily market-influenced dispensation. The rise of private universities is the critical new force in this process of system differentiation. Because of their importance in many developing countries and the accelerating pace of their establishment in Africa, it is necessary to devote a few paragraphs to a summary account of their potential significance in the new configuration of African higher education systems. Based on the idea of 'the public

good", higher education confers undoubted benefits on individuals and families, and plays a crucial role in national economic growth and development. At the same time it clearly constitutes a "public good", serving broad social purposes going beyond individual or economic development benefits. Other potential benefits include (a) the improvement of social justice through fair access; (b) the pursuit of knowledge for more than commercial ends; (c) the spread of a broad range of skills and capabilities across the entire population; and (d) the education of a democratically informed and critical citizenry. (Taskforce on Higher Education and Society, 2000; Singh, 2001; World Bank, 2002).

It is instructive that from the early years of independence it was accepted in Africa with hardly any question that university education was predominantly a "public good" and thus a proper charge on the public purse. This decisive "public good" perspective was influenced by the consideration that, given the situation of relative underdevelopment of most countries immediately after independence, education, including university education was seen as a key instrument for accelerated development and catching up with the rest of the world. This perception has continued to influence public expenditure patterns, with the result that in 1995 African countries spent annually on each university student, on average, about four times their per capita Gross National Product (GNP), as compared to a world-wide average of 77% and a figure of 36% for Europe and Central Asia. In the 1980s a number of factors tended to bring into question the undoubted support and the level of subsidies for higher education. The first set of factors turned on the strained economic conditions in most African countries. As previously indicated, this led to a substantial reduction in the amounts available for social sector expenditure. Against the background of the rapidly increasing university enrolments and the demand of other sectors for public resources, it became clear that the states could not continue to provide for university education at the levels of the 1960s and the 1970s.

The ideological dimension embraced the democratisation of knowledge and the treatment of education as a service, educational expenditure as a "cost" rather than a social investment. This ideological posture was reinforced by the technical arguments that the rates of return to basic education were so much higher than returns to university education. This "rate of return" argument was strongly pressed both as policy advice to African governments and as conditionalities for funding. In addition,

it influenced external donors into turning away from the support of higher education in favour of basic education. The second was a concern to expand and strengthen basic education under the principle of giving priority to "education for all" and, therefore, reducing the relative share of higher education in the public budget. Thus the internal economic decline combined with strong external ideological and policy pressure tilted the balance decisively towards the view that university education was primarily a "private good". The result was the reduction of public expenditure on Africa's universities in real terms, especially in terms of the unit cost per student, and the extension of the policy of cost-recovery to higher education.

Public subventions for the running of the universities were severely cut, and a range of subsidies for students was removed. The resulting situation was contradictory. On the one hand, there was no reduction in what society expected of the universities and their graduates, nor was the pressure to expand enrolment lessened. While this *social* purpose was evident from the persistent increase in the number of public universities as well as the rise in their enrolments throughout the period, the pressure to privatise and vocationalise the universities reflected the increasing conception of students and their families as the principal ***private beneficiaries***. In the process, the "public good" dimension of university education tended to be put aside. What this called for was vigorous debate aimed at delineating the key issues and choices that needed to be made and developing a consensus around the nature and essential requirements of national development, including the proper goals of higher education, and to use that as a yardstick for specific policies and actions in relation to higher education reform. In the absence of such clarity and consensus about the issues, and under conditions of fiscal stringency and a political economy dominated by market ideology, narrowly economistic considerations of efficiency and value-for-money have tended to dominate the reform effort. Hence the introduction of parallel undergraduate degree programmes in Makerere University, Uganda, Kenya's public universities and similarly other African countries.

In the process the more complex social purposes have tended to get lost in the shuffle – sometimes with the explanation that those purposes could be addressed as economic conditions improved - a version of the "trickle-down" theory. As previously noted, the 1980s and early 1990s witnessed a turning away of the states

and most external donors withdrew support for the universities, resulting in the under resourcing and general deterioration noted above.

2.2.2 University Education in the Kenyan context

In Kenya, the equity dimensions mainly originated from the racial segregation of schooling before and even after independence on the lines of European and African schools, high cost and low cost schools including the fact that Kenya now has both public and private universities (Musembi, 2001).

African governments however, are committed to the development of university education on the premise that higher education is an area of investment. It is politically and socially sensitive in that governments need both highly trained people and top-quality research to formulate policies, plan for programmes, and implement projects that are essential to development. The pronouncements at the 1985 Mbabane and 1987 Harare meetings of the leaders of the institutions of higher education in the African regions reaffirmed the urgent need to develop university education in Africa (AAU, 1985, 1987).

The 1980s period also saw the unprecedented growth of public universities in Kenya. During this period, it had become clear to the government of Kenya that even with the expansion of the University of Nairobi, it was still not adequate to meet the demand for university education. In 1981, a Presidential Working Party recommended the setting up of the second public university. All these were done with a view of enhancing the capacity of university education in Kenya to meet the increasing demand, that had exposed university education t varied challenges.

2.2.2.1 Challenges Facing University Education in Kenya

One of the challenges for the decade of the 1990s has been how to manage the university system effectively in the context of introducing market-geared courses and also being able to meet the market demand. This has been seen as one way of efficiently and equitably utilising available resources to meet the missions of the universities. With the financial constraints and the implementation of structural adjustment programmes, the government of Kenya, like other governments in Africa, undertook adjustments in education financing. (Eshiwani, 1990; World Bank, 1988). To reduce government expenditure in higher education, the government introduced

cost sharing at the university level. Currently, students pay a subsided tuition fee of Ksh. 50,000 per year against a unit cost of Ksh. 120,000, with the government making up the difference. (GOK; 1998, 1996, 1994 and Wandiga, 1993).

In view of cost sharing in operation and the increased high cost of education, it is pertinent to examine the equity dimensions in public universities among undergraduate degree platforms with the aim of identifying any issues of equity in university education. The reason being that increased inequality tends to retard growth in poor countries and boost growth in richer ones, and the fact that in rich countries, increased inequality discourages education and growth by increasing the number of poor people who cannot afford education (Thorvadul and Gylfi, 2001). In addition, higher education appears to encourage economic growth directly as well as indirectly through increased social equality and cohesion (Thorvadul and Gylfi, ibid). Below, is an outline of information that existed on four variables prior to the study that were examined based on the study equity variables viz:

2.3 Equity dimensions across Socio - Economic Status

Socio-economic status in this study was measured on the basis of a dependent student's parental educational attainment and occupational status. Where information on parental income was available, this was also included in determination of the dependant's socio-economic status. University education provides a mechanism for improving socio-economic status. When there are no access provisions for people from low socio-economic status, the poverty cycle is created from which there is little escape (EOPHE, 1990). On the other hand, if disadvantaged groups such as people with disabilities are given access to higher education, their chances of employment are increased (EOPHE, ibid). However, in most countries, governments remain the largest financiers and providers of education implying that universities receive financial assistance mainly from the state (Psacharapoulos, 1982; Sherman, 1990). Hence, the level of higher education activities in a country has for long depended on the soundness of national economic performance. The continued short fall in the government financial allocation to public universities led to reduction of government expenditure in higher education. The Kenya government then introduced cost sharing at the university level and subsequently gave the public universities the mandate to institute income-generating activities (IGAs).

University students' socio-economic status strongly influences their placement in programmes, a study on regional and socio-economic origins of students in Kenyan public universities revealed (Achola, 1997). Additionally, poor income groups are under–represented, compared to higher income groups among public university students. (Achola, ibid). The study based this notion on the types of schools attended, and /or information available in the social environment on the market worth of different degree programmes. Due to the introduction of the parallel platform, students who qualify and pay all their fees have a chance to undertake a degree programme under the parallel platform. The question was; who was in the parallel platform vis-à-vis the regular during the study period based on their SES? Previous research findings show that access to university education is relatively open to students of diverse socio-economic backgrounds, with those from blue- collar and peasant backgrounds strongly represented (Prewitt, 1974 and Eshiwani, 1983). The overriding question of concern to the study was whether or not the situation had changed in recent times with the increase in the number of universities as well as students and also with the introduction of the parallel platform.

2.4 Gender Equity dimensions

Education is a major means of empowerment, one through which both men and women realise their potentials. Higher education has a special responsibility in this process, hence has always placed special emphasis on equity between men and women in the provision of higher education (Laura and UNESCO, 2001). Equity dimensions are not automatically performance indictors in quality audits in the UK. Whereas in current UK policy, participation of working class students has gained some attention, gender is not seen as a variable to be intersected with social class, as women now form the majority of undergraduates (Blackmore, 2000a and 200b). In access debates, recognition of women's quantitative participation, without consideration of vertical and horizontal distribution, is assumed to lead automatically to a redistribution of opportunities and entitlements (Morley, 2003a and 2003b). However, in terms of equity, data on high, low and middle level income countries across the Commonwealth showed that there were low numbers of senior women in academic employment as compared to that of their male counterparts, (Husu, 2001).

Gender equity in Africa is equality between men and women and has long been a widely recognised, high-priority national as well as global policy objective.

Nammudu (1995) indicated that higher education institutions and especially African universities have a critical role to play in the social and economic transformation of African societies. On the part of Kenya, the development of education has been a longstanding objective of the government since independence. The reason for this objective is clear since education is considered by different stakeholders as being a basic need and a basic right. Besides, the socio-economic benefits accruing to education are now well established. When opportunities to acquire equity education are opened to girls and women, such benefits are even greater. Studies indicate that countries with high literacy rate among women and men have lower level of fertility, lower infant and maternal mortality, longer life expectancy and are able to address gender equity dimensions in development (Abagi, 1999)

Despite major efforts to narrow the gender gaps in education in Kenya, wide disparities are continuing at the secondary and tertiary levels. The gender parity is more pronounced among those students who have completed university education. A considerable large number of students graduate from public universities in Kenya every year. It was revealed by the Daily Nation (2001) that out of 60,612 university graduates, only 18,175 of them are women. University education gender difference has been more pronounced since only 0.7 per cent of girls who enrol in standard one make it to the university compared to 1.6 per cent of boys (The Daily Nation, Ibid). A symposium on gender disparities in higher education (HE) in Kenya identified that gender disparities in students' enrolment exist at all levels of higher education. While gender disparities in students' enrolment exist at all levels of higher education, they are particularly wider at higher degree levels and in science, mathematics and technology (SMT) oriented disciplines (Bunyi, 2004). More so, educational statistics in Kenya indicate that the higher one moves up the educational ladder the wider the gender disparities in favour of males become. Equity in public university education has been identified by previous research in different forms among the female gender as well as the male gender. Female enrolment in public universities rose faster than males' during the period 1990-2000. The number of females increased by 4,509 from 9,324 in 1990 to 13,833 in 2001 representing a rise of 48.4 per cent while the male enrolment rose by 6, 052 from 22, 308 to 28, 360 representing a 27.12 per cent increase (Kilemi and Njuguna, 2002). However, overall gender gaps in enrolment in public universities have continued to persist. Female students represent only 30% of

the students in public universities distributed among the six-(6) public universities. Jomo Kenyatta University of Agriculture and Technology (JKUAT) 19%, University of Nairobi (UoN) 25%, Moi 27%, Egerton 30%, Maseno 36% and Kenyatta 38% (Kilemi and Njuguna, ibid). Table 2.1 shows student enrolments in the various undergraduate degree programmes offered in the six public universities in Kenya.

Table 2.1: Enrolment by gender and degree programme in public universities 2002

Degree Programme	Number of students		Percentage per programme	
	Male	**Female**	**Male**	**Female**
Education	37,932	19,320	66.3	33.7
Humanities and Social Sciences	37,488	11,405	76.7	23.3
Natural Science	15,037	2,466	85.9	14.1
Agriculture and Vet Medicine	12875	1,851	87.4	12.6
Engineering and Architecture	7,974	1,139	87.5	12.5
Medicine and Pharmacy	3,416	837	80.3	19.7
Total	114,722	37,038	75.6	24.4

Source: Percentages computed from figures generated from 2002 JAB records by Kilemi & Ngethe (2002).

It is evident that there was a wide gender disparity in favour of men in all undergraduate degree programmes in public universities in Kenya. The highest percentage of females enrolment as compared to their male counterparts was in the education degree programme, which registered 33.7 per cent and is roughly half that of males at 66.3 per cent. The widest gender disparities are in science, mathematics and technology (SMT) related programmes where female enrolment was 12.5 per cent in engineering and architecture; 12.6 per cent in agriculture and veterinary medicine; 14.1 per cent in natural sciences and 19.7 per cent in medicine and pharmacy.

Due to the forms of equity dimensions that have been identified in university education, it is revealed that there is general under-representation of females in undergraduate degree programmes in public universities. However, this may be detrimental to the society since inequality of access to higher education, results in increased dependence on welfare by disadvantaged groups, who in this scenario are the female students. Further, the public universities have instituted self-

sponsored/parallel degree platform conducted alongside the regular ones. Where does this place gender equity? This study investigated gender equity dimensions of parallel and regular students and identified existing gender imbalances.

2.5 Equity dimensions of Degree Programmes

Courses taken up by students in undergraduate platforms aim at enabling the university's students to make informed decisions about their careers, take steps to realise their goals and to develop the capacity to manage their careers throughout their working lives. The process of identifying course options, making choices and planning for realisation of individual goals is usually painstaking and time-consuming. Developing career-planning skills generally means working through various stages which relate to acquiring self-awareness, researching opportunities, making decisions, planning and taking action to achieve the career objectives that an individual sets. Previous studies have revealed that in public universities in Kenya, there are degree programmes that seem to be more attractive to students from low socio-economic backgrounds namely: Bachelor of education (Arts), Bachelor of Science (Natural Resources), Bachelor of Technology and Bachelor of Science – Agriculture (Achola, 1997). This notion suggested that taking up a degree programme is also influenced by the students' socio-economic backgrounds. However, Acholas' study on access, equity and efficiency in Kenyan public universities only focused on gender, based on the students' socio-economic status. This study investigated four equity dimensions of undergraduate degree programmes in both parallel and regular platforms.

The Joint Admissions Board (JAB) conducts the placement of students in regular undergraduate degree platform in Kenya. However, there appears to be a greater awareness of the relevance of the marketable professional degree programmes among students. Available literature has indicated that gender differences characterise educational and course aspirations (Anderson, 1983 and Hussen, 1981). On the whole, degree programmes such as Information Sciences and Law, enrolled larger proportions of low- socio-economic status male students and middle socio-economic status female students (Achola, 1997). Based on the findings of Acholas' study, the law profession is still perceived as a lucrative option by male students from

low socio-economic families, while to the female students from middle socio-economic backgrounds, it is a prestigious occupation for women. This study not only investigated equity dimensions of degree programmes in parallel and regular platforms but also found out their implications for university education in Kenya.

2.6 Institutional Equity

Higher education in (sub-Saharan) Africa is in a crisis (Okuni, 2000). African universities are plagued by meagre educational budgets. A notable problem too, is a severe decrease in funding for universities resulting from extended economic stagnation on the continent. Meanwhile, enrolments have been rising sharply, and to this end, many new universities have been created. African universities are facing enormous difficulties, therefore, the university systems created in imitation of Western models after independence have generally been unable to totally fill the needs of the African society (Okuni, ibid). African governments have tried to meet these needs to some extent.

Public universities in Kenya have accomplished their initial mission of fostering an intellectual community in the country. However, they have also faced difficulties such as enrolment beyond their capacity to plan and finance; fiscal challenges; and a decline in quality. To help solve some of these problems, the Kenyan government has supported the establishment and growth of private universities and colleges.. In addition, the implementation of parallel platform is another dimension taken by public universities as a solution to some of the problems. This study identified equity dimensions in public universities based on enrolment in degree programmes, gender and socio-economic backgrounds of students in both parallel and regular undergraduate platforms.

2.7 Summary of Literature Review

Overall, literature review outlines equity dimensions that have persisted in university education worldwide, specifically in Africa and in Kenya particularly among public universities. Inequalities that have been identified by previous studies have persistently continued across all levels of education. The resulting attempts to solving some of these issues in Kenya included among others the implementation of the quota system, a method introduced by the Kenya government for fair representation of students to public universities. Disadvantaged regions as well as families were

expected to benefit from this system. However, the benefits have been minimal due to the high demand and inadequate capacity of university education.

Public universities in Kenya currently offer degree courses in both regular and parallel degree platforms, a new dimension that this study assumed brought with it further challenges for university education in terms of equity. Given the expansion in public universities, the most difficult challenge facing them lies in the successful resolution of the 'tension' between the efficient and equitable utilisation of existing resources, on one hand, and control of the high demand for more equitable and quality education, on the other. The implementation of the 8-4-4 system of education and the cost-sharing policy marked a fundamental change in the philosophy governing university education in Kenya, in that they reflected a break with the past elitist tradition and high reliance on government financing of education. The public universities opted to use their existing resources more to establish cost-reduction measures and the parallel undergraduate degree platform was instituted in 1998 in the public universities with University of Nairobi taking the lead. Currently, enrolment of parallel (Module II) students in University of Nairobi is about 14,488 and about 13,000 students in the regular (Module I) Platform (Kiamba, 2003). The difference in enrolment point towards equity dimensions already evolving among undergraduate degree platforms in public universities. Hence the study was designed to investigate four equity variables that included; socio-economic status, gender equity, degree programmes equity and institutional equity. The study also identified unfulfilled gap comprising of equity dimensions and how these issues impact on university education and development in Kenya.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter of the thesis presents details of the study design, the target population, sample size, sampling procedure including respondents reached. It further describes the data collection procedure, research instruments validity and reliability and methods of data analysis applied.

3.2 Research Design

This study used the descriptive research design to investigate equity dimensions in parallel and regular undergraduate degree platforms in public universities. The key variables for this study were; student's socio-economic status, gender equity, degree programme equity and institutional equity. The outlined variables were the various equity dimensions for the study, which were investigated to establish their equity levels in the parallel and regular degree platforms. The research design allowed for both vertical and horizontal analysis across all the variables and other additional analysis done that were of benefit and interest to the study.

Given the nature of the variables, the descriptive survey was adopted in conducting the study fieldwork. Descriptive survey was deemed appropriate for the study for the fact that its purpose and objective fell within the research design model. Descriptive research studies are conducted to establish the nature of the existing conditions (Travers, 1969). Further, descriptive research design used in this study included facts, current conditions concerning the nature of students including a number of objects or class of events. Descriptive survey also involves the procedures of induction, analysis, classification, enumeration and measurement (Good, 1963).

In view of the purpose of a descriptive research study, it is noted that such a study design also helps to secure evidence on existing situations and conditions and to identify standards or norms with which to compare present and hence plan for way forward (Good, 1963). . In addition, to determine how to take the next step from where the situation is, descriptive study also assists in collecting generalisable information from any human population whether homogeneous or heterogeneous (Robson, 1993). In this study, information was collected from students and lecturers from the three public universities (KU,MOI and UoN), as well as education experts

and policy makers. Since most data to the study objectives did not otherwise exist, descriptive survey design was deemed appropriate. The descriptive survey design in the case of this study was relevant since it unveiled the existing equity dimensions for parallel and regular undergraduate degree platforms and their implications for university education in Kenya.

3.3 Study Location

The study was carried out in public universities in Kenya. Three out of the six public universities participated in the study namely; University of Nairobi in Nairobi Province, Kenyatta University on the boundary of Central Province and Nairobi Province and Moi University in Rift Valley Province. University of Nairobi is situated within the capital city of Kenya. Kenyatta University is on the outskirts of the Nairobi city, while Moi University is located outside Kenya's capital city, Nairobi, but within the close environment of one of the major towns in Kenya called Eldoret in Rift Valley Province. All the three public universities admit students on both parallel and regular platforms and conduct undergraduate degree programmes, which were the two main focus of this study.

3.3.1 Rationale for Study Location

The three public universities were purposively selected for this study. University of Nairobi stands out as the first a nd l argest public university and particularly as the pioneer implementer of the parallel degree platform. UoN is the only university within the central business district of Kenyas' capital city, (Nairobi). Kenyatta University represented public universities situated in close environs of the main urban centre and a popular university for Education including training of degree courses for the teaching profession. Moi University represented rural universities and one with the largest student population compared to Egerton, Maseno, JKUAT including the new one, Masinde Muliro University Science and Technology respectively.

3.4 Target Population

In this study, the target population included students in the six public universities in Kenya namely Nairobi, Kenyatta, Moi, Egerton, Jomo Kenyatta and Maseno. Additionally, academic and administrative staff in the respective public universities were also formed the target population. Policy makers namely: Ministry of Education

(MoE), Commission of Higher Education (CHE) and Joint Admissions Board (JAB) and education experts from World Bank, Ford Foundation, Rockefeller, IPAR and KIPPRA were also included in the target population. The students and university staff (academic and administrative) were the key participants in the study since they are directly involved in the parallel and regular degree platforms as consumers, education providers and also as institutional managers at different levels of operation. The students are direct consumers of academic services (undergraduate degree programmes), and their opinions and views on the parallel and regular degree programmes were considered crucial information for this study.

Study population was 61,115 drawn from stakeholders involved in public university education mainly as students (consumers), university staff (service providers) and education experts. The population distribution of students, academic and administrative staff in the six public universities that the study targeted was 58,017, 3000, and 90 respectively. Education experts and policy makers were 5 and 3 officers totalling 8 staff in that order.

The total number in every target population sub-group was used to determine the proportion for the study sample. The students' proportion by gender enrolled in 2003/04 academic year in the six public universities included UoN with 16,991 males and 9,720 females; KU 10,753 males and 5,023 females; Moi 5,804 males and 4,643 females; Egerton 6,908 males and 2,444 females; JKUAT 3,203 males and 1,454 females; Maseno 3,429 males and 2,178 females (Economic Survey, 2004). The total enrolment also included parallel students. The study explored for equity dimensions in the parallel and regular undergraduate platforms as opposed to the private universities that only catered for full paying fees students (Brown, 2001). This led to the deliberate omission of private universities from participating in this study.

3.5 Sampling Techniques & Sample Size

3.5.1 Sampling Techniques

The population for this study was 61,115 from students, academic staff, public university administrators and education experts/policy makers, out of which 748 randomly determined, formed the targeted sample size. Krejcie and Morgan (1970:from *http://www.c@e.unt.edu/allen/)* indicate how a sample size of research activities is determined depending on the study population. The size of the population and amount of error determines the size of a randomly selected sample. The two scholars instituted Tables for determining sample sizes, which was applied in this study based on the proportions for the population sub-groups already stated earlier in the target population section (3.4). Krejcie and Morgan's' Table helps a researcher to determine (with 95% certainty) what the results would have been if the entire population had been surveyed. Using Krejcie and Morgan's Table of determining sample size, the study sample size was then determined (Refer to appendices (Pp. 168), for details on Krejcie and Morgan's sampling Tables).

3.5.2 Sample size

Systematic random sampling technique was used in this study to select both university students, academic and administrative staff separately by population subset. In the application of systematic random sampling, respondents were selected randomly by population sub-group. According to Gay (1976), the size of the population, divided by the desired sample size, gives a number called K. In this study therefore K = (students, academic staff and administration staff population divided by the desired sample derived from Morgan and Krejcie Tables. The desired sample size for university students was 400, university administrative staff was 40 and academic staff was 300. In this sampling technique, the selection of respondents was random so that each member of the university students, academic staff and administrative population had an independent chance, subsequently selected and participated in the study.

Systematic random sampling was further applied in this study since it ensured a fair representation of the university student by gender, year of study and platform. The academic staff was also systematically sampled by designation (professor, senior lecturer, lecturer, tutorial fellow). The sampling technique ensured fair representation

of the study population since the number of students was randomly sampled from parallel and regular platforms, male and female students in their second, third and fourth years. The administrative sub-sets included (vice chancellors, principals of colleges, registrars, and deans of faculties/schools). Purposive sampling technique was also used to select education experts and policy makers. Purposive sampling technique is normally used where the total population makes the sample size (Gay, 1976). It was a sampling technique appropriate for this study to enable the study use relevant organisations and they were; JAB, MoE, CHE, IPAR, KIPPRA, World Bank, Ford Foundation and Rockefeller that provided useful information on parallel and regular platforms that benefited this study. Tables 3.1, 3.2, 3.3, 3.4 and 3.5 respectively outline the breakdown of the sample size into the relevant quotas for all the respondent groups that were involved in the study and their response rate.

Table 3.1: Population distribution and sample size

	Population	Sample Size	%
Students	58,017	400	1
Academic Staff	3,000	300	10
Administrative Staff	90	40	36
Education Experts	5	5	100
Policy Makers	**3**	**3**	**100**
Total	**61115**	**748**	

Table 3.2: Public University Undergraduate Student Sample

Sample Group	Sample sub-set												TT	TR
	Parallel						Regular							
Nairobi	Year 2= 26		Year 3 = 26		Year 4= 17		Year 2 = 24		Year 3 = 26		Year 4 = 23		142	143
	M 16	F 10	M 16	F 10	M 10	F 7	M 14	F 10	M 16	F 10	M 13	F 10		
Kenyatta	Year 2= 26		Year 3 = 26		Year 4 = 18		Year 2 = 22		Year 3 = 26		Year 4 = 22		140	140
	M 16	F 10	M 16	F 10	M 10	F 8	M 12	F 10	M 16	F 10	M 12	F 10		
Moi	Year 2= 21		Year 3 = 21		Year 4 = 16		Year 2 = 22		Year 3 = 22		Year 4 = 16		118	108
	M 11	F 10	M 11	F 10	M 8	F 8	M 12	F 10	F 12	F 10	F 8	F 8		
Sub-Total	43	30	43	30	28	23	38	30	44	30	33	28	400	391
	197 = 49%						**203 = 51%**						**100%**	

M = Male; F = Female

TT = Total Targeted, TR = Total Reached

Table 3.3: Public University Administrative Staff sample (policy makers)

Sample Group	Sample sub-set				Total Target	Total Reached
	Senior Administrators	Deans of Faculties	Registrars	Principals/Administrative Officers		
Nairobi	1 DVC Administration	12	1 Registrar Academic	7	21	15
Kenyatta	1 DVC Administration	3	1 Registrar Academic	3	8	7
Moi	1 DVC Administration	7	1 Registrar Academic	2	11	10
Sub-Total	**3**	**22**	**3**	**12**	**40**	**32**

Table 3.4: Public University Academic Staff Sample

						Target	Return
	Professors	Associate Professors	Senior Lecturers	Lecturers	Tutorial Fellows	Total Target	Total Reached
UoN	6	8	22	64	20	**120**	**116**
KU	6	8	18	36	16	**84**	**65**
Moi	6	8	14	56	12	**96**	**90**
Sub-total	**9**	**12**	**27**	**78**	**24**	**300**	**271**

Table 3.5: Education Experts and Policy Makers Sample

Sample category {Policy Makers}	Sample sub-set	Sub-total	Total Reached
JAB	1 Senior officer	1	1
MoEST	1 Director of education (Quality Assurance)	1	1
CHE	1 Senior officer	1	1
Sample category {Education Experts}	**Sample sub-set**	**Sub-total**	**3**
IPAR	1 Senior officer	1	1
World Bank	1 Senior officer	1	0
KIPPRA	1 Senior officer	1	1
Rockfeller	1 Senior officer	1	1
Ford Foundation	1 Senior officer	1	1
Grand Total	**8**	**8**	**7**

Public university personnel and students had been identified for this study since they were the direct participants in the degree platforms in the form of: investors (students), administrators in various professional areas, planners, directors, co-ordinators and facilitators. The other key stakeholders were classified as, experts and policy makers in education whose contributions towards the study were considered to be of great support in terms of policy framework in university education in Kenya.

3.6 Instrumentation

3.6.1 Development of Research Instruments

Four research instruments were developed for the study; namely two questionnaires, document analysis guide and one interview schedule. They included: university student questionnaire, university academic staff questionnaire and interview schedule for policy makers and education experts (including university administrators) and other organisations who participated in the study, outlined in Table 3.6. Questionnaires in this study presented an even stimulus to a large number of public university students and lecturers simultaneously and provided accumulation of data (Walker, 1985). Questionnaires also clarify the purpose of the study and gives meanings of items that may not be clear (Best and Kahn, 1992). Study questionnaires had both open and closed-ended questions.

Open-ended questions gave respondents more freedom to express their views or opinions and also to make suggestions while closed-ended questions guided respondents to give specific responses (Gay, 1976). According to Walker (1985), interviews rely on facts that people are able to offer an account of, in terms of behaviour, practices and actions to those who ask the questions. Further, interview schedules allowed the researcher to probe and follow-up respondents' answers for more information and clarify vague statements (Gay, ibid).

i) Student Questionnaire

The student questionnaires sought information on opinions and attitudes on the degree platforms in terms of preferences of degree programmes and indication on satisfaction levels with their choice of institutions. Included also was student views on regular vis-à-vis parallel degree platforms in terms of degree programme currently being undertaken based on whether they were equitably placed and are satisfied with the their degree programmes .

ii) Academic Staff Questionnaire

Academic staff questionnaire gathered information on staff experiences in teaching parallel and/or regular programmes, identifying equity dimensions among the degree programmes and what their recommendations were on degree programmes as concerns student socio-economic status and gender. Additional information investigated from the academic staff was on similarities and differences in teaching the two platforms across the various degree programmes in the respective universities.

iii) Interview Schedule

Other sets of research instruments were interview schedules, administered to university administrators, policy makers including CHE, MoE and JAB officers and education experts; KIPPRA, IPAR, Rockefeller, World Bank and Ford Foundation. The mentioned institutions provided their views on university education and student issues including their role in university education of the undergraduate degree programmes.

The interviews were conducted face-to-face to policy makers and education experts. These were a category of respondents, who operated under tight work schedules and their interviews were mostly done through arranged appointments. Specifically important to this study were the equity dimensions in the regular and parallel degree platforms, recommendations to enhance equity in the two platforms for the development of university education in Kenya.

3.6.2 Document Analysis Guide

Analysis and scrutiny of existing and documented information was conducted to assist in enriching the primary data from fieldwork. Documentary analysis is a method of collecting information through desk research, where a researcher reads through and analyses documents to select relevant data for a particular study. In this study, document analysis was useful since it enhanced the process of collecting accurate data that was possible to gather through primary procedures (questionnaires and interview schedule). Study hypotheses number 1 and 2 were tested using existing enrolment figures from secondary data. The source of information helped in investigating equity indicators that were used to analyse operationalisation of the study variables (student's socio-economic status, gender equity, degree programme equity and

institutional equity) at individual university level. Equity indicators that were investigated were based on the records of the following documents:

i) JAB admission records

Criteria of admission to parallel and regular platforms, through JAB and deans committees: The study undertook the analysis of existing documents on admissions by respective university for, (Deans committee admissions of the parallel platform and JAB admission records for the regular students). The analysis also considered such issues as entry qualifications and course choice.

ii) Enrolment records by public university

Analysis was conducted on total enrolment of undergraduate students between academic years 2000 to 2006 for both parallel and regular platforms across all years (1^{st} – 6^{th} years). Further analysis was done by gender and degree programme in Moi, Nairobi and KU separately. The enrolment data provided data used for testing hypotheses 1 & 2. The comparative analysis was done among the three public universities by platform, gender and degree programme.

3.7 Instrument Validity and Reliability

3.7.1 Validity

According to Gay (1976), validity refers to the degree to which an instrument measures what it is supposed to measure for a particular purpose and group. The instruments for this study were validated through application of content validity, which was determined by expert judgement and then exposed to a pilot study. Moser and Kalton (1997) identified that content validity is a matter of judgement by the researcher and professionals. This study established validity of the instruments by seeking expert opinion through discussions, observations, comments and suggestions.

3.7.2 Reliability

Reliability refers to the degree to which an instrument consistently measures whatever it measures and is expressed numerically, usually as a coefficient (Gay, 1976). In this study, reliability of the instruments was established through piloting to enable it yield

same results at different times it was administered. Piloting assisted in determining ambiguities in the questionnaire items and also ensured the instrument elicited the type of data anticipated and resulted to meaningful analysis of the final data collected. A total of 34 participated in the piloting study. Twenty (20) undergraduate students, five (5) academic staff, five (5) administrative staff of Kenyatta University, two (2) from World Bank and Rockfeller and two (2) education experts participated in the pilot study.

Split-half coefficient of internal consistency was used and correlation of Spearman Brown Prophecy Formula was applied to calculate the coefficient to determine the reliability of the instruments (Gay, ibid). Split-half is a type of reliability based on the coefficient of internal consistency of a questionnaire as a research instrument. It divides the instrument into two equal comparable halves, in terms of even and odd numbers after it has been administered. In this study, split-half technique of correlation was applied for the respondents separately. The formula is:

$$r \text{ total test} = \frac{2r \text{ split half}}{1 + r \text{ split half}}$$

Each student, academic staff and university administrators' scores was ranked. The scores for even and those for odd numbered items were added separately for the respondents. The reliability of the student questionnaires was 0.7. This figure conforms to the acceptable range of any value beyond 0.6.

3.8 Piloting

Prior to data collection, a pilot study was carried out in Kenyatta University. KU was purposively selected for piloting as a matter of interest as well as accessibility and financial considerations. It allowed for speedy conduct of the pre-testing, being one of the well established universities and whose structures the researcher was familiar with.

However, respondents involved in the pilot study did not participate in the actual study to avoid biasness and any preconceived opinions. The research instruments were piloted and subsequently modified. Piloting of the instruments also served to determine content validity other than expert judgement. A total of thirty four (34) respondents; twenty (20) students, five (5) academic staff, five (5) university administrative staff and two (2) from (policy makers), including two (2) education

experts, randomly selected formed the group of piloting respondents. Approval of the instruments by expert professors and lecturers of education was sought. They too evaluated the instruments to determine their reliability and validity.

3.8.1 Piloting Procedure

Piloting procedure entailed mainly the process that encompassed the actual testing of the study instruments. A total of 34 respondents were used in testing the questionnaires. Separate questionnaires used in the actual study were administered to students, university academic and administrative staff and education experts during piloting. The respondents were randomly selected using a screener (recruitment questionnaire) to establish their eligibility for the piloting. The main themes on the screener included all in the first part of the research instruments appearing in the appendixes 1 - 4 of this document as background information. The whole process included briefing on the research study, screening and administering the questionnaires, which was conducted face to face either on the spot or by appointment where necessary.

In order to learn more from the pilot exercise, the respondents' reactions to the research instruments were analysed along with those from the interviewees. A discussion was conducted with the researchers supervisors, based on the feedback of the piloting exercise and amendments made appropriately. Having made these amendments, the researcher was assured that the questionnaires piloted and then modified appropriately, provided a sound base for a full-scale study that was later successfully conducted.

3.9 Data Collection Procedure

On approval of the research study by the supervisors and prior to commencement of data collection, the researcher forwarded a written application to the Office of the President, through the Ministry of Education for authority to conduct fieldwork. Once the permit was issued, recruitment of two (2) research assistants was conducted. The research assistants were distributed, one each for Kenyatta and Nairobi universities. Fieldwork for Moi University was conducted by the researcher. A one-day training and briefing of the research assistants on the instruments was conducted by the researcher to enhance understanding of the study on the basis of purpose,

methodology and how to administer the research instruments. Conducting dummies of the instruments by the research assistants was done, that helped them in familiarising with questionnaires and also for quality control purposes.

Required copies of research instruments were made and distributed to the two research assistants. The researcher commenced administration of the research instruments in Kenyatta and Nairobi, followed by Moi, in liaison with the research assistants whose main tasks were to administer questionnaires, collect completed questionnaires particularly in cases where the instruments were not administered on the sport by the researcher. The researcher administered all the questionnaires in Moi University and conducted one-to-one interviews personally. Questionnaire administration was rotational among the universities including the five organisations representing policy makers and education experts. On the basis of administering interviews as well as questionnaires, appointments were arranged where necessary at the convenience of the respondent. The researcher team were involved in back-checking of the questionnaires on a daily basis as they were brought in for completeness and editing purposes and this allowed the fieldwork to be completed within the stipulated time.

Once the data collection was over, all the completed questionnaires, interview guides, field notes and reports by researcher, research assistants on their general observations and impressions were being put together under the custody of the researcher in preparation for analysis. The response rates across the different sets/groups of respondents were adequate. Nairobi and Kenyatta students recorded 100% response while Moi was 97.8%. For university administrative staffs, the total reached were: Nairobi 71.4%, Kenyatta 87.5% and Moi 90.9% whereas academic staffs were 96.7%, 77.4%, 93.8% for Nairobi, Kenyatta and Moi respectively. A total of 7 (88%) out of the eight (8) education experts and policy makers were reached.

3.10 Method of Data Analysis and Presentation

Kerlinger (1973) presents data analysis as categorising, ordering, manipulating and summarising of data to obtain answers to research questions. Data analysis for this study was done both quantitatively and qualitatively. The process of data preparation and analysis was as outlined: Validation, editing and coding. In the coding process, uniform categories of responses were identified and classified into code numbers

already assigned to the questionnaires. They were then reviewed and specific responses fed into appropriate category in computer worksheet into Statistical Package for Social Sciences (SPSS) and Microsoft Excel programme for analysis. SPSS package is known for its efficient ability to handle large amount of data. The computer programme has also a wide spectrum of statistical procedures specifically designed for social sciences. This study used SPSS to derive mean scores and standard deviations for students, university administrative staff and education experts' views on the four variables for this study: gender equity, degree programme equity, socio-economic status and institutional equity.

The method of analysis was based on the type of data that was collected, mainly primary and also secondary data. The data was categorized as either nominal or ordinal in nature with some very few variables measured on a continuous scale. Usually nominal and ordinal data are recorded as the numbers of observations in each category. The analysis therefore became that of qualitative data and hence the call for categorical data analysis. Under this study, the response variables were all categorical with either two or more than two levels while the independent variables were either categorical or continuous such as SES and gender.

In the analysis of contingency Table data, the main questions almost always relate to association between variables or in other words whether there lies any significant independence between variables. The Chi-Square test procedure tabulates a variable into categories and computes a chi-square statistic. This goodness-of-fit test compares the observed and expected frequencies in each category to test either that all categories contain the same proportion of values or that each category contains a user-specified proportion of values (Annette J. Dobson, 1990). In SPSS, the calculated chi yields a series of other statistics that convert the chi into measures of relationships since on its own, it can only show or reveal the existence of an association between two or more variables. These statistics include the likelihood ratio, the contingency coefficient, linear by linear association and continuity correction. In addition, Cramers' V and Phi correlation coefficient was used to indicate the strength of the relationship between the two variables. In the study, the researcher was interested in telling whether there was any association between the student SES and degree platform/gender/degree programme which were all categorical.

Assumptions: The chi-square test of independence is a nonparametric test that does not require assumptions about the shape of the underlying distribution. The data was a random sample. The expected frequencies for each category should be at least 1. No more than 20% of the categories should have expected frequencies of less than 5. In this study, socio-economic status was classified into five groups based on economic and sociological indicators. On the basis of the 1999 population census, (CBS, 2001), indicated that, occupation and lifestyle are related showing that economic and sociological indicators overlap. However this study classified university students by occupation of their parents or guardians only. Occupation determines lifestyle that one lives as well as the income of individuals or households (CBS, 2001). The students were classified into five socio-economic groups as used in the 1999 Population Census Report (namely; AB, C1, C2, D and E, where:

i) AB = fully qualified professionals (senior manager; senior government officer; professor/lecturer/head teacher; owner of large commercial farm).
ii) C1= white-collar skilled worker (middle/junior manager; qualified technician (laboratory/nursing/etc); graduate teacher; owner of medium-sized commercial farm).
iii) C2= skilled manual worker (mechanic/carpenter; foreman/supervisor; clerical worker; non-graduate teacher; owner of small commercial farm).
iv) D= semi-skilled/unskilled manual worker - urban (cooks/servants/maids in up market households/lower-income households; waiters/stewards/barbers/plumbers/etc in large establishments; labourers (urban); informal sector traders/artisans;; waiters/stewards/barbers/plumbers/etc in small establishments).

E= Unskilled manual labourers – rural (irregular unskilled worker with land; unemployed with irregular income; street people; unemployed with no income; irregular unskilled worker with no land). The analysis format that was applied took the trend stated below:

Socio-economic status: versus parallel, regular, gender, degree platform, UoN, KU, Moi

Gender : versus parallel, regular, socio-economic status, degree programme, UoN, KU, Moi

Degree programme : parallel versus regular, socio-economic status, gender, UoN, KU, Moi

Institution/university : versus parallel, regular, socio-economic status, gender and degree programme

Implications of equity dimensions on university education identified in the study were discussed. This study involved a wide spectrum of stakeholders that gave it a "good fit" for a descriptive study, which determined where there were significant differences in the different categories of equity variables and where there were none on public university education.

3.10.1 Hypothesis testing

The hypotheses were subjected to the corresponding method of analysis as shown in Table 3.6. The justification for the choice of statistics in analysing the hypotheses is presented in the matrix below.

Table 3.6: Hypotheses and the Corresponding Statistical Analysis Matrix

Hypothesis	Statistic	Rationale
There is no significant difference in the number of male and female undergraduate students enrolled in parallel and regular study platforms	Chi square	Cramers' V and Phi are correlation coefficients for nominally scaled variables, analysis done based on secondary data.
There is no significant difference in public universities in the proportion of undergraduate students enrolled in the regular and parallel study platforms by degree programmes	Chi square	=do=
There is no significant difference in socio-economic backgrounds of students in parallel and regular study platforms.	Chi square	Was easily cross-tabulated and were nominally scaled.
There is no significant difference in student gender, socio-economic background and the study platform chosen	Chi square	=do=
There is no significant difference in student distribution in degree programmes by gender and socio-economic background.	Chi square	=do=
There is no significant difference in student gender, socio-economic background and preference of the degree programme chosen.	Chi square	=do=

Analysis of the Hypotheses 1 and 2 were done on the basis of secondary data

i) Application of Chi Square Statistic in Testing of hypotheses using Secondary Data

In this study, Hypotheses one (1) and two (2) were tested on the basis of secondary data on student gender disaggregated enrolments in the three public universities that were selected for the study. Testing of the other hypotheses 3, 4, 5 and 6 were based on automatic computations of the parameters generated from the SPSS programme

a) Computations of χ^2 Statistic (David & Ryan, 2006)

For a contingency Table that has *r* rows and *c* columns, the chi square test can be thought of as a test of independence. In a test of independence the null and alternative hypotheses are normally as follows:

Ho: The two categorical variables are independent.

Ha: The two categorical variables are related.

In general, the chi-square statistic (χ^2) can be computed using relation, χ^2 = the sum of all the $(fo - fe)^2 / fe$, where:

fo denotes frequency of observed values

fe is the frequency of the expected values.

Table 3.7 outlines the observed values (O) in a three by three contingency Table.

Table 3.7a: Hypothetical distribution of observed values

	Category I	Category II	Category III	Row Totals
Sample A	A	b	c	a+b+c
Sample B	D	e	f	d+e+f
Sample C	G	h	i	g+h+i
Column Totals	a+d+g	b+e+h	c+f+I	a+b+c+d+e+f+g+h+i=N

Source: (David & Ryan, 2006)

b) Chi-Square Computation Methods:

i) Computing Chi-square statistic for a 2x2 contingency Table using the formula method as was applied in the study

For a 2x2 contingency Table of distributions of the type shown in Table 3.7 (b) below, the following formula was applied to compute the associated Chi-square statistic value:

Table 3.7b: Hypothetical distributions on a 2x2 contingency Table

	Category I	Category II	Total
Sample A	A	B	(a+b)
Sample B	C	D	(c+d)
Total	(a+c)	(b+d)	N= (a+b+c+d)

Source: (David & Ryan, 2006)

Chi square $(\chi^2) = \frac{(a+b+c+d)\,[ad - bc]^2}{(a+b)\,(c+d)\,(b+d)\,(a+c)}$

Computations of the chi-square statistic value for hypothesis one of the study were done using the above formula

ii) Computing Chi-square statistic for a higher order contingency Table (e.g. 2x3): The Expected value Method (Applied in Hypothesis Two of the Study)

For higher order contingency Tables, the formula method used in Table 3. 7 (b) above is not applicable hence a different procedure (the Expected Value Procedure) is used to compute the associated Chi-square statistic values.

In the calculation of the expected values (E) for each cell in a higher order contingency Table (e,g. 2x3, 3x3) like in Table 3.7 (a) above, the following relation was used:

Expected Value (E) = Row total times the column total divided by the grand total (N). For example for cell (a), the expected value would be (a+b+c) (a+d+g)/N.

Once the expected values were calculated from observed values of each cell as shown on Table 3.7 (a), the quantities for every cell were generated using the formula: $(O - E)^2/ E$. The chi-square statistic for entire distribution was thus computed as an arithmetic sum of $(O - E)^2/ E$ values for every cell that is $\chi^2 = \sum (O - E)^2/ E$.

Table 3.8 Chi-square computation Procedure

Observed (O)	Expected (E)	|O - E|	$(O - E)^2$	$(O - E)^2/ E$
A	$\frac{(a+b+c)(a+d+g)}{N}$	$a - \left\{\frac{(a+b+c)(a+d+g)}{N}\right\}$		
B	$\frac{(a+b+c)(b+e+h)}{N}$	$b - \left\{\frac{(a+b+c)(b+e+h)}{N}\right\}$		

Source: (David & Ryan, 2006)

iii) Use of critical values on x^2 Tables in Hypothesis Verification

Using the computed Chi square statistic ($\chi^2 = \sum (O - E)^2/ E$), a predetermined alpha level of significance (usually 0.05), and the computed degrees of freedom (df), a decision can be made to accept a null hypothesis (rejection of alternative hypothesis) or rejection of the null hypothesis (acceptance of the alternative hypothesis). For the cases of Hypotheses 1 and 2, these decisions depended on the comparison between the computed Chi-square value and the critical value on the chi-square Tables under the chosen alpha (α) value.

CHAPTER FOUR

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter outlines the study findings, sets out the presentation of results and analysis including their discussion within the framework of the set study objectives and hypotheses. A detailed account and discussion of the hypotheses test results have been provided as well as the background to the observed trends and discussions on equity implications of these results. Further, other related findings from the study with equity implications on access to university education in public universities have been discussed. Additionally; the focus of the study findings is based on the overall purpose of the study that was set to explore equity dimensions in parallel and regular undergraduate degree programmes in public university education. Further attempt is made to address the set study objectives which were:

1). To establish differences in student enrolment across regular and parallel undergraduate study platforms by gender and socio-economic background.

2). To determine differences in student enrolment across undergraduate degree programmes by gender and socio-economic background.

3) To determine relationship among gender, socio-economic background, study platform and preference for degree programme.

4) To explore the perceptions of regular and parallel students, lecturers and education experts on equity issues in the undergraduate degree programmes in public universities in Kenya.

5). To draw implications for higher education policy in Kenya based on the study findings.

The data collected and used in this study were both quantitative and qualitative. Questionnaires were administered to 391 parallel and regular degree students in three public universities namely the University of Nairobi, Kenyatta University and Moi University. Sets of questionnaires were also administered to 271 academic staff in the same universities. Interviews with respondents in six (6) other institutions including university management were conducted. These institutions included the

Ministry of Education (MoE), CHE, IPAR, KIPPRA, JAB, Rockfeller and the Ford Foundation.

Data collected was fed into the computer and analysed using the Statistical Package for Social Sciences (SPSS) programme. Six study hypotheses were investigated which stated that:

1) There is no significant difference in the number of male and female undergraduate students enrolled in parallel and regular study platforms
2) There is no significant difference in public universities in the proportion of undergraduate students enrolled in the regular and parallel study platforms by degree programmes
3) There is no significant difference in socio-economic backgrounds of students in parallel and regular study platforms.
4) There is no significant difference in student gender, socio-economic background and the study platform chosen
5) There is no significant difference in student distribution in degree programmes by gender and socio-economic background
6) There is no significant difference in student gender, socio-economic background and preference of the degree programme chosen.

Findings of the study are analysed and discussed under the following sub headings: (i) Student university entry and enrolment patterns, which covers objectives 1, 2, and 3 (ii) student family backgrounds and distributions across the platforms, which also covers objectives 3, 4 and 5 (iii) Equity dimensions across the parallel and regular undergraduate degree platforms covering objectives 1 – 5.

4.2 Student University Entry and Enrolment Patterns

In this section, key student pre-university entry characteristics are analyzed to determine if there are any major differences or similarities in student secondary school backgrounds between those who enter public universities through the Module I and Module II platforms.

4.2.1 Student characterization by type of secondary school attended

Study results showed that the highest proportion of students (80%), enrolled in Module I and 70% in Module II programmes, were mostly from public schools. However the proportion of Module I students from public schools was about ten percentage points higher than those of Module II students. It is important to note that students formed the majority of respondents. An analysis of their views was therefore done based on their diversified background and experience.

Majority of secondary schools in Kenya are public schools and as such there was almost an equal chance that students entering any of the platforms came from a public school type out of which 86% was from MI and 77% MII. Further the regular platform hosts those who met the minimum university entry cut-off point irrespective of type of school attended. It is mostly those students who never met the minimum regular platform entry cut-off point who seek entry to the parallel platform and majority of this segment also came from public schools.

Table 4.1 shows that the parents or guardians occupation for majority (44%) of students were skilled manual workers while (5%) were unskilled labourers, distantly followed by the semi-skilled/unskilled manual workers in both parallel and regular. Hence, there was a strong indication that minority (4.6%) were unskilled manual labourers. Only (16%) of students said their parents/guardians were in skilled occupations.

Table 4.1 Students' Guardians/Parents professional qualification

	N	%
Fully qualified professionals	63	16.1
White collar skilled worker	55	14.1
Skilled manual worker	173	44.2
Semi-skilled/unskilled manual worker	78	19.9
Unskilled manual labourers	18	4.6
Total	**387**	**98.9**

4.2.2 Student placement in degree programmes

Certain equity dimensions emerged from the student placement patterns in the two platforms. To a large extent this is influenced by the differences in initial student entry conditions for the two platforms that include differences in; the minimum entry

cut-off required, cluster cut –off requirement for degree courses in the two platforms and set pool capacities for programmes in the two platforms. For MI programmes, the first two conditions are usually disproportionately high while the last (degree Programme pool capacity) is usually very small for the very competitive MI courses. The setting of ceilings for these conditions in MII programmes takes a trend that is reverse to those in MI. Table 4.2 show how the students were enrolled in some undergraduate degree programmes in the two platforms. The least undertaken degree programme was agriculture or vet medicine with 5.9%.

Table 4.2: Student's placement in undergraduate degree programme

Degree Programme	n	%
Education	75	19.2
Medicine/other Health Profession	40	10.2
Business Management/Computer Science	77	19.7
Agriculture and Vet Medicine	23	5.9
Social Science/Law	48	12.3
Engineering and either Technical degrees	41	10.5
Arts/Humanities	72	18.4
Total	**376**	**96.3**

4.2.3 Distribution of MI Students by faculty type based on lecturers experiences

Study Findings show that 62% of academic Staff in Art and Social Science based programmes observed that MI programmes in their faculties had high enrolment while 34% of them however reported that student population to be between low and medium as presented in Table 4.3. On one hand, 78% of lectures in Science based programmes observed that their faculties had high MI student populations while 22% indicated that MI student populations in their faculties were between low and medium.

Table 4.3: Lecturers' perception of regular and parallel students' population distribution by faculty type

Faculty Type	Low student population	Medium student population	High student population	Total
Regular Students				
Arts/social science based programmes	30 (23.8%)	18 (14.3%)	78 (61.9%)	126 (100.0%)
Physical/biological science based programmes	17 (12.1%)	14 (10.0%)	109 (77.9%)	140 (100.0%)
Column Sub-Total	**47 (17.7%)**	**32 (12.0%)**	**187 (70.3%)**	**266 (100.0%)**
Parallel Students				
Faculty Type	Low student populations	Medium student populations	High student populations	Row Sub-Total
Arts/social science based programmes	49 (38.9%)	33 (26.2%)	44 (34.9%)	126 (100.0%)
Physical /biological science based programmes	87 (62.1%)	22 (15.7%)	31 (22.1%)	140 (100.0%)
Column Sub-Total	**136 (51.1%)**	**55 (20.7%)**	**75 (28.2%)**	**266 (100.0%)**

For MII programmes, 35% of lecturers in Art and Social Science based faculties reported high student populations, while 65% of them described it as low and medium number of MII students. In the case of parallel programmes, only 22% of the lecturers in Science based programmes indicated that their faculties had high MII students while 62% observed low student numbers in the same faculties.

4.2.4 Choice of degree programmes across the platforms

Since 1991, government policies (under influence from external factors – World Bank), as earlier discussed in both chapters one and two, have had a direct influence on student populations in terms of numbers admitted. The total number of students admitted to public universities under direct government support has been a capped at or about 10,000 students per year. This was intended to control the level of government expenditure on public higher education. Increased admissions would mean higher capitation to public universities.

Viewed against the increasing social demand for university places, the above policy meant that entry into public universities through the government supported regular platform would get increasingly competitive. The increased competitiveness however, resulted in more rigorous requirements for degree programmes offered in the regular platform. In particular the entry cut-off point-index for regular programmes has continued to rise steadily ever since the admission of the first cohort of 8-4-4 KCSE candidates. Table 4.4 below gives the JAB minimum entry cut-off for selected years since 1997.

Table 4.4: JAB Minimum Entry cut-off trends between 1997-2006

Academic year	Cut-off point (COP)	Mean Score (MS)	Mean Grade	Total points (TP)	Cut-off index (COI)*
1996/97	63	7.875	B -	96	0.6563
1997/98	64	8.000	B -	96	0.6667
1999/00	68	8.500	B	96	0.7083
2001/02	68	8.500	B	96	0.7083
2002/03	68	8.500	B	96	0.7083
2003/04	68	8.500	B	96	0.7083
2004/05	68	8.500	B	96	0.7083
2005/06	67	9.571	B+	84	0.7976

Note *COI is worked as the quotient (COP/TP), MS = [COP÷ TP*12] Source: JAB Records 1997-2006

As shown in the JAB entry cut-off index trends above, it is clear that while regular students are subjected to more rigorous entry requirements, those entering parallel degree programmes face less strict conditions of entry. Entry requirement to the parallel platform has remained at C+ since the inception of the programmes in 1998, a platform which was spearheaded by University of Nairobi. In line with these observations, study findings show that there was a significant difference in student opinion on whether the programmes they were pursuing were those they applied for depending on the platform they were pursing their degrees. A higher proportion 120 (69%) of students on the parallel platform reported being in degree programmes of their choice, (58%) of those on the regular platform expressed a similar view. However 54 (31%) of MII students were not admitted in degree programmes of their choice. The findings were not based on the fact the public universities denied these students admission to degree of choice, but on the student's inability to meet cluster requirements was the resultant cause. Module I students dissatisfied with their degree programme was 84 (42%), which was 9% higher than that of Module II, indicating a more disgruntled group of undergraduate students with their current degree programme.

This disparity stems from the fact that at the point of entry, students in the two platforms face different conditions. For regular students, placement into programmes is done by JAB competitively and thus those who do not land on their priority degree courses are later placed into any other available degree programmes as draftees (students who are randomly allocated programmes on the basis of vacant positions and not choice). Parallel degree students on the other hand are admitted by individual universities through the Deans Committees of individual universities, and had less restricted choice of programmes. The students are also given an opportunity to choose what programme they want to enrol for based on their scores in cluster subjects (which in all cases are lower than those for regular platform entry).

The overall picture from the three universities (UoN, KU and Moi), indicate that 42% of MI students felt misplaced as they were pursuing degree programmes they never applied for. This finding points at the fact that MI students are admitted on the basis of meeting the cut–off mark irrespective of the programme applied for or chosen.

Additionally, students on the MI platform were also allowed to change degree programme upon admission as long they met the cluster point criteria.

4.2.5 Students' preferences of degree programmes by study platforms

From the previous discussions it can be expected that student preference levels of the degree programmes they were undertaking would differ significantly depending on the platforms they were on. On the regular platform, 85 (45 %) of students were pursuing degree programmes that they never preferred in the first place whereas only about a quarter 40 (25%) of students on the parallel platform were in the same category. Three in every four 117 (75%) parallel students felt that they were rightly placed because they had the initial opportunity to directly choose what course to register for. The higher proportion of regular students who felt misplaced reflects on the restrictions on degree programme placement that include; fixed pool capacity and high cluster cut-off-points for the regular degree programmes (particularly the competitive courses e.g. medicine, pharmacy, law, engineering, computer science etc).

4.2.6 Undergraduate students entry to university education

A fairly higher proportion 119 (66%) of MII students reported having joined university directly after secondary school. This represents the majority of high school leavers who enter university immediately after sitting their Kenya Certificate of Secondary Education (KCSE) examinations. The 61 (34%) who reported non-direct entry into university were those MII students who either attended other middle level institutions for other pre-under-graduate qualifications commonly known as bridging courses (on whose basis they gained admission into the degree programmes). Others worked or had to wait for parents to source funds to be able to pay for their university education under parallel platform (whose charges are substantially high). A fairly high number of up to 166 (80%) of MI students reported having entered university directly; however for this lot, the majority were those who had not attended other institutions for different programmes before entry to university and that they got admission by JAB. About 42 (20%) of MI and 61 (34%) of MII students reported non-direct entry into university; representing those who either attended other middle level colleges or had an opportunity to work before joining

university. The study results therefore established that majority of both students in the parallel and regular platforms, joined university directly (after KCSE) results with 166 (80%) MI and 119 (66%) MII students indicating the same, and that they did not join any other training institution but the current university where they were undertaking their undergraduate degree programmes.

4.2.7 Student's reasons for non direct entry into university

Table 4.5 outlines the leading reasons for non-direct entry into university for MII students as failure; to meet cut-off point or get into programme/university desired was a total of 23 (34%). Parental inability to finance the students' education immediately after they completed O-level was reported as the second most common reason for non direct entry into university by 34 (31%) of MII students. Other reasons were also provided why both parallel and regular students did not enter university immediately after secondary education graduation.

Table 4.5: Reason for non-direct entry into university by degree Module

Reason	Degree Module		Total
	Parallel/ Module I/SSP/MII	Regular/ Module 1/MI	
Did not meet cut off point	11 (16.4%)	-	**11 (16.4%)**
Did not get into programme/university desired	12 (17.9%)	5 (12.2%)	**17 (15.7%)**
Had to work to earn money to cover university costs	4 (6.0%)	2 (4.9%)	**6 (5.6%)**
Was not interested in University education at that point in time	4 (6.0%)	1 (2.4%)	**5 (4.6%)**
Did not pass KCSE examinations	7 (10.4%)	-	**7 (10.4 %)**
Parents were unable to finance my education then	21 (31.3%)	13 (31.7%)	**34 (31.5%)**
Other reasons	8 (11.9%)	20 (48.8%)	**28 (26.9%)**

Based on their reasons, 20 (49%) of the MI students who cited other reasons for non-direct entry into university were those who identified time lapse between the time they sat KCSE examinations and when they actually entered university, usually ranging from 1½ - 2 calendar years. The students' main reasons were that their parents were unable to finance their university education 21 (31%) and that they did not get admitted into the desired programmes 12 (18%) including the fact that they did not meet the cut-off point 11 (16%). In terms of university admission, with the exception of Jomo Kenyatta

University of Agriculture and Technology (JKUAT), which admits first year students 1½ years after KCSE examinations, all the other public universities admit their students within the last quarter (August-October) of the second year after their KCSE examination year. Historically this delay in the admission of MI students originated from student backlogs that emerged from two double intakes instituted by public universities in the mid 1987/1988 academic years. The equity implication of this tradition is that it has enormous hidden cost implications to the MI students who enter university when probably older than their MII counter parts and at least one year later. This coupled with the attendant long duration taken in pursuit of studies under the MI platform essentially means that students admitted to university under MI platform forego at least three calendar years equivalent of productive working plus any associated benefits with respect to opportunity costs. These exclusions in cost considerations for the two programmes may in the final analysis (if included) show that MI programmes are not after all that "cheap".

Table 4.6 indicates most important reasons that students in the two platforms cited for non-entry into university immediately after completion of KCSE examinations. In the case of both MI and MII students, 11 (20%) and 8 (21.6%) respectively, identified themselves with the fact that their parents were unable to finance their education at that point when they completed their secondary education. However, the main reason for MII students was inability to meet the university cut-off point rated at 15 (27.3%).

Table 4.6: Students' Most important reason cited for non-direct entry into university by platform

	Did not meet the university cut-off point	Did not get into the programme/university desired	Had to work to earn money to cover my university costs	I was not interested in higher education at that point	I didn't pass the university entrance exam	My parents were unable to finance my education at that point	Other reasons	**Total**
Parallel (MII)	15 (27.3%)	8 (14..5%)	10 (18.2%)	1 (1.8%)	3 (5.5%)	11 (20%)	7 (12.7%)	55 (100.0%)
Regular (MI)	-	3 (8.1%)	4 (10.8%)	1 (2.7%)	-	8 (21.6%)	21 (56.7%)	37 (100.0%)

4.2.8 Reasons for non-admission into degree programme of choice by platform

It is shown in Table 4.7 that the highest proportion 41 (72%) of MII students did not get placement into degree programme that they initially preferred, cited having missed the JAB entry cut-off point. Another 11 (19%) however did not get into degree programme of choice because they could not meet the course cluster cut-off points (which for MII programmes are significantly lower than those of MI) for the preferred programme.

Table 4.7: Students' reason for non-admission into degree programme of choice

	(n=391)	Parallel		Regular	
Reason		N	%	n	%
I missed the JAB entry cut off		41	71.9	0	0
I missed the cluster cut off		11	19.3	69	65.7
I was randomly placed in my current programme by JAB		0	0	31	29.5
Other (specify)		5	8.8	5	4.8
Total		**57**	**100.0**	**105**	**100.0**
Other		334		286	

The majority, 69 (66%) of MI students who did not find placement into courses of preference cited having missed the cluster cut – off points (which are usually higher for competitive MI programmes). About 31 (30% felt that they were pursuing courses that they never preferred owing to random placement by JAB.

4.2.9 Student option to pursue current programme elsewhere

Study findings show that the same number, 52 (50%), of both the regular and parallel students would have wanted to undertake their degrees in other institutions other than their own.

The identified significant disparity could be attributed to the fact that about 151 (58.9%) of the regular students indicated no preference to study elsewhere. These were those students who considered their fate sealed once they got admitted to a given public university through JAB. Moreover, in some cases, students who were unsatisfied with the programmes in which they were initially admitted got opportunities later (though restricted) to transfer to other programmes of choice whose cluster cut-offs they met. About 105 (415) of parallel students who reported preference to study elsewhere mainly represented those who probably were enrolled in the other public universities but would have preferred the University of Nairobi.

4.2.10 Students' preferred institution to pursue current degree programme

The most preferred institution was University of Nairobi with 20 (39%) parallel students while regular had 23 (46%) students as shown in Table 4.8. Among the students who wished to undertake their university education elsewhere, particularly UoN, was as a result of its popularity among students largely drawn from the fact that it is the oldest and therefore the more reputable institution of higher learning in the country. Against this background, it may be presupposed that students who preferred it must have had the view that its graduates would be more likely to be favoured by employers at the point of work force recruitment. Table 4.8 shows institutional preference by students among the three universities.

Table 4.8: Ranked distribution of students' preferred institution by Platform

Institution	Parallel (n=391)		Institution	Regular (n=391)	
	n	%		n	%
University of Nairobi	20	38.5	University of Nairobi	23	46.0
Kenyatta University	9	17.3	Other foreign	9	18.0
Other private	9	17.3	Other public	8	16.0
Other foreign	9	17.3	Kenyatta University	4	8.0
Other public	4	7.7	Moi University	4	8.0
Moi University	1	1.9	Other private	2	4.0
Total	**52**	**100.0**	**Total**	**50**	**100.0**
Non-Response	339		Non-Response	**341**	

4.2.11 Rationale for student preference for other institutions

About 30 (68%) of the parallel students who preferred pursuing their studies in other institutions other than the ones they were enrolled in based their preference on the good reputation for offering quality education by the preferred institution. The second most common reason was the students' intent to study within the city of Nairobi, 9 (21%). This represents the lot of students who either wanted to pursue other off-campus obligations like work, complementary studies that could only be exclusively and easily accessed within the city. It further includes those who had spent the better part of their primary and high school years in rural settings (and therefore felt studying in the city would be an exciting stimulus variation). Further analysis was done on reasons why MI and MII students would have preferred to undertake their undergraduate degree programmes in a different university other than the current one. Students from both platforms (68%) reported that, they would prefer universities with good reputation for quality education like the UoN. Other reasons for preference included: to study within the city (21%), to study in university near home (7%), to study in the one offering my programme of choice or one that parents or relatives preferred.

Overall, when the student's reasons were ranked, preference list was topped by good reputation universities, universities situated within cities and distance (universities near student's residence). For the regular students who never preferred studying in other institutions (other than their own), their single most important concern was the fact that their present degree programme was offered only in their current institutions indicated by

12% of the students while 88% provided other diversified reasons, which were less significant.

4.3 Platform Participation by gender and Socio-economic Status

The study was set to find out differences in student enrolment in regular and parallel undergraduate study platforms by gender and socio-economic background as stated in objective. Analyses were based on a comparative assessment of student gender disaggregated distribution trend data for a period between (2001/2002-2004/2005). Secondary data were used for the analysis mainly sourced from the admission records separately for UoN, KU and Moi. Analysis of the variables was done in two levels to determine whether there is any difference between male and female students in the parallel and regular platforms in each university and secondly to establish whether any patterns emerge among the three universities.

Given that male-female proportions of participation are mutually exclusive, analysis in this section focuses on female participation proportions on the two platforms from which male participation proportions are implied. Focus is given to female participation figures for the reason that historically it is them who have suffered gross under representation in higher education. Efforts to address gender equity in participation rates in higher education in the Kenyan situation still has to give greater prominence to improving female participation now and in the foreseeable future. The main thrust of the analysis that follows is to establish whether there has been any significant and consistent change in the gender enrolment proportions in the public universities after the introduction of M II programmes.

i) Kenyatta University

Available secondary data on gender desegregated enrolment in Table 4.9 show that female participation in both platforms at KU has remained consistently lower than those of their male counterparts. The highest female proportion at KU was recorded in the 2001/2002 academic year at 3983 (42.5%) of the entire student population. Since then, MI female student population has gravitated around 3495 (40%). On the other hand MII female student population peaked in 2001/2002 academic year at 1001 (39.9%) declined

to 1669 (22.5%) in 2002/2003 academic year and has since remained at the 1528 (22%) level in 2003/2004.

Table 4.9: Kenyatta university gender disaggregated enrolment figures for academic years 01/02 – 04/05

	Module I			Module II		
Academic Year	M I (M)	M I (F)	T (MI)	MII (M)	MII (F)	**T (M II)**
2001-2002	5384	3983	9367	1447	1001	2448
Male: Female Proportions	57.5%	42.5%		59.1	39.9%	
2002-2003	4972	3329	8301	5765	1669	7434
Male: Female Proportions	59.9%	40.1%		77.5%	22.5%	
2003-2004	5221	3495	8716	5532	1528	7060
Male: Female Proportions	60.0%	40.0%		78.4%	21.6%	
2004-2005	4313	2887	7200	6939	1916	8855
Male: Female Proportions	60.0%	40.0%		78.4%	21.6%	

Source: CHE Records, 2006

In general while MI female participation in KU has remained around the 40% mark, MII female student population continues to oscillate around the 20% mark.

ii) Moi University

As shown in Table 4.10 below MI female student population at Moi University has revolved between 3195 (42.6%) and 3179 (43.9%) between 2001/2002 and 2004/2005 academic years. Female student participation in the MII platform however has been on a general upward trend from 690 (33%) in 01/02 academic year, increasing to 1432 (45.8%) in 03/04 before declining marginally to 2019 (44.8%) in the 04/05 academic year.

Table 4.10: Moi University: gender disaggregated enrolment figures for academic years 01/02 – 04/05

	Module I			Module II		
Academic Year	M I (M)	M I (F)	**T (M I)**	M II (M	MII (F)	**T (MII)**
2001-2002	4066	3179	7245	1403	690	2093
Male: Female Proportions	56.1%	43.9%		67.0%	33.0%	
2002-2003	4086	3195	7281	2188	1354	3542
Male: Female Proportions	56.1%	43.9%		61.8%	38.2%	
2003-2004	4107	3211	7318	1697	1432	3129
Male: Female Proportions	56.1%	43.9%		54.2%	45.8%	
2004-2005	4304	3195	7499	2492	2019	4511
Male: Female Proportions	57.4%	42.6%		55.2%	44.8%	

Source: CHE Records, 2006

Moi university enrolment figures indicated that while overall gender enrolment proportions have remained largely constant in the MI platform, there has been an upward trend in female student enrolments on the MII platform.

iii) University of Nairobi

Table 4.11 shows that female students enrolled in the MI platform was 4450 (33.6%) in 01/02 academic year the proportion reduced marginally to 4428 (32.6%) and 4406 931.5%) in 02/03 and 03/04 academic years respectively before increasing marginally to 5250 (34.5%) in the 04/05 academic year. Female participation in MII programmes at UoN indicated relatively higher proportions compared to those of their MI counterparts. MII female figure have consistently remained at 4820 (42%) since 01/02 academic year declining slightly to 6456 (36%) in the 04/05 academic year.

Table 4.11: University of Nairobi Gender Disaggregated Enrolment Figures for Academic Years 01/02 – 04/05

	Module I			Module II		
Academic Year	M I (M)	M I (F)	**T (M I)**	M II (M	MII (F)	**T (M II)**
2001-2002	8724	4450	13174	6702	4820	11522
Male: Female Proportions	66.2%	33.6%		58.2%	41.8%	
2002-2003	9163	4428	13591	7037	5061	12098
Male: Female Proportions	67.4%	32.6%		58.2%	41.8%	
2003-2004	9603	4406	14009	7389	5314	12703
Male: Female Proportions	68.5%	31.5%		58.2%	41.8%	
2004-2005	9987	5250	15237	11281	6456	17737
Male: Female Proportions	65.5%	34.5%		63.6%	36.4%	

Source: CHE Records, 2006

The UoN enrolment figures also indicated that female student's proportions in MII programmes have remained significantly higher than MI. These observations could be the result of deliberate institutional considerations, female student preferences for MII programmes offered at the university or the institutional location that enables it to attract the majority of the urban female students who did not qualify for MI positions.

Study objective no. 1 was, to establish differences in student enrolment across regular and parallel undergraduate study platforms by gender and socio-economic background. Hypothesis no. 1 **(H_o1)**, was tasted to investigate the objective, which stated that: there is no significant difference in the number of male and female undergraduate students enrolled in parallel and regular study platforms. Secondary data was used to test the hypothesis as outlined in Table 4.12a.

4.3.1. Computation of Chi-square statistic for the distributions: The Formula Method

Table 4.12a shows details of total student enrolments by gender in regular and parallel platforms among the three universities that participated in the study.

Table 4.12a: Aggregation of student distributions by gender and platform at UoN, KU, MOI for the 04/05 Academic year

	Module I			Module II		
	Male	Female	Total	Male	Female	Total
UoN 2004-2005	9987	5250	15237	11281	6456	17737
KU 2004-2005	4313	2887	7200	6939	1916	8855
Moi 2004-2005	4304	3195	7499	2492	2019	4511
Totals	**18604**	**11332**	**29936**	**20712**	**10391**	**31103**

Students' enrolment distributions by gender in the three public universities that took part in the study were used to generate a 2x2 contingency Table for the two random variables namely, gender and platform for the purposes of computations of the χ^2 statistic.

Table 4.12b below provides the resulting 2x2 contingency Table from students' distributions shown in Table 4.12a above. To compute the chi-statistic for this distribution, the formula method was used.

Table 4.12b: The contingency Table for observed values

	Module I	Module II	Row Totals
Male	18604	20712	39316
Female	11332	10391	21723
Column Totals	**29936**	**31103**	**61039 (T)**

$$\text{Chi square } (\chi^2) = \frac{(a+b+c+d)\,[ad - bc]^2}{(a+b)\,(c+d)\,(b+d)\,(a+c)}$$

$$(\chi^2) = \frac{(18604+20712+11332+10391)\,[(18604)\,(10391) - (20712)\,(11332)]^2}{(39316)\,(21723)\,(31103)\,(29936)}$$

$= 131.523$ which is greater than 3.841

Table 4.13: Chi Square distribution Table and Probability level (alpha)

Df	0.5	0.10	0.05	0.02	0.01	0.001
1	0.455	2.706	**3.841**	5.412	6.635	10.827
2	1.386	4.605	5.991	7.824	9.210	13.815
3	2.366	6.251	7.815	9.837	11.345	16.268
4	3.357	7.779	9.488	11.668	13.277	18.465
5	4.351	9.236	11.070	13.388	15.086	20.517

The computed chi square statistic for the distribution in Table 4.13 above is (χ^2 =131.523), our predetermined alpha level of significance (0.05), and our degrees of freedom (df =1). Entering the Chi square distribution Table with 1 degree of freedom and reading along the row, a value of χ^2 (131.523) lies outside (way above) the critical value 3.841. The corresponding probability is $P<0.05$. This is above the conventionally accepted significance level of 0.05 or 5%, hence the null hypothesis that there is no significant difference in the number of male and female undergraduate students enrolled in parallel and regular study platforms was rejected.

4.4: Proportions of students in platforms and degree programmes by public university

Study objective no.2 was to determine differences in student enrolment across undergraduate degree programmes by gender and socio-economic background. The achievement of the objective was based on the test results of hypothesis no. 2 (**Ho_2**), which stated that: There is no significant difference among public universities in the proportion of undergraduate students enrolled in the regular and parallel study platforms by degree programmes. Testing of this hypothesis was done through comparative analysis of student distributions by gender in the three public universities in the study (UoN, KU & Moi) in different degree programmes by platform over the 2003/2004 and 2004/2005 academic years. To help improve quality of comparative assessment, degree programmes offered in the three institutions were aggregated into broad categories of related programmes e.g. engineering and technology degree programmes were categorized under technical degrees. Analyses was done for student proportion trends in each school or college in an individual institution followed by general summary on emerging equity trends in student enrolment proportions by gender and platform.

i) Student distribution in engineering and technical degrees

As shown in Table 4.14a below, female enrolment proportions in Module I architecture and engineering programmes did not exceed 15% for the two academic years. It shows a clear gender equity dimension (inequity) where male students dominate the programmes despite the fact that the parallel platform has opened its doors to all who are able to pay charges for their university education in order to undertake degree courses of their choice. In both MI and MII programmes, male students registered high enrolments, except in BO5 design, where female and males had almost similar ratings at 51 (44.3%) ,64 (55.7%), in MI and 26 (49.1%) , 27 (50.9%) in MII.

Table 4.14a: Gender disaggregated enrolment figures for university of Nairobi: College of Architecture and Engineering 2003/2004

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Architecture	151	86.8	23	13.2	**174**	33	89.2	4	10.8	**37**
B.A. Bachelor of Economics	113	85.6	19	14.4	**132**	10	90.9	1	9.1	**11**
B.A. Land Economics	94	76.4	29	23.5	**123**	10	62.5	6	37.5	**16**
B.A. Design	64	55.7	51	44.3	**115**	26	49.1	27	50.9	**53**
B.A. Urban & Regional Planning	30	66.6	15	33.3	**45**	-		-		-
Bachelor of Science. Civil Engineering	271	85.5	46	14.5	**317**	54	93.1	4	6.9	**58**
Bachelor of Science Electrical Engineering	304	91.0	30	8.9	**334**	143	89.9	16	10.1	**159**
Bachelor of Science Mechanical Engineering	264	94.3	16	5.7	**280**	129	96.9	4	3.0	**133**
Bachelor of Science Surveying	121	85.2	21	14.8	**142**	2	66.7	1	33.3	**3**
Environmental and Bio systems Engineering	134	87.0	20	12.9	**154**	1	100.0	0	0	**1**
College Sub Total	1546		270		1816	408		63		
Percentage by gender	**85.1**		**14.9**		**100.0**	**86.6**		**13.4**		**100.0**

Source: University of Nairobi Admissions Records, 2006

In 2004/2005 academic year at the University of Nairobi, the trend is similar to 2003/2004 academic year with slight changes noticed particularly in BO5-design programme where the total enrolment decreased in MI programme to 96 down from 115 students. Table 4.14b also indicates a tie in enrolment in MII between male and female students, a sign of growth among the female gander compared to other programmes which have rated below average. In the Bachelor of Arts urban and regional planning, female students in MI were about half 23 (34.9%) while their male counterparts were 43 (65.2%) in enrolment.

Table 4.14b: Gender disaggregated enrolment figures for University of Nairobi: College of Architecture and Engineering 2004/2005

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Architecture	139	84.8	25	15,2	**164**	51	89.5	6	10.5	**57**
B.A. Bachelor of Economics	96	86.5	15	13.5	**111**	10	90.9	1	9.1	**11**
B.A. Land Economics	84	77.8	24	22.2	**108**	21	61.8	13	38.2	**34**
B.A. Design	59	61.5	39	40.6	**96**	26	76.5	26	76.5	**52**
B.A.Urban & Regional Planning	43	65.2	23	34.9	**66**	14	82.4	3	17.6	**17**
Bachelor of Science Civil Engineering	285	84.6	52	15.4	**337**	60	92.3	5	7.7	**65**
Bachelor of Science Electrical Engineering	310	89.6	36	10.4	**346**	188	89.9	21	10.0	**209**
Bachelor of Science Mechanical Engineering	254	92.0	21	7.6	**275**	165	96.5	6	3.5	**171**
Surveying	125	85.6	21	14.4	**146**	4	80	1	20	**5**
Environmental and Bio Systems Engineering	151	87.8	21	12.2	**172**	1	100	0	0	**1**
College Sub Total	1546		277		**1823**	540		82		**622**
Percentage by Gender	**84.8**		**14.2**		**100.0**	**86.8**		**13.2**		**100.0**

Source: University of Nairobi Admissions Records, 2006

At Moi University, student enrolment outlined in Table 4.15a show that MI female participation in engineering and technical degrees was at its highest in the 03/04 academic year, scoring (14.5%). In general, however, female participation in this group of degree programmes for both MI and MII platforms has remained at under (10%) in the same university. Moi, similar to Kenyatta and Nairobi offer some degree programmes that are hardly known by the Kenyan public or they would be termed as unpopular courses. Most of such courses in Moi included Biotechnology, Agricultural and Biological Systems recorded '0' enrolment, across the two platforms in 03/04 academic year but showed new entries in enrolment in MI platform in 04/05 academic year.

Table 4.15a: Gender disaggregated enrolment figures Moi University: School of Engineering 2003/2004

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Biotechnology, Civil & Structural Engineering	151	83.4	30	16.6	**181**	2	66.7	1	33.3	**3**
Biotechnology-Production Engineering	157	95.2	8	4.8	**165**	6	100.0	-	-	**6**
Biotechnology –Chemical & Production Engineering	96	81.4	22	18.6	**118**	9	90	1	10	**10**
Biotechnology –Electrical & Communication Engineering	194	95.1	10	4.9	**204**	27	90	3	10	**30**
Biotechnology–Agricultural & Bio Systems Engineering	-		-		**-**	-		-	-	**-**
Biotechnology –Computer Engineering	34	100.0	-	-	**34**	18	100.0	-	-	**18**
Biotechnology-Textile Engineering	120	68.2	56	31.8	**176**	-		-		**-**
School Sub Total	752		126		**878**	62		5		**67**
Percentage by Gender	**85.6**		**14.5**		**100.0**	**92.5**		**7.5**		**100.0**

Source: Moi University Admissions Records, 2006

Comparing enrolment in 2003/2004 and 2004/2005 academic years, Moi University registered some slight shifts as indicated in Table 4.15a and 4.15b respectively. Total enrolment among males in MI increased to 1043 (92.1%) in 04/05 up from 752 (85.6%) in 03/04 academic years. In the MII enrolment in 03/04 and 04/05 academic years, it revolved around the 90% point mark among male students while the female students in he same platform indicated a small increase of .2%.

Table 4.15b: Gender disaggregated enrolment figures Moi University: School of Engineering 2004/2005

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Biotechnology, Civil & Structural Engineering	157	95.2	8	4.8	**165**	8	88.9	1	11.1	**9**
Biotechnology-Production Engineering	198	93.8	13	6.2	**211**	6	100.0	-	-	**6**
Biotechnology –Chemical & Production Engineering	156	88.1	21	11.9	**177**	12	75	4	25	**16**
Biotechnology –Electrical & Communication Engineering	273	94.5	16	5.6	**289**	54	93.1	4	6.9	**58**
Biotechnology–Agricultural & Bio Systems Engineering	30	90.9	3	9.1	**33**	-		-		**-**
Biotechnology –Computer Engineering	71	92.2	6	7.8	**77**	14	93.3	1	6.7	**15**
Biotechnology-Textile Engineering	158	87.8	22	12.2	**180**	1	100.0	-	-	**1**
School Sub Total	1043		89		**1132**	95		10		**105**
Percentage by Gender	**92.1**		**7.9**		**100.0**	**90.5**		**9.5**		**100.0**

Source: Moi University Admissions Records, 2006

In Kenyatta University during academic year 03/04, the School of Pure and Applied Sciences had the majority of technical degree programmes. Table 4.16a shows that female participation in these types of programmes on both MII and MI platforms are significantly low at between 50 (22.9%) and 96 (25.5%) overall. Particular instances of acute female under participation are found in the engineering programmes where female population is in unit figures. The female students registered in MI platform for Bachelor of Science general in KU, were about half 58 (35.4%) compared to that of the males in the same programme at 106 (65%). This scenario was evident in the MII platform where female and male students were at 32 (32.7%) and 66 (67.3%) respectively in the same degree programme

Table 4.16a: Gender disaggregated enrolment figures, Kenyatta University: School of Pure and Applied Sciences

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of science, Computer Science	47	78,3	13	21.7	**60**	48	81.4	11	18.6	**59**
Bachelor of science, Computer Science General	106	64.6	58	35.4	**164**	66	67.3	32	32.7	**98**
Bachelor of science, Telecommunication and Information Technology	24	72.7	9	27.2	**33**	23	88.5	3	11.5	**26**
Bachelor of science, Computer Engineering	32	91.4	3	8.6	**35**	18	94.7	1	5.3	**19**
Bachelor of science, Software Engineering	15	88.2	2	11.8	**17**	7	100.0	-	-	**7**
Bachelor of science, Biotechnology	24	80	6	20	**30**	5	62.5	3	37.5	**8**
Bachelor of science, Medical Laboratory Science	-		-		**-**	1	100.0	-	-	**1**
Bachelor of science, Applied Technology	33	86.8	5	13.2	**38**	-	-	-	-	-
Bachelor of science, Energy Engineering	-	-	-	-	-	-	-	-	-	-
Bachelor of science, Industrial Chemistry	-	-	-	-	-	-	-	-	-	-
Bachelor of science, Analytical Chemistry	-	-	-	-	-	-	-	-	-	-
Bachelor of science, Water Engineering	-	-	-	-	-	-	-	-	-	-
Bachelor of science, Manufacturing Engineering	-	-	-	-	-	-	-	-	-	-
Bachelor of science, Bio chemistry	-	-	-	-	-	-	-	-	-	-
School Sub Total	281		96		**377**	168		50		**218**
Percentage by Gender	**74.5**		**25.5**		**100.0**	**77.1**		**22.9**		**100.0**

Source: Kenyatta University Admissions Records, 2006

In 04/05 academic year, enrolment in both regular and parallel platforms was not different from that of 03/04 academic year among male and female students as outlined in Table 4.16b. More of male students than the female ones were enrolled in most of the programmes. However, minimal increases were observed in MI platform in males' total enrolment 364 (79.1%) in 04/05 up from 281 (74.5%) in 03/04. Overall this female under-representation in these technical degrees is partly as a result the general female under performance in sciences and other technical subjects in KCSE examinations that forms the basis of admission into various programmes.

Table 4.16b: Gender disaggregated enrolment figures, Kenyatta University: School of Pure and Applied Sciences 2004/2005

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T MII)
Bachelor of science, Computer Science	22	68.8	10	3.1	**32**	38	80.9	9	19.1	**47**
Bachelor of science, Computer Science General	110	76.9	33	23.1	**143**	17	80.9	4	19.0	**21**
Bachelor of science, Telecommunication Information Technology	20	90.9	2	9.1	**22**	44	86.3	7	13.7	**51**
Bachelor of science, Computer Engineering	21	87.5	3	12.5	**24**	21	87.5	3	12,5	**24**
Bachelor of science, Software Engineering	20	90.9	2	9.1	**22**	13	72.2	5	27.8	**18**
Bachelor of science, Biotechnology	18	69.2	8	30.8	**26**	9	100.0	-	-	**9**
Bachelor of science, Medical Laboratory Science	17	65.4	9	34.6	**26**	69	79.3	18	20.7	**87**
Bachelor of science, Applied Technology	-		-	-	**-**	-		-	-	**-**
Bachelor of science, Energy Engineering	27	90	3	10	**30**					
Bachelor of science, Industrial Chemistry	26	74.3	9	25.7	**35**	11	64.7	6	35.3	**17**
Bachelor of science, Analytical Chemistry	21	77.8	6	22.2	**27**	-		-		**-**
Bachelor of science, Water Engineering	24	77.4	7	22.6	**31**	-		-		**-**
Bachelor of science, Manufacturing Engineering	38	90.5	4	9.5	**42**	-		-		**-**
Bachelor of science, Bio chemistry	-		-		**-**	23	53.5	20	46.5	**43**
School Sub Total	364		96		**460**	245		72		**317**
Percentage By Gender	**79.1**		**20.1**		**100.0**	**77.3**		**22.7**		**100.0**

Source: Kenyatta University Admissions Records, 2006

ii) Student distribution in Humanities and Social Science programmes

Students' enrolment distribution in this section is discussed in light of the three universities of study. The discussion gives gender and degree programmes priority in identifying equity dimensions. Gender disaggregated data for MI student distributions as shown in Table 4.17 indicate that female participation in MI humanities and social science programmes at UoN was higher compared to those in technical degree programmes.

Table 4.17: Gender disaggregated enrolment figures, University of Nairobi: College of Humanities and Social Sciences (CHSS)

Degree Programmes	2003/2004 Module I/Regular					2003/2004 Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Arts	1624	56.3	1259	43.7	**2883**	501	53.9	428	46.1	**929**
Bachelor of Commerce	741	62.5	445	37.5	**1186**	1085	60.0	723	39.9	**1808**
Bachelor of Law	284	54.2	240	45.8	**524**	473	55.0	387	45.0	**860**
Bachelor of Arts - Anthropology	261	54.5	218	45.5	**479**	5	71.4	2	28.6	**7**
College Sub Totals	2910		2162		**5072**	2064		1540		**3640**
Percentage by gender	**57.4**		**42.6**		**100.0**	**57.3**		**42.7**		**100.0**

Degree Programmes	2004/2005 Module I/Regular					2004/2005 Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Arts	1839	55.3	1485	44.7	**3324**	679	54.0	578	45.9	**1257**
Bachelor of Commerce	750	59.8	505	40.3	**1255**	1144	57.5	846	42.5	**1990**
Bachelor of Law	295	54.3	248	45.7	**543**	343	47.9	372	52.0	**715**
Bachelor of Arts - Anthropology	317	54.4	266	45.6	**583**	21	70.0	9	30.0	**30**
College Sub Totals	8736		4621		**13357**	2287		1805		**3992**
Percentage by Gender	**65.4**		**34.6**		**100.0**	**54.8**		**45.2**		**100.0**

Source: University of Nairobi Admissions Records, 2006

Enrolment in the regular platform on average was generally higher than the parallel one except in the Bachelor of Commerce where UoN had fairly higher numbers among both male and female in the parallel platform. In 03/04, Bachelor of Commerce enrolled 1085 (60%) male and 723 (39.95) female students in the parallel platform, which were higher as opposed to the regular platform that had only 741 (62.5%) males and 445 (37.5%) female students in the same academic year. In 04/05 enrolments for Bachelor of Commerce increased almost by half among male students in the parallel platform as shown in Table 4.17.

Female participation in Humanities and Social Science programmes at KU shown in Table 4.18a give improved female proportions on average for both MI and MII degree programmes with MI programmes having slightly higher female proportions of MI 171 (50%) and MII 52 (44%) in 2003/2004. School of Business had Bachelor of Commerce as the popular programme at KU among male and female students in both parallel and regular platforms. In the regular platform, enrolments for bachelor of commerce were 75 (58.6%) males, 53 (41.4%) females, while the parallel one was 126 (61.2%) males and 80 (38.8%) females in 03/04 academic year.

Table 4.18a: Gender disaggregated enrolment figures, Kenyatta University: School of Humanities and Social Sciences & School of Business 2003/2004

Degree Programmes	2003/2004 Module I/Regular					2003/2004 Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T (MII)
Bachelor of Arts General	163	50.2	162	49.8	**325**	53	58.2	38	41.8	**91**
Bachelor of Fine Art	3	60.0	2	40.0	**5**	2	40.0	3	60.0	**5**
Bachelor of Music	1	33.3	2	66.7	**3**	2	66.7	1	33.3	**3**
Bachelor of Library Science	4	50.0	4	50.0	**8**	8	44.4	10	55.6	**18**
School Sub Total	171		170		**341**	65		52		**117**
Percentage by Gender	**50.1**		**49.9**		**100.0**	**55.6**		**44.4**		**100.0**
School of Business										
	M	5	F	%	T (MI)	M	%	F	%	T (MII)
Bachelor of Human Resource	-		-		-	13	59.1	9	40.9	**22**
Bachelor of Cooperative Management	-		-		-	1	33.3	2	66.7	**3**
Bachelor of Commerce	75	58.6	53	41.4	**128**	112	61.9	69	38.2	**181**
School Sub Total	75		53		**128**	126		80		**206**
Percentage by gender	**58.6**		**41.4**		**100.0**	**61.2**		**38.8**		**100.0**

Source: Kenyatta University Admissions Records, 2006

In 2004/2005 academic years as outlined in Table 4.18b, the trend was the same. Enrolment in the regular platform of male and female students in 04/05 indicated a small gap between the genders. The School of Humanities and Social Sciences registered 146 (46.3%) males and 169 (53.7%) females while parallel platform had 56 (56%) males and 44 (44%) females. The School of Business indicated higher enrolment among male 181 (64.6%) and female students 99 (35.4%) in MII platform in 2004/05 as indicated in Table 4.18b. This is an indication that the parallel platform is gaining popularity however, inequalities exist particularly between male and female students as well as in the degree programmes across the platforms.

Table 4.18b: Gender disaggregated enrolment figures, Kenyatta University: School of Humanities and Social Sciences & School of Business 2004/2005

School of Humanities	2004/2005									
	Module I/Regular					Module II/Parallel				
Degree Programmes	M	%	F	%	**T(MI)**	M	%	F	%	**T(MII)**
Bachelor of Arts General	141	46.7	161	53.3	**302**	47	57.3	35	42.7	**82**
Bachelor of Fine Art	2	66.7	1	33.3	**3**	9	64.3	5	35.7	**14**
Bachelor of Music	1	20	4	80	**5**	-	-	4	100.0	**4**
Bachelor of Library Science	2	40	3	60	**5**	-	-	-	-	**-**
School Sub Total	146		169		**315**	56		44		**100**
Percentage by Gender	**46.3**		**53.7**		**100.0**	**56.0**		**44.0**		**100.0**
School of Business										
Degree Programmes	M	%	F	%	**T(MI)**	M	%	F	%	**T(MII)**
Bachelor of Human Resource	-		-	-	-	31	51.7	29	48.3	**60**
Bachelor of Cooperative Management	-		-	-	-	1	50.0	1	50.0	**2**
Bachelor of Commerce	81		58		139	181	64.6	99	35.4	**280**
School Sub Total	81		58		139	213		129		**342**
Percentage by gender	**58.3**		**41.7**		**100.0**	**62.3**		**37.7**		**100.0**

Source: Kenyatta University Admissions Records, 2006

In the 2003/04 academic year, female total proportions in the MI platform in the School of Arts and Social Sciences at Moi University was 510 (42.6%) but this dropped to 436 (29.4%) in 04/05. MII female population stood at 8 (32%) in 03/04 academic year and then rose significantly to 19 (50%) in 04/05 academic year. Therefore enrolments in the regular platform was still higher in the school of Arts and Social Sciences at Moi University and those for the parallel platform for the same school were almost negligible in a number of programmes as outlined in Table 4.19.

Table 4.19: Gender disaggregated enrolment figures, Moi University: School of Arts and Social Sciences

Degree Programmes	2003/2004									
	Module /Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor-Social Studies	241	58.9	168	41.1	**409**	12	66.7	6	33.3	**18**
Bachelor of Languages & Literature Studies	175	52.7	157	47.3	**332**	5	71.4	2	28.6	**7**
Bachelor of Geography	81	59.6	55	40.4	**136**	-		-		-
Bachelor of Creative &Theatre Arts	42	70.0	18	30.0	**60**	-		-		-
Bachelor of Kiswahili	19	63.3	11	36.7	**30**	-		-		-
Bachelor of Cultural Studies	128	55.9	101	44.1	**229**	-		-		-
School Sub Total	686		510		**1196**	17		8		**25**
Percentage by gender	**57.4**		**42.6**		**100.0**	**68.0**		**32.0**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Social Studies	359	71.7	142	28.3	**501**	14	50.0	14	50.0	**28**
Bachelor of Languages & Literature Studies	327	69.3	145	30.7	**472**	4	57.1	3	42.9	**7**
Bachelor of Geography	133	74.3	46	25.7	**179**	1	33.3	2	66.7	**3**
Bachelor of Creative &Theatre Arts	41	68.3	19	31.7	**60**	-		-		-
Bachelor of Kiswahili	21	53.8	18	46.2	**39**	-		-		-
Bachelor of Cultural Studies	168	71.8	66	28.2	**234**	-		-		-
School Sub Total	1049		436		**1485**	19		19		**39**
Percentage by gender	**70.6**		**29.4**		**100.0**	**50.0**		**50.0**		**100.0**

Source: Moi University Admissions Records, 2006

Table 4.20b shows female participation in the Law degree programme at 71 (36.8%) in 2003/04 for the MI platform in Moi University, showed a marginal improvement to 102 (39.1%) in 04/05. These proportions were significantly lower than those of MII platform at 87 (47.8%) in 03/04 and 135 (56.2%) in 04/05. In particular, the 04/05 female proportion of 56.2% in the law programme indicates that during the same period, female student enrolment had surpassed those of their male counterparts.

Table 4.20: Gender disaggregated enrolment figures, Moi University: School of Law

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Laws (LLB)	122	62.2	71	36.8	**193**	95	52.2	87	47.8	**182**
School Sub Total	122				**193**			87		**182**
Percentage by gender	**63.2**		**36.8**		**100.0**	**52.2**		**47.8**		**100.0**
				2004/2005						
Bachelor of Laws (LLB)	159	60.9	102	39.1	**261**	105	43.8	135	56.3	**240**
School Sub Total	159		102		**261**	105		135		**240**
Percentage by gender	**159**	**60.9**	**102**	**39.1**	**261**	**105**		**135**		**240**

Source: Moi University Admissions Records, 2006

Moi University's data for the School of Business and Economics outlined in Table 4.21 shows that proportions of female presence on the MI platform oscillated between 265 (34.5%) and 327 (33%) for the two academic years under consideration slightly lower than female proportions in MII platform at between 130 (41.5%) and 156 (47.9%). Male student participation in both MI and MII platforms were higher, averagely at 501 (65.5%) and 765 (58.5%) in 03/04 academic year while in 04/05 it declined to 664 (675%) and 170 (52.1%)

Overall, student distributions by gender, degree programme and platform across all the three universities indicated that female participation in MII in Humanities and Social Science degree programmes was significantly higher than in MI programmes.

Table 4.21: Gender disaggregated enrolment figures, Moi University: School Name: School of Business & Economics

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Business Management	225	67.2	130	36.6	**355**	152	61.0	97	38.9	**249**
Bachelor of Tourism Management	95	68.3	44	31.7	**139**	16	53.3	14	46.7	**30**
Bachelor of Hotels & Hospitality Management	13	43.3	17	56.7	**30**	6	33.3	12	66.7	**18**
Bachelor of Tourism & Tourism Operations	13	43.3	17	56.7	**30**	3	42.9	4	57.1	**7**
Bachelor of Economics	134	74.4	46	25.6	**180**	6	85.7	1	14.3	**7**
Bachelor of Science Agricultural Economics & Management	21	67.7	10	32.3	**31**	-	-	2	100.0	**2**
School Sub Total	501		264		**765**	183		130		**313**
Percentage by gender	**65.5**		**34.5**		**100.0**	**58.5**		**41.5**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Business Management	249	62.2	127	37.8	**376**	140	59.6	95	40.4	**235**
Bachelor of Tourism Management	106	70.1	45	29.8	**151**	20	34.5	38	65.5	**58**
Bachelor f Hotels & Hospitality Management	35	58.3	25	41.7	**60**	4	18.2	18	81.8	**22**
Bachelor of Tourism & Tourism Operations	34	54.9	28	45.2	**62**	2	100.0	-	-	**2**
Bachelor of Economics	168	71.8	66	28.2	**234**	1	33.3	2	66.7	**3**
Bachelor of Science Agricultural Economics & Management	72	66.7	36	33.3	**108**	3	50	3	50	**6**
School Sub Total	664		327		**991**	170		156		**326**
Percentage by gender	**67.0**		**33.0**		**100.0**	**52.1**		**47.9**		**100.0**

Source: Moi University Admissions Records, 2006

iv) Student distributions in Agriculture and related programmes

During academic years 2003-2005 outlined in Table 4.22, MI platform female enrolment remained under (25% - 264, 285 students). The foregoing observation partly results from traditional and stereotypical tendencies where most of the programmes offered by the College of Agriculture and Veterinary Medicine at the University of Nairobi had been viewed by female students as largely masculine professions. However, in the MII platform in 04/05 academic year, there was a slight increase in enrolment among the female students at 95 (51.4%) up from 57 (48.3%) while that of males dropped to 90 (49%) down from 61 (52%). However the male students in both MI and MII platforms in 03/04 academic year maintained enrolment in the (75%) mark with 819 and 892 students respectively.

Table 4.22: Gender disaggregated enrolment Figures, University of Nairobi: College of Agriculture and Veterinary Medicine

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of science Agriculture	319	72.0	124	27.9	**443**	-	-	-	-	-
Bachelor of science Food Science &Technology	86	75.4	28	24.6	**114**	2	25	6	75	**8**
Bachelor of science Range Management	83	74.1	29	25.9	**112**	-	-	-	-	-
Bachelor of science (Agricultural Education & Extension)	21	84	4	16	**25**	-	-	-	-	-
Bachelor of science Agricultural & business Management	21	77.8	6	22,2	**27**	-	-	-	-	-
Bachelor of Veterinary Medicine	283	79.5	73	20.5	**356**	14	77.8	4	22.2	**18**
Biomedical Laboratory Technician	-	-	-	-	-	27	49.1	28	50.9	**55**
Bachelor of Wildlife & Range Management	-	-	-	-	-	18	48.6	19	51.4	**37**
College Sub Totals	813		264		1077	61		57		118
Percentage by gender	**75.5**		**24.5**		**100.0**	**51.7**		**48.3**		**100.0**

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of science Agriculture	316	72.8	118	27.2	**434**	-	-	-		-
Bachelor of science Food Science &Technology	82	73.2	30	26.8	**112**	5	33.3	10	66.7	**15**
Bachelor of science Range Management	82	73.9	29	26.1	**111**	-	-	1	100.0	**1**
Bachelor of science (Agricultural education. & Extension	47	82.5	10	17.5	**57**	4	26.7	11	73.3	**15**
Bachelor of science Agricultural & business Management	42	80.8	10	19.2	**52**	2	40	3	60	**5**
Bachelor of Veterinary Medicine	323	78.6	88	21.4	**411**	18	75	6	25	**24**
Biomedical Laboratory Technician	-		-		-	40	48.8	42	51.2	**82**
Bachelor of Wildlife Management & Range Management	-		-		-	21	48.8	22	51.2	**43**
College Sub Totals	892		285		1177	90		95		185
Percentage by Gender	**75.8**		**24.2**		**100.0**	**48.6**		**51.4**		**100.0**

Source: University of Nairobi Admissions Records, 2006

Female student proportions in KU's School of Environmental and Human Sciences indicated in Table 4.23 shows an improved participation with particularly higher female participation proportions across the platforms. For the academic year 2003/04, MI platform enrolment was 121 (61%) and MII 73 (76%), an indication of a higher participation. In the year 2004/05, MI was about 118 (49%) while MII was 93 (66%), indicating a drop but still breaking even with their male counterparts in the MI platform. On the other hand, male proportions that were taking programmes in the MII platform were uncharacteristically low (under 40% - 23 and 48 students) in 03/04 and 04/05 academic years.

The overwhelming female proportions on the MI and MII platforms is partly drawn from the fact that most programmes offered by the school of Environmental and Human Resources are those that have been historically viewed as feminine in nature.

Table 4.23: Gender disaggregated enrolment figures, Kenyatta University: School of Environmental and Human Sciences

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of science Finance &Development	13	29.5	31	70.5	**44**	4	11.1	32	88.8	**36**
Bachelor of science Family & Cons. Sciences	-	-	8	100	**8**	-	-	1	100	**1**
Bachelor of science Textile Science & Design	-		12	100	**12**	-	-	2	100	**2**
Bachelor of science Hotel, Restaurant & Institutional Management	24	63.2	14	36.8	**38**	10	27.8	26	72.2	**36**
Bachelor of Environmental Studies Planning and Management	16	48.5	17	51.5	**33**	2	28.6	5	71.4	**7**
Bachelor of Environmental Studies Communication & Development	11	44	14	56	**25**	1	25	3	75	**4**
Bachelor of Environmental Studies Resources Development	13	34.2	25	65.8	**38**	6	60	4	40	**10**
Bachelor of Environmental Studies Science	-		-		**-**	-		-		**-**
School Sub Total	77		121		**198**	23		73		**96**
Percentage by gender	**38.9**		**61.1**		**100.0**	**24.0**		**76.0**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of science Finance &Development	13	38.2	21	61.8	**34**	3	5.9	48	94.1	**51**
Bachelor of science Family & Cons. Sciences	2	25	6	75	**8**	-	-	1	100	**1**
Bachelor of science Textile Science & Design	2	16.7	10	83.3	**12**	1	100	-	-	**1**
Bachelor of science Hotel, Restaurant & Institutional Management	24	68.6	11	31.4	**35**	19	43.2	25	56.8	**44**
Bachelor of Environmental Studies Planning and Management	16	50	16	50	**32**	17	65.4	9	34.6	**26**
Bachelor of Environmental Studies Communication & Development	25	42.4	34	57.6	**59**	-	-	4	100	**4**
Bachelor of Environmental Studies Resources Development	20	60.6	13	39.4	**33**	2	100	-	-	**2**
Bachelor of Environmental Studies Science	20	74.1	7	25.9	**27**	6	50	6	50	**12**
School Sub Total	122		118		**240**	48		93		**141**
Percentage by gender	**50.8**		**49.2**		**100.0**	**34.0**		**66.0**		**100.0**

Source: Kenyatta University Admissions Records, 2006

Male-female student enrolment proportions in the School of Agricultural Bio-Technology in the MI platform were almost at par in 03/04 academic year as Table 4.24 indicates. However in the 04/05 academic year, the balance of equity in MII student populations were marginal and thus the gender proportions could not be used for comparative analysis.

Male student proportions in the School of Agricultural and Bio-Technology in the MI platform were consistently high with the males dominating up to 415 (72%) % of the positions in 2003/04 academic years. In the MII platform, student population however was marginal and thus the gender proportions could not be used for comparative analysis.

Table 4.24: Gender disaggregated enrolment Figures, Moi University: School of Agricultural Bio Technology

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Science.-Horticultural Science Management.	-	-	-	-	-	2	66.7	1	33.3	**3**
Bachelor of science-Agriculture	23	57.5	17	42.5	**40**	5	100	-	-	**5**
Bachelor of science –Seed Science & Technology	-	-	-	-	-	-	-	-	-	-
Bachelor of Science.-Home Science & Technology	71	49.3	73	50.7	**144**	-	-	-	-	-
School Sub Total	94		90		**184**	7		1		**8**
Percentage by gender	**51.1**		**49.9**		**100.0**	**NA**		**NA**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Science Forestry	97	86.3	45	31.7	**142**	3	75	1	25	**4**
Bachelor of Science. –Wood Science & Technology	85	75.9	27	24.1	**112**	-	-	-	-	-
Bachelor of Science Wildlife Management	130	74.3	45	25.7	**175**	2	100	-		**2**
Bachelor of Science Fisheries	103	71	42	28.9	**145**	-	-	-	-	-
School Sub Total	415		159		**574**	5		1		6
Percentage by gender	**72.3**		**27.7**		**100.0**	**NA**		**NA**		**100.0**

Source: Moi University Admissions Records, 2006

iv) Students' Distributions in Education Programmes

Table 4.25 below shows that the College of Education and External Studies of the UoN registered a fairly high number of female students in MII at 2675 and 3123, both tied at (67%) in 2003/04 and 2004/05 academic years, compared to their female counterparts in the MI that registered 604 (39%) in 2003/04 and 651 (41%) in 2004/05 academic years respectively. The high enrolment recorded among females in MII has surpassed their male counterparts in the same academic years. Comparing the two platforms, enrolment was again higher in MII platform as opposed to MI, a deviation from the routine in public university enrolment, where MI enrolment has always been higher across the board. The MI platform was different in that; enrolment of female students was still very low across the programmes in the College of Education and External Studies as outlined in Table 4.2

Table 4.25: Gender disaggregated enrolment figures, University of Nairobi: College of Education and External Studies

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Education Arts	858	59.2	592	40.8	**1450**	1267	33.1	2571	66.9	**3838**
Bachelor of Education Science	56	82.4	12	17.6	**68**	53	33.8	104	66.2	**157**
Bachelor of Education, other Options	-		-		-	-		-		-
College Sub Totals	914	60.2	604	39.8	**1518**	1320		2675		**3995**
Percentage by gender	**60.2**		**39.2**		**100.0**	**33.0**		**67**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Education Arts	898	58.8	638	41.8	**1526**	1472	33	2988	65	**4460**
Bachelor of Education Science	59	81.9	13	18.1	**72**	69	33.8	135	66.2	**204**
Bachelor of Education other options	-		-		-	-		-		-
College Sub Totals	947		651		**1598**	1541		3123		**4664**
Percentage by gender	**59.3**		**40.7**		**100.0**	**33**		**67**		**100.0**

Source: University of Nairobi Admissions Records, 2006

In Table 4.26, MI platform affirms an almost equal participation between male and female registered at 477 (50.5%) and 467 (49.5%) respectively in 2003/04 academic year. In the MII platform, female student participation was much higher with 406 students rated at (65.6%) than male students at 213 (34.4%). However in 2004/05, the findings showed a drop in enrolment of MII females down to 407 (54.6%) a difference of 11% from the previous year. The results in Table 4.27 portray a staggering enrolment across the degree programmes at Kenyatta University with some indicating '0' enrolment both in MI and MII platforms.

Table 4.26: Gender disaggregated enrolment figures, Kenyatta University: School of Education

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Education Arts	279	47	314	52.9	**593**	84	32.3	176	67.7	**260**
Bachelor of Education Science	168	69.1	75	30.9	**243**	42	35.3	77	64.7	**119**
Bachelor of Education Early Childhood	9	27.3	24	72.7	**33**	10	33.3	20	66.7	**30**
Bachelor of Education Special Education	18	35.3	33	64.7	**51**	60	35.7	108	64.3	**168**
Bachelor of Education Primary	-		-		-	13	43.3	17	56.7	**30**
Bachelor of Education Secondary	-		-		-	1	20	3	80	**5**
Bachelor of Education Guidance &Counselling	-		-		-	1	25	3	75	**4**
Bachelor of Education Library Science	-		-		-	2	50	2	50	**4**
Bachelor of Education Home Economics	3	14.3	21	87.5	**24**	-		-		-
Bachelor of Education Counselling Psychology	-		-		-	-		-		-
Bachelor of Education Library Science	-		-		-	-		-		-
Bachelor of Education Library & Information Science	-		-		-	-		-		-
School Sub Total	477		467		**944**	213		406		**619**
Percentage by gender	**50.5**		**49.5**		**100.0**	**34.4**		**65.6**		**100.0**

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(M)	M	%	F	%	T(MII)
Bachelor of Education Arts	274	50.6	268	49.4	**542**	178	43.8	228	56.2	**406**
Bachelor of Education Science	156	77.6	45	22.4	**201**	131	64.9	71	35.1	**202**
Bachelor of Education Early Childhood	17	56.6	12	41.4	**29**	4	9.8	37	90.2	**41**
Bachelor of Education Special Education	25	47.2	28	52.8	**53**	19		55		**74**
Bachelor of Education Primary	-		-		-	-		-		-
Bachelor of Education Secondary	-		-		-	-		-		-
Bachelor of Education Guidance &Counselling	-		-		-	-		-		-
Bachelor of Education Library Science						-		-		-
Bachelor of Education Home Economics	1	6.3	15	93.7	**16**	-		-		-
Bachelor of Education Counselling Psychology	-		-		-	3	37.5	5	62.5	**8**
Bachelor of Education Library Science	-		-		-	2	18.2	9	81.8	**11**
Bachelor of Education Library & Information Science	-		-		-	1	33.3	2	66.7	**3**
School Sub Total	473		368		841	338		407		**745**
Percentage by gender	**56.2**		**43.8**		**100.0**	**45.4**		**54.6**		**100.0**

Source: Kenyatta University Admissions Records, 2006

In Table 4.27 below, the study findings show that Moi University enrolled more male students totalling 2363 (75%) in the MI platform in 2004/05 academic year than the MII platform in the same year. Female student enrolment in 2004/5 also increased to 352 (58.3%) up from 248 (44.9%) in 2003/04. On average, total enrolments in the school of education increased substantially across all the programmes in the MI platform from 2355 in 2003/04 to 3146 in 2004/05 compared to MII platform that had a difference of 107 additional students in the same academic year.

Table 4.27: Gender disaggregated enrolment figures, Moi University: School of Education

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of Education Arts	904	63.3	523	36.7	**1427**	148	56.7	113	43.3	**261**
Bachelor of Education Science	291	69.1	130	30.9	**421**	69	60	46	40	**115**
Bachelor of Education Early Childhood &Primary Education	24	57.1	18	42.9	**42**	27	39.7	41	60.3	**68**
Bachelor of Education Guidance And Counselling	27	46.6	31	53.4	**58**	35	51.5	33	48.5	**68**
Bachelor of Education Technical Education	228	86.7	35	13.3	**263**	25	86.2	4	13.8	**29**
Bachelor of Education Home Science & Technical Education	71	49.3	73	50.7	**144**	-	-	11	100	**11**
School Sub Total	1545		810		**2355**	304		248		**552**
Percentage by gender	**65.6**		**34.4**		**100.0**	**55.1**		**44.9**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	**TMI**	M	%	F	%	**T(MII)**
Bachelor of Education Arts	1649	77.1	490	22.9	**2139**	84	36.2	148	63.8	**232**
Bachelor of Education Science	286	69.9	123	30.1	**409**	94	57.7	69	42.3	**163**
Bachelor of Education Early Childhood &Primary Education	60	56.1	47	43.9	**107**	54	35.5	98	64.5	**152**
Bachelor of Education Guidance And Counselling	52	47.7	57	52.3	**109**	15	37.5	25	62.5	**40**
Bachelor of Education Technical Education	258	88.7	33	11.3	**291**	5	71.4	2	28.6	**7**
Bachelor of Education Home Science & Technical Education	58	63.7	33	36.3	**91**	-	-	10	100	**10**
School Sub Total	2363		783		**3146**	252		352		**604**
Percentage by gender	**75.1**		**24.9**		**100.0**	**41.7**		**58.3**		**100.0**

Source: Moi University Admissions Records, 2006

Overall female student proportion in education programmes in the three universities in the study was about 604 (39.2%) in UoN, 467 (49.5%) in KU and 810 (34.4%) in Moi for the MI platform during the 2003/2004 academic year. In the 2004/2005 academic year, figures indicate a marginal improvement in female proportion at UoN to 651 (40.7%), a slight decline to 368 (43.8%) at KU and a drastic fall to 783 (24.9%) in Moi. On the other hand, female proportions were higher than those of males at 1545 (65.6%) in KU, attained near parity at 248 (44.9%) in Moi during the 2003/2004 academic year. In the academic year, 2004/2005 however, female student proportions in the MII platform at KU declined significantly to 407 (54.6%) but rose to 352 (58.3%) at Moi to surpass the male enrolment figures.

v) Student Distributions in Health Science Programmes

Generally, Table 4.28 indicates that total enrolment in MI and MII platforms between 2003 and 2005 academic years stabilised with insignificant falls and increases at the UoN. The male students in the MI platform were at (65%) while the female ones were at (35%) in the same platform. In the MII platform, the male students were at (43/44%) mark while the females were at (56/57%) mark. Notably, high enrolments were realised in the bachelor of medicine with female students in MII platform increasing to 586 in 2003/04 up from 378 in 2003/04, surpassing their male colleagues with 499 and 488 in the same period.

Table 4.28: Gender disaggregated enrolment figures, University of Nairobi: College of Health Sciences

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Bachelor of science Biochemistry	4	28.6	10	71.4	**14**	30	49.2	31	50.8	**61**
Bachelor of Medicine	488	69.1	218	59.2	**706**	309	44.9	378	55.0	**687**
Bachelor Science Nursing	70	48.3	75	51.7	**145**	21	26.6	58	73.4	**79**
Bachelor of Pharmacy	128	69.2	57	30.8	**185**	77	40.7	112	59.3	**189**
Bachelor of Dental Surgery	53	61.6	33	38.4	**86**	25	37.9	41	62.1	**66**
College Sub Total	**743**		**393**		**1136**	**462**		**620**		**1082**
Percentage by gender	**65.4**		**34.5**		**100.0**	**42.7**		**57.3**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI	M	%	F	%	T(MII)
Bachelor of science Biochemistry	12	52.2	11	47.8	**23**	50	49.5	51	50.5	**101**
Bachelor of Medicine	449	67.7	214	32.3	**663**	480	45.0	586	54.9	**1066**
Bachelor of science Nursing	66	50.8	64	49.2	**130**	21	27.6	55	72.4	**76**
Bachelor of Pharmacy	132	65.7	69	34.3	**201**	78	41.1	112	58.9	**190**
Bachelor of Dental Surgery	67	72.8	39	42.4	**92**	20	37.7	33	62.3	**53**
College Sub Total	**726**		**397**		**1123**	**649**		**837**		**1486**
Percentage by Gender	**64.6**		**35.4**		**100.0**	**43.7**		**56.3**		**100.0**

Source: University of Nairobi Admissions Records, 2006

Kenyatta University findings showed in Table 4.29 revealed low enrolments in the School of Health Sciences among females in both MI and MII platforms in 2003/04 except for students in MII students during 2004/05, where there was some indication of high enrolment among females at 12 (63%) of combined Environmental Health and Nursing and Public Health students.

Table 4.29: Gender disaggregated enrolment figures, Kenyatta University: School of Health Sciences

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Science Sports Technology	30	60	20	40	**50**	2	100	-	-	**2**
Bachelor of Science Recreation	33	65.3	16	32.7	**49**	1	100	-	-	**1**
Bachelor of Science Clinical Medicine and Surgery	-		-	-	**-**	57	82.6	12	17.4	**69**
Bachelor of Environmental Studies Environmental Health	28	62.2	17	37.7	**45**	5	71.4	2	28.6	**7**
Bachelor of Science Nursing and Public Health	-	-	-	-	**-**	-	-	-	-	**-**
School Sub Total	91		53		**144**	65		14		**79**
Percentage by gender	**63.2**		**36.8**		**100.0**	**82.3**		**17.7**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(M)	M	%	F	%	T(MII)
Bachelor of Science Sports Technology	19	65.5	10	34.5	**29**	-		-		**-**
Bachelor of Science Recreation	11	52.4	10	47.6	**21**	-		-		**-**
Bachelor of Science Clinical Medicine and Surgery	-		-	-	**-**	-		-		**-**
Bachelor of Environmental Studies Environmental Health	40	66.7	20	33.3	**60**	4	57.1	3	42.9	**7**
Bachelor of Science Nursing and Public Health	33	44	42	56	**75**	3	25	9	75	**12**
School Sub Total	103		72		**175**	7		12		**19**
Percentage by gender	**58.9**		**41.1**		**100.0**	**36.8**		**63.2**		**100.0**

Source: Kenyatta University Admissions Records, 2006

The ratio of male to female students in Table 4.30, as established by the study findings is estimated at the ratio of 2:1, representing about 328 (63%) males and 187 (37%) females in 2003/04 academic year. Hence for every three undergraduate students admitted to Moi University School of Medicine, between 2003- 2005 academic years, in both the regular and parallel platforms, two were males and one was female.

Table 4.30: Gender disaggregated enrolment figures, Moi University: School of Medicine

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(M)
Bachelor of Science Nursing	64	53.8	55	46.2	**119**	4	57.1	3	42.9	**7**
Bachelor of Medicine & Bachelor of Surgery (MBCh. B)	225	63.4	130	36.6	**355**	30	65.2	16	34.8	**46**
School Sub Total	289	60.9	185	39.0	**474**	34	64.2	19	35.8	**53**
Percentage by gender	**61.0**		**39.0**		**100.0**	**64.2**		**35.8**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Science Nursing	89	59.7	60	40.3	**149**	8	57.1	6	42.9	**14**
Bachelor of Medicine & Bachelor of Surgery (MBCh. B)	249	66.2	127	33.8	**376**	28	65.1	15	34.9	**43**
School Sub Total	328		187		**525**	36		21		**57**
Percentage by gender	**62.5**		**37.5**		**100.0**	**63.2**		**36.8**		**100.0**

Source: Moi University Admissions Records, 2006

Generally, student gender enrolment proportions for the three institutions in the study, particularly the female enrolment in health science related programmes remained consistently below (40%) for both Modules throughout the two academic years. Table 4.30 shows that there was some exception in the MII platform where female proportion was rated at 36 (63.2%) in 04/05.

Table 4.31 shows that female proportion in the MI platform was 49 (42.2%) in the environmental health programme at Moi University in 2003/04 academic year while there was hardly any enrolment in the MII platform for both male and female in the same period. Academic year 2004/05 indicated increased enrolment in the MI platform to 98 (65.8%) males from 67 (57.8%).

Table 4.31: Gender disaggregated enrolment figures, Moi University: School of Public Health

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T (MI)	M	%	F	%	T(MII)
Environmental Health	67	57.8	49	42.2	**116**	-		-		-
School Sub Total	67		49		**116**	-		-		-
Percentage by gender	**57.8**		**42.2**		**100.0**	**-**		**-**		**-**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module I/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Environmental Health	98	65.8	60	40.3	**149**	2	66.7	1	33.3	**3**
School Sub Total	98		60		**149**	2		1		**3**
Percentage by gender	**65.8**		**34.2**		**100.0**	**NA**		**NA**		**100.0**

Source: Moi University Admissions Records, 2006

vi) Students' distributions in Pure and Applied Science Programmes

Enrolment of the College of Biological and Physical Sciences of UoN outlined in Table 4.32 indicate that male students topped the list by an average of about 1429 (74%) from both MI and MII platforms in 2003/04 and 2004/05 academic years respectively. Female students registered in the two years were only a quarter of the total enrolment in the School. Outstanding enrolment in the College of Biological and Physical Sciences was found in Bachelor of Science which registered a total of 1364 (70.1%) male and 380 (29.9%) female students in MI platform in 2003/04. Enrolment in 2004/05 academic year was still high for the Bachelor of Science in the MI platform but with a minimal drop. The MII platform indicated low enrolment among female students across all the programmes offered in the college with an average of 96 (25.9%) in 2003/04 and an improvement of 213 (28.2%) in 2004/05.

Table 4.32: Gender disaggregated enrolment figures University of Nairobi: College of Biological and Physical Sciences CBPS

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(M)	M	%	F	%	T(MII)
Bachelor of Science Actuarial Science	58	68.2	27	31.8	**85**	95	67.7	45	32.1	**140**
Bachelor of Science Industrial Chemistry	36	78.3	10	21.7	**46**	39	67.2	19	32.8	**58**
Bachelor of Science Mathematics	47	85.5	8	14.5	**55**	2	100	-	-	**2**
Bachelor of Science Meteorology	29	82.9	6	17.1	**35**	2	100	-	-	**2**
Bachelor of Science Biology	28	58.3	20	41.7	**48**	10	50	10	50	**20**
Bachelor of Science .Geology	30	81.1	7	18.9	**37**	1	100	-	-	**1**
Bachelor of Science	984	70.1	380	29.9	**1364**	11	61.1	7	38.9	**18**
Bachelor of Science Statistics	58	76.3	18	23.7	**76**	3	75	1	25	**4**
Bachelor of Science Computer Science	154	90.1	17	9.9	**171**	104	90.4	11	9.6	**115**
Bachelor of Science Micro Process. & Inst.	-		-		**-**	5	62.5	3	37.5	**8**
Bachelor of Science Microbiology & Biotechnology	-		-		**-**	3	100	-	-	**3**
College Sub Totals	1424		493		**1917**	375		96		**371**
Percentage by gender	**74.3**		**25.7**		**100.0**	**74.1**		**25.9**		**100.0**

Degree Programmes	2004/2005									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Science Actuarial Science	49	67.1	24	32.9	**73**	174	67.9	82	32.0	**256**
Bachelor of Science Industrial Chemistry	27	87.1	4	12.9	**31**	54	67.5	26	32.5	**80**
Bachelor of Science Mathematics	49	90.7	5	9.3	**54**	22	78.6	6	21.4	**28**
Bachelor of Science Meteorology	77	79.4	20	20.6	**97**	8	80	2	20	**10**
Bachelor of Science Biology	31	60.8	20	39.2	**51**	20	50	20	50	**40**
Bachelor of Science Geology	61	88.4	8	11.6	**69**	1	33.3	2	66.7	**3**
Bachelor of Science	967	71.5	386	28.5	**1353**	35	62.5	21	37.5	**56**
Bachelor of Science Statistics	52	67.5	25	32.5	**77**	33	89.2	4	10.8	**37**
Bachelor of Science Computer Science	121	86.4	19	13.6	**140**	128	90.1	14	9.9	**142**
Bachelor of Science Micro Process. & Inst.	-		-	-	**-**	56	68.3	26	31.7	**82**
Bachelor of Science Microbiology & Biotechnology	-	-	-	-	**-**	12	54.5	10	45.5	**22**
College Sub Totals	1434		511		**1945**	543		213		**756**
Percentage by gender	**73.7**		**26.3**		**100.0**	**71.8**		**28.2**		**100.0**

Source: University of Nairobi Admissions Records, 2006

In the School of Science at Moi University, male students in both the parallel and regular platforms dominated in the programmes in the two academic years as outlined in Table 4.33. Separately, an average of male students in the MI platform was 688 (77.8%) and females with 196 (22.2%) in 2003/04 academic year. A little drop was realised in 2004/05 academic year in the MI platform for both platforms. The male students dropped by 5.2% while their female counterparts were down by 1.6%. Bachelor of science was again the popular degree programme among male students in the MI platform that registered 644 (77.5%) in 2003/4 and 503 (72.5%) in 2004/05 academic years, far ahead of their female colleagues, revealing the existence of inequity in enrolment in the particular degree programme at Moi university, similar to the situation in Nairobi for the MI platform in the same degree programme.

Table 4.33: Gender disaggregated enrolment figures, Moi University: School of Science

Degree Programmes	2003/2004									
	Module I/Regular					Module II/Parallel				
	M	%	F	%	T(M)	M	%	F	%	TMII
Bachelor of Science, Science	644	77.5	187	22.5	**831**	5	62.5	3	37.5	**8**
Bachelor of Science. Computer Science	44	83.0	9	16.9	**53**	22	62.9	13	37.1	**35**
Bachelor of Science Microbiology	-		-		-	-		-		-
Bachelor of Science Biochemistry	-		-		-	-		-		-
School Sub Total	688		196		**884**	27		16		**43**
Percentage by gender	**77.8**		**22.2**		**100.0**	**62.8**		**37.2**		**100.0**
Degree Programmes	**2004/2005**									
	Module I/Regular					**Module II/Parallel**				
	M	%	F	%	T(MI)	M	%	F	%	T(MII)
Bachelor of Science, Science	503	72.5	191	27.5	**694**	11	64.7	6	35.3	**17**
Bachelor of Science. Computer Science	43	74.1	15	25.9	**58**	13	81.3	3	18.8	**16**
Bachelor of Science Microbiology	14	66.7	7	33.3	**21**	2	28.6	5	71.4	**7**
Bachelor of Science Biochemistry	8	40	12	60	**20**	3	60	2	40	**5**
School Sub Total	568		225		**793**	29		16		**45**
Percentage by gender	**71.6**		**29.4**		**100.0**	**64.4**		**35.6**		**100.0**

Source: Moi University Admissions Records, 2006

In Kenyatta University, the School of Pure and Applied Sciences hosts the majority of technical degree programmes. Table 4.34 shows that female participation in these types of programmes on both MI and MII platforms are significantly low at 142-162 students with a score of (20-25%) during 2003-2005 academic years. Particular instances of acute female under participation are found in the engineering programmes where female population is in unit figures. Overall the incidences female under-representation in these technical degrees is partly as a result the general female under performance in sciences and other technical subjects in O-level examinations that forms the basis of admission into various degree programmes.

Table 4.34: Gender Disaggregated Enrolment Figures, Kenyatta University: School of Pure and Applied Sciences

Degree Programmes	2003/2004						2004/2005					
	Module I/Regular			Module II/Parallel			Module I/Regular			Module II/Parallel		
	M	F	T (MI)	M	F	T(MII)	M	F	T(MI)	M	F	T (MII)
Bachelor of Science Computer Science	47	13	**60**	48	11	**59**	22	10	**32**	38	9	**47**
Bachelor of Science General	106	58	**164**	66	32	**98**	110	33	**143**	17	4	**21**
Bachelor of Science Telecommunication Information Technology	24	9	**33**	23	3	**26**	20	2	**22**	44	7	**51**
Bachelor of Science Computer Engineering	32	3	**35**	18	1	**19**	21	3	**24**	21	3	**24**
Bachelor of Science Software Engineering	15	2	**17**	7	0	**7**	20	2	**22**	13	5	**18**
Bachelor of Science Biotechnology	24	6	**30**	5	3	**8**	18	8	**26**	9	0	**9**
Bachelor of Science Medical Laboratory Science	-	-	**-**	1	0	**1**	17	9	**26**	69	18	**87**
Bachelor of Science Applied Technology	33	5	**38**	-	-	**-**	-	-	**-**	-	-	**-**
Bachelor of Science Energy Engineering	-	-	**-**	-	-	**-**	27	3	**30**			
Bachelor of Science Industrial Chemistry	-	-	**-**	-	-	**-**	26	9	**35**	11	6	**17**
Bachelor of Science Analytical Chemistry	-	-	**-**	-	-	**-**	21	6	**27**	-	-	**-**
Bachelor of Science Water Engineering	-	-	**-**	-	-	**-**	24	7	**31**	-	-	**-**
Bachelor of Science Manufacturing Engineering	-	-	**-**	-	-	**-**	38	4	**42**	-	-	**-**
Bachelor of Science Biochemistry	-	-	**-**	-	-	**-**	-	-	**-**	23	20	**43**
School Sub Total	281	96	**377**	168	50	**218**	364	96	**460**	245	72	**317**
Percentage by gender	**74.5**	**25.5**	**100.0**	**77.1**	**22.9**	**100.0**	**79.1**	**20.1**	**100.0**	**77.3**	**22.7**	**100.0**

Source: Kenyatta University Admissions Records, 2006

Overall, data on enrolment patterns for the three universities in schools and colleges of pure and applied sciences indicate that male students still dominate positions in undergraduate programmes particularly on the MI platform with a participation rate of over 70% in KU and UoN and over 60% at Moi. Female proportions on MII platforms improved marginally to between 35 (37%) in School of Science and 37 (50%) in the school of Information Science at Moi. To follow the descriptive that have been discussed above are the χ^2 test results for hypothesis no. 2

Table 4.35a: Distribution of regular students by gender at UoN, KU and Moi during the 2004/05 academic year

University	Regular /Module I (M I)		
	M	F	T(MI)
UoN	14281	6465	20746
KU	4313	2887	7200
MU	7075	2569	9644
	25669	**11921**	**37590**

χ^2 Test Results

Observed	Expected	|O -E|	$(O - E)^2$	$(O - E)^2 / E$
14281	14166.76	114.24	13050.7776	0.92
6465	6579.22	114.22	13046.2084	1.98
4313	4916.65	603.65	364393.3225	74.11
2887	2283.35	603.65	364393.3225	159.59
7075	6585.58	489.52	239629.8304	36.39
2569	3058.42	489.52	239629.8304	78.38
$X^2 = (O - E)^2 / E$			**351.37**	

Degree of Freedom Df. = (c-1) (r-1) = (2-1) (2-1) = 1
= (2-1) (3-1) = 2

Table 4.35b: Chi Square distribution Table and Probability level (alpha)

Df	0.5	0.10	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827
2	1.386	4.605	**5.991**	7.824	9.210	13.815

The computed chi square statistic for the distribution above is χ^2 =351.37, the predetermined alpha level of significance 0.05, and our degrees of freedom df = 2. Entering the Chi square distribution Table with 2 degree of freedom and reading along the row we find our value of χ^2 = 351.37 lies outside (way above) the critical value 3.841. The corresponding probability is $p<0.05$ which is above the conventionally accepted significance level of 0.05 or 5%. Hence the null hypothesis that states: the distributions of regular students by gender in the three public universities in the study platforms - parallel and regular do not differ significantly was rejected. The implication is that the implementation of the parallel platform hardly enhanced enrolment among the female gender across the three universities and this implies that the status of enrolment showed a situation where male students were averagely enrolled more as it has been in the past, long before the parallel platform

Table 4.35c: Distribution of regular students by gender at UoN, KU and Moi during the 2004/05 academic year

University	Parallel/Module II (M II)		
	M	F	T(MI)
UoN	11281	6456	17737
KU	6939	1916	8855
MU	752	749	1501
	18972	**9121**	**28093**

χ^2 Test Results

Observed	Expected	|O -E|	$(O - E)^2$	$(O - E)^2 / E$
11281	11978.30	697.3	486227.29	40.59
6456	5758.70	697.3	486227.29	84.43
6939	5980.03	958.97	919623.4609	153.78
1916	2874.96	958.96	916604.2816	318.82
752	1013.67	261.67	68471.1889	67.55
749	487.33	261.67	68471.1889	140.50
$\chi^2 = (O - E)^2 / E$				**805.67**

Df = 2

Table 4.35d: Chi Square distribution Table and Probability level (alpha)

Df	0.5	0.10	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827
2	1.386	4.605	**5.991**	7.824	9.210	13.815

The computed Chi square statistic for the distribution above is (χ^2 =805.67), our predetermined a lpha level of significance (0.05), and our degrees of freedom (df =2). Entering the Chi square distribution Table with 2 degree of freedom and reading along the row we find our value of χ^2 (805.67) lies outside (way above) the critical value 5.991. The corresponding probability is P<0.05. This is above the conventionally accepted significance level of 0.05 or 5%, so the null hypothesis that: There is no significant difference among public universities in the proportion of undergraduate students enrolled in the regular and parallel study platforms by degree programmes was rejected.

In general, data for the three institutions in the study indicate acute female under participation in engineering and other technical degrees where they occupy 15% or less of the positions for both MI and MII programmes. Female participation proportions are seen to improve significantly up to 50% or better in art, social science, humanities and education based programmes especially in the MII platform. Gender enrolment proportions further indicate that female participation in health science courses is still significantly lower than that of male students with highest participation rates at only 40% of the entire student population for both MI and MII platforms. Comparatively, the hypothesis was rejected and therefore there were significant differences in gender enrolment proportions in degree programmes across the MI and MII platforms with male students dominating positions on both, thus instances of female domination of positions on programmes was the exception rather than the consistent trend. However, among the three universities (UoN, KU and Moi), the trend between male and female in terms of participation is similar (males have higher participation incidences across degree programmes).

4.5 Student family backgrounds and distributions across the platforms

4.5. 1 Parallel students' parent/guardian's professional qualification

Table 4.36 show that parents/guardians of 76 (43%) students enrolled in parallel degree programmes were found in the upper two job group types i.e. the white collar skilled worker 39 (22%) and fully qualified professionals 37 (21%). In all, 150 (84%) of parents/guardians of students enrolled in parallel degree programmes were concentrated between the upper three job groups (skilled manual workers to fully qualified professionals).

Table 4.36: Distribution of parallel and regular students by parent/guardian's professional qualification

Parent occupation	Parallel/MII		Regular/MI		
	n	%	n	%	Total
Fully qualified professionals	37	20.7	17	8.2	**28.9**
White collar skilled worker	39	21.8	21	10.1	**31.9**
Skilled manual worker	74	41.3	98	47.1	**88.1**
Semi-skilled and unskilled manual worker	26	14.5	46	22.1	**36.6**
Unskilled manual labourers	3	1.7	26	12.5	**14.2**
Total	**179**	**100.0**	**208**	**100**	
Other	212		183		

As shown in Table 4.36, only 29 (16%) of parents to the students enrolled in parallel programmes were found in the two lowest job groups i.e. semi-skilled manual workers 26 (15%) and unskilled manual labourers 3 (2%). These figures indicate that a majority of students in parallel programmes emanate from relatively affluent (middle to upper income) families.

Findings further showed that only 38 (19%) of MI students indicated that their parents were in the upper two job groups compared to 43% for MII student's parents. The upper three job groups together had 136 (66%) of MI parents/guardians compared to 84% for MII parents. While 72 (35%) of MI parents were found in the two lowest job groups, only about half of this proportion (16%) of MII parents was in this category. It is an indication that a clear difference exists between parallel and regular students based on their parents' occupations, and the findings reveal that majority of the students' parents fall in the "skilled manual worker occupation type" 172 (88.4%), for the two platforms

combined and separately (MI 98-47.1% and MII 74-41.3%). From the foregoing discussion, it would be precise to conclude that relatively, a higher proportion of student's parents/guardians in the MII platform would have the economic means to pay for higher tuition and other fees that are characteristic of MII programmes, compared to their counterparts in the MI platform. On the other hand, the significantly stronger presence of parents/guardians of student in the MI platform found in the upper three job groups (66%) could be used as a pointer to the widely held view that it is the children of the relatively financially able parents who end up dominating competitive MI platform programmes in the public universities. This is partly because students from poorer families would end up in poorer secondary schools (even if they performed well in entry exams) and thus failing to qualify for the regular platform.

4.5.2 Students' distributions by family socio-economic status across the platforms

In terms of students SES, study findings revealed that majority 126 (75%), of students in MI platform were from middle income families. The second group of students 34 (19%) in MII platform were those from high-income families. Students in the MII platform from low-income families comprised the lowest proportion at 11 (6%). About one in every four students in the MI platform 54 (25%) were from low-income families. However, 134 (60%) of students MI platform however were from middle income families. On the other hand 29 (14%) of students in the same platform reported being form high income/high middle-income families.

Comparatively while 168 (94%) of MII students reported being from middle to high-income families, 155 (74%) of their MI counterparts reported being from the same background. The single widest inequity existed in the low income bracket in which up to 25% of students in MI platform were found while only 6% of those in MII platform reported being from such family backgrounds. How then can the equity gap be filled? It is evident that those students dominating MII platform are from middle to high-income backgrounds. How will students from low income (poorer than most) compete in the regular platform, leave alone the parallel one?

4.5.3 Lecturers observations on student's socio-economic backgrounds

i) Socio-economic backgrounds of students in the regular platform

Table 4.37 below show that, of the lecturers who took part in the study, only 5 (2%) of them identified that some students on the MI platform came from middle income and high-income families, while 96 (39%) and 78 (32%) of the lecturers observed that students in MI platform were from poor, middle and low income families respectively, and that the students were just struggling to pay their fees. On the other hand, 67 (27%) of lecturers indicated that the MI platform comprised of students from all socio-economic classes.

Table 4.37: Lecturers perceptions of the regular and parallel undergraduate students based on student socio-economic background

	Regular (n=271)		Parallel (n=271)	
Lecturers' Teaching Experience	n	%	n	%
Mostly middle income and high income	5	2.0	239	97.2
Mostly poor and middle income	96	39.0	3	1.2
Low income and poorer	78	31.7	4	1.6
Comprise of all classes	67	27.2	246	100.0
Total	**246**	**100.0**	**25**	
Other	25		271	

ii) Socio-economic backgrounds of students in the parallel platform

A high proportion of lecturers (97%) considered students in MII platform to be mostly from middle to high-income families. However, 1% of lecturers felt that there were cases of students in MII platform from low income (poor) families and were under going very difficult situations to cope with the fee charges in their respective universities.

4.5.4 Sources of tuition fees of students in the regular and parallel platforms

Table 4.38 indicates 152 (83%) of the students enrolled in the MII platform received their tuition fee and other fees from parents or guardians. A total of 28 (11.6%) students were self sponsored. This category of students represents those students in MII platform who were using previous earnings (savings), current earnings (salaries and wages), future

earnings (loans) or a combination of some or all the above sources to finance their studies.

Table 4.38: Students' sources of tuition and fees by Platform

Source	Parallel (n=391)		(n=391)Regular	
	n	%	n	%
Parent and guardian	152	83.3	128	61.2
Self	28	11.6	44	21.1
Other sources	1	6	32	15.3
HELB	-	-	2	1.0
Parent and HELB	-	-	2	1.0
Self and HELB	-	-	1	.5
Total	**181**	**100.0**	**209**	**100.0**
Other	210		182	

Out of 182 students in the M1 platform who participated in the study, 128 (61%) of them received finances for their tuition and other fees for university studies jointly from parents and HELB. In the MI platform, a bout 44 (21%)) however reported receiving their finances singly from HELB. Another 32 (15%) of them received their finances singly from parents/guardians. An additional 5 (3%) of students in the MI platform sourced their finances for tuition from either own sources, self/HELB or other sources.

The above statistics show that higher proportions (83%) of MII students compared to (15%) of MI depended singly on parents or guardians to pay their tuition and other fees. However, the MII programmes have also attracted the employed workers. The emerging scenario further strengthens the case for deliberate attempts to avail financial assistance to MII students who in which case largely depend on parents/guardians (who are likely to be supporting other siblings) to finance their higher education.

i) How students' fathers' level of formal education influence their study platform: Parallel and Regular Platforms

Study findings indicated in Table 4.39 show that 139 (78%) of students in MII platform had fathers who had attained community or technical college education or better. These parents were said to be holders of college diplomas or higher qualifications, which expectedly would position them (other factors constant) for employment types that would qualify them as occupiers of middle to high-income economic groups.

For the students in the MI platform, 125 (60%) of them had parents with a technical college qualification or better, one third of these 45 (22%) being concentrated in the community or technical college category. In the MI platform, about 50 (24%) of the students indicated that their fathers had bachelor degree qualifications or better. Using educational qualifications as a fairly accurate determinant of parental socio-economic status, then up to 60% of MI fathers were potentially to be found in the middle to high income bracket while 78% of MII fathers had the potential to belong to these income categories.

Table 4.39: Students distribution in the parallel and regular platforms by their fathers' level of formal education

Fathers' Level of education	Parallel (n=391)		Regular (n=391)	
	n	%	n	%
PhD	9	5.1	7	3.4
Master's degree	12	6.7	8	3.9
Advanced professional degree	17	9.6	8	3.9
Bachelor's degree	57	32.0	27	13.0
Some community college or university	26	14.6	30	14.5
Community or technical college	18	10.1	45	21.7
Completed high school	8	4.5	31	15.0
Some high school	5	2.8	8	3.9
Completed primary school	6	3.4	13	6.3
Some primary school	7	3.9	20	9.7
None	6	3.4	3	1.4
Don't know	7	3.9	7	3.4
Total	**178**	**100.0**	**207**	**100.0**
Other	213		184	

Coupled with other factors such as income determination, these differentials in father's level of education by platform shown in Table 4.39 above may be seen to approximate the reported proportions of student presence in the two platforms. This largely draws from the observation that while 60% and 78% of MI and MII students respectively indicated that their fathers had college education or better, 74% and 94% of MI and MII students respectively reported coming from middle to high SES families as earlier indicated. A parent's level of education (especially the father's) therefore can be seen to be "a fair" estimator of the student's family income level.

The lower proportions observed for education levels however, help strengthen the assertion that level of education alone would not be the only determinant of earnings, other factors such experience and working years also count. Indeed there are other determinants of individual earnings that on their own have the potential to over shadow the impact of education as a determinant of earnings. Descriptive statistics in Table 4.39 shows that there was a significant difference in the distribution of students by platform in terms of their father's levels of education with the MII fathers dominating the higher qualifications compared to their MI counterparts.

ii) How students' mothers' level of formal education influence their study platform: Parallel and Regular Platforms

Table 4.40 outlines the distributions of students across the platforms by mother's levels of education. However chi-square tests for these inter–platform distributions showed no significant variation in student distributions across the platforms by mothers' level of education.

Table 4.40: Students distribution in the parallel and regular platforms by their mother's level of formal education

	Parallel (n=391)		Regular (n=391)	
Mothers level of education	**n**	**%**	**N**	**%**
Some primary school	12	6.8	21	10.0
Completed primary school	14	7.9	21	10.0
Some high school	12	6.8	18	8.6
Completed high school	17	9.6	33	15.8
Community or technical college	16	9.0	18	8.6
Some community college or university	40	22.6	51	24.4
Bachelor's degree	30	16.9	17	8.1
Advanced professional degree	11	6.2	5	2.4
Master's degree	6	3.4	2	1.0
PhD	-	-	3	1.4
Don't know	9	5.1	7	3.3
None	10	5.6	13	6.2
Total	**177**	**100.0**	**209**	**100.0**
Other	214		182	

4.6 Student distribution in platforms by socio-economic backgrounds

Student's socio-economic backgrounds were investigated to determine whether it had any relationship with the study platforms. Objective no.3 was set to determine relationship among gender, socio-economic background, study platform and preference for degree programme. Three different hypotheses were tasted to investigate this objective. One of them was study hypothesis no. 3 **(H_o3)** that stated: There is no significant difference in socio-economic backgrounds of students in parallel and regular study platforms. To test this hypothesis, Chi-square tests were run on the distributions of the binary combination of student by socio-economic backgrounds in the regular (MI) and parallel (MII) platforms. Test results indicated significant differences (at p value < 0.05 significance level) in the distribution of students on the platforms with students from the more affluent families (middle and high SES) dominating positions on the MII platforms 168 (94%).

In the MII platform, about 11 (6%) of the students said they belonged to low SES families compared to 54 (26%) of the MI students. The proportion of MII students who reported coming from middle SES families were at 134 (75%) and this was fifteen percentage points higher than that of MI student 126 (60%) from the same family background. Further, while 34 (19%) of MII students reported coming from high SES families, 29 (14%) of MI students irrespective of gender came from this background.

Table 4.41: Distribution of students by degree module and family's social economic status

Platform	Low Income poorer than most	Middle Income (same as most)	High income/high middle income (better of than most)	**Total**
MII	11 (6.1%)	134 (74.9%)	34 (19.0%)	**179 (100.0%)**
M I	54 (25.8%)	126 (60.3%)	29 (13.9%)	**209 (100.0%)**
Total	**65 (16.8%)**	**260 (67.0%)**	**63 (16.2%)**	**388 (100.0%)**

The descriptive statistics and the chi-square results attest to the fact that there is a significant difference in the distribution of students across the two platforms. Comparative figures for the presence of students from low SES families across the platforms indicate that while one in every four MI students was from low SES family, only about one in every twenty MII students was from similar family backgrounds. Clearly these results contradict the study hypothesis for the two variables; hence the chi-

square tests showed that there was a significant difference at 0.05 significant level in socio-economic backgrounds of students in MII (parallel) and MI (regular) study platforms, with higher proportions of students from affluent families dominating positions on the MII platform.

4.7 Students distribution in platforms by gender and socio-economic background

Further study findings were also based on objective no. 3 aimed at determining relationship in gender, socio-economic status and study platform chosen. Hypothesis no. 4 (**H_o4**) was tasted and it stated that: There is no significant difference in student gender, socio-economic background and the study platform chosen. Basing the hypothesis on the framework of an association between two premises relating; the binary attribute of gender and SES on one hand and study platform on the other, Chi-square tests were run to show the level of significance of the association between these two variables. A Chi-Square test result of a significance level of 10% or better would illustrate the accuracy in use of the binary attribute of gender to predict student presence on a given study platform. The analysis was done at two levels; one for female and the second one for male, to determine whether being a male or female from a certain family SES predicted the students' study platform.

i) Male student distribution in the platforms by parents' SES

Table 4.42 establishes that, while less than five percent of male students in the MII platform reported to have come from low SES families, almost one in every three male students 30 (29.4%) also indicated similar family backgrounds. The male students in MII platform proportion who came from middle SES families 73 (75%) was fourteen percentage points higher than that of male students in MI platform 62 (61%). On the other hand, while one in every five MII male students reported coming from high SES families, only about one in every ten male students in MI emanated from the same backgrounds.

Table 4.42: Male Student distribution in regular and parallel platforms by parents' SES

	Male from lower SES family	Male from Middle SES family	Male from High SES family	Sub-Total
Parallel	4 9 (4.1%)	73 (74.5%)	21 (21.4%)	98 (100.0%)
Regular	30 (29.4%)	62 (60.8%)	10 99.8%)	102 (100.0%)
Total	**34 (17.0%)**	**135 (67.5%)**	**31 (15.5%)**	**200 (100.0%)**

However the chi-square test results run on gender and SES separately indicated that the main determinant of choice of study platform was SES.

ii) Female student distribution in the platforms by parents' SES

Table 4.43 indicates that about one in every ten female students in the MII platform 7 (8.9%) came from a low SES family background compared to two in every ten female students in MI platform. While some 59 (75%) of female students in MII platform reported coming from middle SES families, their MI counterparts from this background was fifteen percentage points lower 64 (60%). However the proportions of female students enrolled on both platforms reporting coming from high SES family backgrounds only had a marginal difference (MII 13 (17%), MI 19 (18%).

Table 4.43: Female student distribution in MI and MII platforms by parents' SES

	Female from lower SES family	Female from middle SES family	Female from high SES family	Sub-total
Parallel	7 (8.9%)	59 (74.7%)	13 (16.5%)	79 (100.0%)
Regular	24 (22.4%)	64 (59.8%)	19 (17.8%)	107 (100.0%)
Total	**31 (16.7%)**	**123 (66.1%)**	**32 (17.2%)**	**186 (100.0%)**

Chi-square tests results showed that male and female student participation in the two platforms by family SES differed significantly with p value of 0.037 (significant at p=0.05 level), with students from middle and high socio-economic backgrounds dominating positions in both platforms across the gender divide. Additionally, the findings also established that irrespective of gender, the students' presence in any platform is determined by their parents/guardian/family SES and gender on its own cannot determine a student's presence either in MI or MII.

4.8 Student distribution in degree programmes by gender and socio-economic background

Objective no.3 was also set to determine relationship in gender, socio-economic status and degree programme. A second hypothesis developed from it was study hypothesis no. 5 (**H_o5**) which stated: There is no significant difference in student distribution in degree programmes by gender and socio-economic background. Being a statement of association between two variables, this hypothesis was tested using the Chi-Square tests to show the level of significance in the difference (if any) in student distribution in the two degree programme categories of science based and art based programmes by gender and SES. Test results giving significance levels of 10% or better for either gender would lead to the rejection of the hypothesis; however significance levels higher than 10% would lead to acceptance of the hypothesis. Distribution tables that follow give both descriptive statistics and Chi-Square test results for student distributions on the degree course categories by SES for each gender.

i) Male Student distribution by parents' SES and type of degree programme

Table 4.44a shows that majority of male students from each of the SES backgrounds were pursuing art/social science based programmes. On the other hand the proportion of male students enrolled in pure science based programmes rose marginally from 9 (27%) in low SES to 40 (30%) in middle SES and 12 (39%) among male students from high SES families. Hence, in terms of participation in degree programmes among the male students, the findings confirm that in all the three public universities combined, about three-quarters 93 ((69%) were enrolled in arts/social sciences courses across the platforms. Only a quarter 61 ((31%) were enrolled in pure science programmes. An exception to notice is that a higher number 25 (74%) of students from lower SES' families enrolled in arts/social science courses compared to those from middle and higher SES.

Table 4.44a: Male student distribution by parents' SES and type of degree Programme

	Male from lower SES family	Male from Middle SES family	Male from High SES family	Sub-total
Arts/social science	25 (73.5%)	93 (69.9%)	19 (61.3%)	137 (69.2%)
Pure sciences	9 (26.5%)	40 (30.1%)	12 (38.7%)	61 (30.8%)
Total	**34 (100.0%, 17.2%)**	**133 (100.0%,67.2%)**	**31 (100.0%,15.%)**	**198 (100.0%)**

The high proportion of male students reporting participation in Arts/Social science programmes is partly a result of the fact that art based degree programmes have higher pool capacities (some accommodating up to hundreds of students) compared to pure science based degree programmes. Since most art based programmes have lower cut-off points compared to the pure science ones, students who fail to secure placement in these courses of choice are either placed in art based programmes by JAB (if they are in MI platform). The students' other option is to opt for programmes as second best alternatives (if they are MII).

Chi-square tests were run for variability in male student distribution in those programmes that are predominantly science based and those that are art/social science based by family SES background. It generated a p value of 0.538 which is greater than the 0.05 alpha levels. The study findings therefore rejected the null hypothesis that there was no significant difference in student distribution between the two degree programmes. This means that even with the introduction of Module II programmes that currently is free for all who qualify and are able to pay the fees, female under-participation in university education still persists.

ii) Female student distribution by parents' SES and type of degree programme

Distribution of female students in art and science based courses show that students from low SES families have a relatively higher presence in social science-based programmes than pure sciences. This assertion is similar to their counter parts from middle and high SES families (with three in every four female students from both middle and high SES reporting being enrolled for art based Courses).

Table 4.44b: Female student distribution by parents' SES and type of degree programme

	Female from lower SES family	Female from middle SES family	Female from high SES family	Total
Arts/social science	17 (54.8%)	92 (76.0%)	24 (75.0%)	133 (72.3%)
Pure sciences	14 (45.2%)	29 (24.0%)	8 (25.0%)	51 (27.7%)
Total	31(100.0%[s],16.8%[t])	121 (100.0%[s],65.8%[t])	32 (100.0%[s] 17.4%[t])	184 (100.0%)

The chi-square test resulted to a p value of 0.059, greater than 0.1 alpha levels. These results demonstrated that there was a significant difference in the proportion of female students across SES in both arts/social science and pure science degree courses. The findings indicated that a majority 92 (76%) of students from middle SES were in arts/social science programmes while 29 (24%) from the same SES were in pure science programmes. Table 4.44b show that irrespective of SES of the female students in both MI and MII, their presence in pure sciences was about one quarter of arts and social sciences except for students from the lower SES who had a difference of only 10% between arts/social sciences and pure sciences (with presence in pure science lower than arts/social sciences).

4.9 Students preference for degree programmes by gender and socio-economic background

Objective no. 4 was to explore the perceptions of regular and parallel students, lecturers and education experts on equity issues in the undergraduate degree programmes in public universities in Kenya. Chi-square tests were run to determine the level of significance of the association between a student's gender and socio-economic background as a joint variable and the status of preference for the degree programme currently pursued. A significance level of 10% or better coupled with an observed domination on one side of the preference status, would be used to demonstrate ability to use gender and SES to predict level of programme preference.

i) Female students' preference for current degree programme by parents' SES

Study results indicate that more than half 75 (68.2%) of female students from middle SES, indicated they preferred their current degree programmes. However, 37 (60%)

females from the same SES were in programmes they did not prefer. From the study findings therefore, there is a concern on the part of female students on undertaking degree programmes of preference. A minimal number of 14 (13%) of the students from the lower SES were on courses they preferred and from the high SES only 8 (13%) indicated they did not prefer their current courses.

These findings partly result from the fact that it is mostly those female students from middle to high SES families who attended better equipped schools, scored better grades in KCSE examinations and thus could attain the high cluster cut-off points associated with competitive courses. Female Students from lower SES family backgrounds who otherwise qualify for admission in MI platform, in most cases do not have very competitive scores in subjects that are critical in admission to the very competitive programmes and therefore may have very little to say about choice of course.

In cases of admission in the MII platform, only those students who have relatively better scores will be admitted to the more competitive courses. The study findings have shown that it is those students from the middle to high-income families particularly from MII platform whose parents had the financial ability to pay the high tuition fees associated with the programme. Attaining relatively lower scores in core subjects in the competitive courses, female students from low SES families will have to contend with second or third choice courses which they never preferred in the first place, if they are to attend university education at all.

Chi-square tests run on female students preference for degree programme by parents SES also showed that there was high significant level of (0.05) among groups of female students across SES, especially those students whose parents were in middle SES compared to lower and high SES.

ii) Male students' preference for current degree programme by parents' SES

The study findings identified that there were only marginal percentage differences in the male student preference for the degree programmes they were enrolled in, depicting a 50-50 scenario between preference and no-preference for degree programme across the SES. However, majority of students were concentrated in the middle SES, both for those who

said they were in preferred degree programmes, about 76 (70%) and the ones in programmes that they did not prefer 42 (64%). Male students from lower SES rated quite low for both those who preferred the programmes they were in 17 (16%) and those who indicated no preference 12 (19%). On the other hand, students from high SES also followed the same trend 16 (15%) for preference and 9 (14) for non preference as their counterparts in the lower SES. On overall, majority 109 (63%) of students in both regular and parallel programmes were in preferred programmes while 63 (37%) reported being in the programmes they did not prefer. Preference levels seemed to tally among males and females in the middle SES, at an average of 151 (68%).

Chi-square tests showed that while there was a significant difference in the status of preference for current degree programmes undertaken by the female students with the proportion of female students reporting placement in preferred programme increasing with the family SES at 0.05 significance level, there was no significant difference in the proportion of male students reporting placement in preferred degree programmes by family SES. The results further indicated that while the socio-economic status of a female student's family would be used to predict preference of the degree programme pursued, the same conclusion is not true for male students. Results for distribution of female students by family SES and status of preference of programme therefore match the study hypothesis while those for male students do not.

Additional findings apart from the hypothesis results on the students' diversified views as concerns their current degree programme were also eminent. Such findings have been discussed in the sections that follow.

iii) Preferred features of parallel degree programmes

Table 4.45 indicates that 61 (37%) of the parallel students, cited the fact that the platform allowed for the admission of non-JAB students to study for degree programmes, as a most preferred feature of MII programmes. The second and third most preferred features of parallel degree programmes were the presence of market driven courses or institutional reputation 32 (19%) and short duration of time taken to complete the programmes 30 (18%) respectively.

These findings suggest that the parallel platform accept lower entry qualifications for such courses as medicine, engineering and alike, which is common to all the institutions compared to JAB. The general perception of the study respondents that market driven courses and accelerated programmes in parallel platforms are also some of the key driving factors in the students' (and their families') quest for entry into parallel programmes.

Table 4.45: Distribution of features liked by parallel students about parallel degree programmes

Likes of parallel students for parallel programmes (n=391)	n	%
Allows non JAB and part time students to gain admission	61	36.5
Market driven programmes/my university is reputable	32	19.2
It takes a shorter time to complete programme	30	18.0
Integration of students	15	9.0
Immediate entry after O-level	3	1.8
Total	**167**	**85**
Other Unspecified	224	

The twin advantages of the availability of market driven and accelerated programmes in the parallel platform will in the final analysis "compensate" for the high cost differentials that the parallel students incur during studies. This relates to the reason that upon faster completion of their studies and graduation and may be subsequent employment of the students in the MII platform, there is an opportunity cost on the part of the MI students. The opportunity cost incurred (earnings foregone) by the regular students who take longer on campus may as well be significant enough to "inflate" the total costs incurred in obtaining the degree to a level that would approximate and/or equal costs incurred by the parallel students who pay unit cost based charges (that are much higher) for their tuition and other fees.

On the other hand, Table 4.46 shows the highest proportion of regular students 62 (36%) reported liking parallel degree programmes because they have enabled non-JAB entry (with lower qualifications) or studies under part-time terms to undertake degree programmes. This feature comes across as very popular with regular students who are "mostly cash needy" and therefore would prefer combining studies with work to earn income.

Table 4.46: Ranked distribution of features liked by regular students liked about parallel degree programmes

Likes of regular students for parallel programmes (n=391)	n	%
Allows non JAB / part time students to gain admission	62	36.0
Market driven programmes/reputable qualifications	23	13.4
Integration of students	21	12.2
It takes a shorter time to complete programme	20	11.6
Immediate entry after O-level	6	3.5
Total	**172**	**77.0**
Other Unspecified	259	

Regular students also favoured parallel platform on the basis that it either had market driven programmes, said by 23 (13.4%) students, integration of students, cited by 21 (12%) or because the programmes took shorter duration to complete identified by 20 (12%) of the students. The regular students indicated that integration of degree programmes signalled a move towards enhancement of equity, where students on both programmes would be exposed to similar conditions of study. In the absence of integration however, students on the two platforms would be exposed to different study conditions such as amount of content vis-à-vis contact hours or examinations, hence adding to the diversified forms of inequalities, some of which have been identified in earlier sections of this study.

iv) Preferred features of regular degree programmes in student own university

According to Table 4.47, parallel students felt that the most preferred feature of regular programmes was their affordability/government-subsidised fees 64 (45%). In total, 78 (55%) of parallel students preferred regular programmes because they either benefited from government subsidized fees or HELB loans.

Table 4.47: Ranked features liked by parallel students about regular programmes in own university

Likes for regular programmes by parallel students (n=391)	n	%
Affordable/ Government subsidized fees	64	45.1
Placement by merit/Easy of inter faculty transfer	21	14.8
On campus accommodation and adequate facilities	15	10.6
Access to HELB loans	14	9.9
Faster /Accelerated programmes	7	4.9
Total	**142**	**87.0**
No Response	270	

Merit based placement, ease of inter faculty transfer were also additional preferences said by 21 (15%) students including on campus accommodation for regular students said by 15 (11%) students and ranked second and third respectively among features of regular degree programmes preferred by parallel students.

v) Regular students' preferences of the regular programmes in own university

Table 4.48 shows that highest proportion of regular students 79 (43%) preferred their platform because of its affordability/subsidized fees. Merit based placement/ease of inter faculty transfer was rated at 31 (17%) while on-campus accommodation was at 19 (10%) ranked second and third respectively. Surprisingly, the study findings show that both groups of students rated themselves in comparison with each other, and as benchmark for rating self.

Table 4.48: Ranked distribution of features liked by regular students about regular programmes in own university

Likes for regular programmes by regular students (n=391)	n	%
Affordable/ Government subsidized fees	79	42.5
Placement by merit/Easy of inter faculty transfer	31	16.7
On campus accommodation and adequate facilities	19	10.2
Access to HELB loans	11	5.9
Faster /Accelerated programmes	9	4.8
Other	37	19.9
Total	**186**	**100.0**
No Response	205	

Table 4.48 also shows that 9 (5%) of regular students cited presence of accelerated programmes as a preference in the platform. This minority proportion represented pockets of cases of programme acceleration through summer programmes exclusively offered at Kenyatta University.

4.10 Limitations of parallel degree programmes in own university

i) Dislikes for the parallel degree programmes by parallel students

Table 4.49 shows that parallel students identified 'cost' of their university education as the most serious limitation of parallel degree programmes, where about 79 (49%) students indicated that the programmes were expensive.

Other limitations in the MII programmes included; isolation of parallel students 24 (15%), inadequate course content/contact hours 23 (14%), and administrative bureaucracy (9%) ranked second, third and fourth respectively. The 15% of the students in the MII platform who identified isolation as a serious limitation of the MII programmes are those who felt that if the two programmes are integrated, all students irrespective of platform would study under same conditions thus eliminating any cases of unequal treatment particularly to the disadvantage of either of the students in the two platforms. However, based on perception, parallel students mentioned inadequate course content and contact hours among their dislikes for the parallel programme. The reality in all the three public universities was that content for both MI & MII programmes were the same across various degree programmes. The MII programmes cover many hours within a short time – one month in case of school based courses in KU and Moi, while the MI ones are spread between three to four months.

Table 4.49: Ranked distribution of features disliked about parallel programmes by parallel students in own university

Dislikes for parallel programmes by parallel students (n=391)	n	%
Expensive	79	48.5
Isolation of parallel students	24	14.7
Inadequate course content/contact hours/compromised quality	23	14.1
Administrative bureaucracies	15	9.2
Other	14	8.6
Long lectures	8	4.9
Total	**163**	**100.0**
No Response	228	

ii) Dislikes for the parallel programmes by regular students in own university

Table 4.50 indicates a fairly high number of students 77 (43%), in the regular platform that cited high costs of the MII programmes as the most serious limitation. This opinion

from the students in the regular platform was probably the result of comparative assessment of the direct cost differentials (in the form of tuition charges and other fees) between the two programmes. While regular students spend an average of Kshs. 60,000 per year on tuition, other fees and on campus costs, the parallel students spend up to twice this sum (for most MII programmes excluding medicine, engineering that cost a lot more) on tuition alone.

Comparatively, in most public universities, where limited on campus accommodation is offered to the MII students, their charges are usually higher than those levied on MI students. Table 4.50 shows various reasons for dislikes for the MII programme cited by regular students. It is also shown in Table 4.50 that about 38 (21%) of students in MI platform cited that isolation of MII students was the second most serious limitation of MII programmes. For this lot however; their concern was that the isolation of MII students make them receive preferential treatment from the institution. Evidence of such incidences are seen in cases where some of the public universities like Kenyatta, Moi, Egerton, and Maseno have established exclusive facilities that cater for MII students with semi-autonomous (almost business like) management, that make the two programmes grossly unequal.

Table 4.50: Ranked distribution of features disliked by regular students about parallel programmes in own university

Dislikes for parallel programmes by regular students (n=391)	n	%
Expensive	77	43
Isolation of parallel students	38	21.1
Inadequate course content/contact hours/compromised quality	28	16
Inadequate facilities/congestion	4	2.2
Long lectures	2	1.1
Administrative bureaucracies	2	1.1
Other	29	16.1
Total	**180**	**100.0**
No Response	211	

On the other hand 28 (16%) of MI students pointed out to inadequate course content/contact hours/compromised quality as the third most serious limitation of MII programmes. This limitation of MII programmes is usually pronounced in instances of disintegrated teaching where MI and MII students attend completely different classes.

Under such conditions and with the invention of evening, weekend and school holiday based programmes, there was always the temptation on the part of faculties to do so much work (teaching) over a short period which invariably compromises delivery and quality.

4.11 Limitations of regular degree programmes in student own university

i) Parallel students' dislikes of regular programmes

As shown in the Table 4.51, the common limitations of MI programmes that were identified by MII students included; longer duration for programmes 42 (30%), poor inadequate facilities/many students 27 (19%), programmes that lack market relevance 19 (14%), segregated/ hostile students 18 (13%) and inadequate lecturer attention 8 (6%).

Table 4.51: Ranked distribution of features disliked by parallel students about regular programmes in own university

Dislikes for regular programmes by parallel students (n=391)	n	%
Longer duration for programmes	42	30.2
poor /inadequate facilities/many students	27	19.4
programmes that lack market relevance	19	14
Segregated/ hostile students	18	13
Inadequate lecturer attention	8	6
Other (specify)	25	18
Total	**139**	**100.0**
No Response	252	

The 30% of students cited longer study duration of the MI programmes as a dislike, and identified that in most universities, MI programmes experienced frequent disruptions owing to student riots, long compulsory recesses at the end of every academic year and lately industrial stand-offs between lecturers and their employers.

ii) Regular students' dislikes for the regular degree programmes in own university

In Table 4.52, a finding similar to that of students in the parallel platform; longer programme duration ranked highest among limitations of MI programmes identified by 41 (22%) of MI students. Similarly the limitation in MI programmes of poor/inadequate facilities said by 39 (21%) is largely drawn from the fact that since the early nineties,

development of capital projects in public universities (lecture theatre complexes, hostels) stalled midway owing to under capitation among other reasons. This resulted in high student numbers that outstripped available facilities particularly in hostels where up to four students share hostel rooms measuring ten by ten feet or smaller. In extreme circumstances (especially in rural based university campuses) like Maseno and Moi universities, students have to contend with scrambling for low cost (almost dingy) rented shacks outside the university, greatly compromising student security and comfort necessary in an academic environment.

Table 4.52: Ranked distribution features of regular programmes disliked by regular students in own university

Dislikes for regular programmes by regular students (n=391)	n	%
Longer duration for programmes	41	22.4
Poor /inadequate facilities/many students	39	21.3
Programmes that lack market relevance	32	17.5
Inadequate lecturer attention	17	9.3
Segregated/ indisciplined students	14	7.7
Other (specify)	28	15.3
No idea	12	6.6
Total	**183**	**100.0**
Non-Response	208	

The 32 (18%) of students in MI platform who identified their dislikes with programmes that lack market relevance, point out to a common conservative institutional practice in public universities where degree programmes that no longer attract any applications still get students admitted into them as draftees by JAB. In many instances, this scenario is the result of lack of quality assessment of programmes offered in the public universities, to be informed of the need of retention or declaration of redundancy for unpopular programmes that are much to the disadvantage of MI students who end up being admitted in these programmes.

4.12 Equity dimensions across the parallel and regular degree platforms

Objective no 5 was to draw implications for higher education policy in Kenya based on the study findings on equity dimensions. This was analyzed in line with the findings from both the parallel and the regular undergraduate degree platforms.

4.12.1 Equity dimensions in parallel and regular degree programmes

There were six most common equity dimensions in MII programmes that were identified by the three universities as shown in Table 4.53 from the study findings. They included; low entry points 105 (39%), higher tuition and other fees 92 (34%), students mainly from affluent families 91 (34%), inadequate contact hours (30%), lack of inadequate on-campus accommodation 67 (25%) and integration with regular programmes 56 (21%).

Table 4.53: Ranked distribution of equity dimensions by lecturers in parallel and regular degree programmes

Parallel (n=271)			Regular (n=271)		
Equity dimensions	**N**	**%**	**Equity dimensions**	**N**	**%**
Low entry points	105	38.7	Higher entry points	104	38.4
Higher tuition and other fees	92	33.9	Lower tuition and other fees	87	32.1
Students mainly from affluent families	91	33.6	Students mainly from poor-middle class families	75	27.7
Inadequate contact hours	82	30.3	Adequate contact Hours	75	27.7
No/Limited on campus accommodation	67	24.7	Inadequate/poor accommodation facilities	60	2.1
Integration of parallel with regular students	56	20.7	Integration of regular with parallel students	46	17
No access to HELB loans	27	10	Access to HELB loans	43	15.9
Large classes	17	6.3	Highly restricted options at degree programme choice	11	4.1
Have greater freedom at programme choice	10	3.7	Larger classes	10	3.7
Take shorter duration	5	1.8	Smaller classes	3	1.1
same course content as regular	3	1.1	Other (specified)	64	23.6
Smaller classes	2	.7			

The 39% proportion of the lecturers who identified low entry points to the MII programmes, as an equity dimension, shown in Table 4.53, are those who recognize the inequity in admission to competitive degree programmes where students in the MI platform are required (in some courses like medicine and pharmacy) to attain straight A's to gain admission into these programmes on the MI platform. However, for those students who enter the same programmes on the MII platform, only need to have attained the minimum entry points of C+ and at least grade B in each of the four cluster subjects, based on the Deans Committees' verification by the respective universities.

University lecturers, about 34% of them cited comparatively high tuition fees charged for MII programmes as the second major equity concern. This was regarding the fact that admission into MII programmes is on the beneficiary's' ability to pay. The above scenario was similarly be the consequence of the observation made by another (34%) of lecturers that a majority of students in the MII platform were from the more affluent families. Inadequate contact hours for MII programmes that was ranked as the fourth most common equity concern among lecturers draws from the observation that most MII programmes (especially where they are taught separately from the MI classes), are allocated fewer hours compared to the same courses when offered on the regular platform. Main examples were the school based MII programmes run by Kenyatta and Moi Universities whose duration is normally an average of one month for a semester whereas MI cover the same content in three and half months.

4.12.2. Adequacy of contact hour allocation by platform

A large number 234 (95%) of lecturers who participated in the study viewed the contact hours allocated to regular programmes as adequate for the course content that is usually set to be covered during the entire semester. On the other hand about 174 (71%) of students considered the contact hours allocated to most MII programmes to be grossly inadequate, a fact that has the potential to compromise effective instruction quality of programmes offered under MII platform. The situation was more evident in MII evening classes commonly conducted by UoN and Moi, where students who attend these classes go for three hours (usually from 5.30pm-8.30 pm).

4.12.3 Appropriateness of degree programmes by platform

From the study results, 219 (83%) of university staff and education experts viewed the introduction of MII programmes as being an appropriate measure in that the programmes have partly helped to open up access to higher education for the hitherto excluded segments of higher education seekers. Further, revenues from these programmes have significantly contributed to the overall institutional liquidity levels thus enabling them to afford better pay for their staff. However, 248 (94%) also viewed regular programmes as being appropriate partly for the reasons that their charges are greatly subsidized by government thus they enable some qualified but poor students to access university education.

4.12.4 Equity implications of the regular and parallel degree platforms

Findings from education experts and policy makers show that while 188 (74%) of university staff and other education experts believed that MII programmes do not promote equity, another 228 (89%) of them revealed that MI programmes promoted equity among the seekers of university education. This is because MII programmes are cost intensive thus effectively excluding qualifying but poorer students whereas MI programmes that benefit from substantial cost subsidies from government, accommodate qualifying students irrespective of family SES, though not all who qualify get admission to public universities through JAB.

4.13 Changes and recommendations to the parallel and regular degree platforms

This section of the study highlights some of the proposed changes by key respondents in the study namely university lecturers and students. They are presented with respect to regular and parallel platforms.

4.13.1 Proposed changes by university lecturers

a) Changes in parallel programmes

The main changes proposed as indicated in Table 4.54, by lecturers for MII programmes included; provision of accommodation 118 (44%), provision of loans to MII students 63

(23%), reduction of student numbers 67 (25%), reduction of fees 63 (23%), improvement of learning facilities 39 (14%), more contact hours 36 (13%), and increased admissions 36 (13%) among others which were rated very low as Table 4.54 shows.

Table 4.54: Ranked distribution of proposed changes by lecturers of parallel programmes

Change proposed (n=271)	n	%
Provision of accommodation	118	44
Provision of loans to parallel students	63	23.2
Reducing student numbers	67	25
Reduction of fees	63	23.2
Improving learning facilities	39	14.4
More contact hours	36	13.3
Increased numbers admitted	36	13.3
Integrate parallel with regular students	17	6.3
Make programmes more market driven	17	6.3
Improvement of gender balance	4	1.3
Separate regular and parallel classes	3	1.1
Other	24	9

b) Changes in regular degree programmes

Table 4.55 indicates key changes proposed for MI programmes by lecturers. They included: improvement of the HELB loan amount/coverage 76 (28%), better facilities 59 (22%), expansion of regular programmes to accommodate more 31 (11%), reduction of number of students per class (8%), greater freedom on programme choice 20 (7%) and making programmes more market driven 18 (7%).

Table 4.55: Ranked distribution of proposed changes by lecturers for regular degree programmes

Changes proposed (n=271)	n	%
Improvement of HELB loan amount/coverage	76	28
Better facilities	59	21.8
Expansion of regular programmes to accommodate more	31	11.4
Reduction of number of students per class	22	8.1
Greater freedom in course choice	20	7.4
Making programmes more market driven	18	6.6
Integration of the two programmes	12	4.4
More contact hours	4	1.5
Improving gender balance	3	1.1
Other	51	18.8

Lecturers proposing an upward adjustment of HELB loan coverage recognize the fact that there has been a general rise in the costs associated with university education on the MI platform and as such substantially increasing the amount of HELB loan given to students would enhance programme equity. Furthermore, proposals to improve loan coverage indicate that there are indeed significant deserving cases of MI students that still remain uncovered by the scheme. These changes identified reveal that MI and MII platforms have diversified equity dimensions because on one hand, resources available for them are different and on the other, they view each other as the cause of their shortcomings.

4.14 Suggestions for inter-platform equity enhancement

Depending on the prevailing teaching-learning circumstances and observed equity differentials between the platforms, students on the two platforms and staff who have taught or interacted with MI and MII students were bound to have diverse opinions on how inter-platform equity could be enhanced.

a) Student recommendations for parallel programmes

Table 4.56 identify six most common equity enhancement recommendations for parallel programmes that were cited by the students in MII platform as; integration of the two Modules, improved facilities/provision of accommodation, provision of loan, reduction of fees, increased minimum entry requirement and administration of same exams to both parallel and regular students.

Table 4.56: Proposed recommendations by parallel students for parallel degree programmes

Recommendation (n=181)	n	%
Integration of the two Modules	47	26.0
Improved facilities/provision of accommodation	44	24.3
Provision of loan	43	23.8
Reduction of fees	37	20.4
Increase minimum entry requirement	33	18.2
Administration of same exams	25	13.8
Making programmes more market driven	9	5.0
Gender balance	2	1.1
Scrap parallel programmes	8	4.4
Others	28	11.0

The ranked (from most to least cited) order of recommendations for the enhancement of equity in parallel degree programmes for the MI students outlined in Table 4.57 included; integration of the two Modules 56 (27%), increase minimum entry 33 (16%), provision of loan 31 (15%), reduction of fees 30 (14%) and improved facilities/provision of accommodation 21 (10%).

Table 4.57: Proposed recommendations for parallel programmes by regular students

Recommendation (n=181)	n	%
Integration of the two Modules	56	26.7
Increase minimum entry	33	15.7
Provision of loan	31	14.8
Reduction of fees	30	14.3
Improved facilities/provision of accommodation	21	10.0
Administration of same exams	16	7.6
scrapping of parallel programmes	9	4.3
Making programmes more market driven	7	3.3
Gender balance in admissions	4	1.9
others specify	17	8.1

b) Student recommendations for regular degree programmes

Table 4.58, shows a ranked order of recommendations cited by students in the MII platform that were proposed to help in enhancing inter-platform equity. Six of the most commonly cited recommendations included; integration with parallel programmes, better facilities, greater freedom in course selection, increasing HELB loan allocation and making programmes more market driven.

Table 4.58: Distribution of proposed recommendations for regular programmes by parallel students

Recommendation (n=181)	n	%
Integration with parallel	36	19.9
Better facilities	23	12.7
Greater freedom in course selection	20	11.0
Increasing HELB loan allocation	16	8.8
Making programmes more market driven	16	8.8
Reduction in cut-off points	16	8.8
Reduction of programme duration	13	7.2
Reduction of fees charged	8	4.4
Improvement of gender balance	5	2.8
Reduction of number of students admitted	1	0.6
others specified	14	7.7

Table 4.59 indicates recommendations that were identified by MI students for their programmes to enhance equity, that included; greater freedom in course selection cited by 33 (16%) students, integration with parallel by 32 (15%) students, better facilities said by 31 (15%) students , increasing HELB loan allocation by 28 (13%) students, making programmes more market driven by 28 (13%)students, reduction in cut-off points by 28 (13%) of the students and reduction of programme duration said by 15 (7%).

Table 4.59: Distribution of proposed recommendations for regular programmes by regular students

Recommendation (n=210)	n	%
Greater freedom in course selection	33	15.7
Integration with parallel	32	15.2
Better facilities	31	14.8
Increasing HELB loan allocation	28	13.3
Making programmes more market driven	28	13.3
Reduction in cut-off points	28	13.3
Reduction of programme duration	15	7.1
Reduction of fees charged	11	5.2
Improvement of gender balance	7	3.3
Reduction of number of students admitted	4	1.9
Others specify	27	12.6

c) Recommendations to enhance inter-platform equity by lecturers

i) Recommendation for parallel degree programmes

Main recommendations proposed by lecturers for the improvement of parallel degree programmes to enhance inter-platform equity outlined in Table 4.60 included;

improvement of facilities from parallel degree proceeds 114 (42%), provision of loans to parallel students 96 (35%), raising minimum entry points 74 (27%), improvement of lecturer remuneration for parallel proceeds 57 (21%), more market driven courses 43 (16%), reduction of fees 32 (12%), and increasing of contact hours 32 (12%).

Table 4.60: Ranked proposed recommendations for improvement of parallel degree programmes by lecturers

Recommendation (n=271)	n	%
Improving facilities from parallel proceeds	114	42.1
Provision of Loans to parallel students	96	35.4
Raising of minimum entry points	74	27.3
Improving Lecturer remuneration from parallel proceeds	57	21.1
More market driven courses	43	16
Reduction of fees	41	15.1
Integration with regular programmes	32	12
Increasing of contact hours	32	12
Enrolment of more student	12	4.4
Introduction of pre-university courses	4	2
Separation of Programmes	3	1.1
Other	39	14.4

ii) Recommendations for regular degree programmes

To help enhance greater inter-platform equity, university staff proposed a wide range of recommendations shown in Table 4.61 that include; improvement of accommodation and other facilities 68 (25%), more HELB loan coverage 48 (18%), more market driven programmes 29 (15%), freedom of Module choice 25 (9.2%), integration of the two of students 22 (8%) and lowering of entry points for MI programmes 19 (7%).

Table 4.61: Ranked proposed recommendations for improvement of regular degree programmes by lecturers

Recommendation (n=271)	n	%
Improvement of accommodation and other facilities	68	25.1
More HELB loan coverage/subsidies	48	17.7
More market driven	29	14.5
Freedom of Module/course choice	25	9.2
Integration with parallel	22	8.1
Lowering of entry points	19	7.0
Affirmative action for marginalized groups	10	3.7
Acceleration of programmes	5	1.8
Other	28	10.3

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The purpose of this study as stated in chapter one was to explore equity dimensions in parallel and regular undergraduate degree platforms based on four variables namely; student socio-economic status, gender, degree programmes and institutional equity with a view to enhance equity distribution of university education opportunities in Kenya; and to draw implications for public university education policy on the study findings. Five specific objectives were drawn from the broad purpose to: (i) to determine differences in student enrolment in regular and parallel undergraduate study platforms by gender and socio-economic background; (ii) to establish differences in proportion of regular and parallel undergraduate students across public universities; (iii) to ascertain if gender and socio-economic background predicts undergraduate study platform and preference for degree programme; (iv) to explore the perceptions of regular and parallel students, lecturers and education experts on the undergraduate degree programmes in public universities in Kenya, and, (v) to draw implications for higher education policy in Kenya based on the study findings.

An attempt to answer the objectives outlined above was conducted through administration of different sets of questionnaires to four hundred students in various disciplines and years of study and to three thousand academic staff including interviews with ninety administrative staff in three public u niversities namely Nairobi, Kenyatta and Moi.

Seven other respondents from: MoE, JAB, CHE, KIPPRA, Rockefeller and Ford Foundation termed education experts were also interviewed. The data collected were subjected to statistical and qualitative analysis techniques in an effort to achieve research objectives, from which study hypotheses were generated.

5.2 Discussions: Implications of the Findings

On the basis of the study findings presented in chapter four, this section attempts to discuss these findings and make conclusions and recommendations based on the study objectives as stated above, with reference to literature review.

5.2.1 Differences in student enrolment in regular and parallel undergraduate study platforms by gender and socio-economic background

Literature review findings on (p.23) has established that university students' socio-economic status strongly influences their placement in programmes, a study on regional and socio-economic origins of students in Kenyan public universities revealed (Achola, 1997). Acholas' study also states that poor income groups are normally under–represented, compared to higher income groups among public university students. These findings are consistent with the research results of this study presented in Tables 4.15, 4.16 and 4.17, on (pp. 83, 87, & 91), which show that enrolment of female students in undergraduate programmes in both MI and MII platforms are still low, though with marginal increases among female students in the MII platform. Overall, enrolment of male students is about half that of the female ones for both regular and parallel platforms.

Thorvadul and Gylfi (2001), emphasize that increased inequality tends to retard growth in poor countries and boost growth in richer ones, and that in rich countries, increased inequality discourages education and growth by increasing the number of poor people who cannot afford education. In their study, Thorvadul and Gylfi further argued that a country's populace should acquire university education through equal opportunity and access since it appears to encourage economic growth directly as well as indirectly through increased social equality and cohesion.

In terms of socio-economic status (SES) of students, the outcomes were found to indicate a significant presence of less affluent students in MI compared to MII programmes. Study findings indicated that there was a higher presence, by proportion 168 (94%), of students from middle and high income families on the Module II platform compared to the Module I platform where 155 (74%) reported coming from the same family backgrounds. Further, while only 11 (6%) of MII students reported coming from

low (SES) families, up to one in every four MI students 54 (26%) reported having emanated from similar family backgrounds.

Additionally, Chi-square tests results at >0.05 significance level indicated in Table 4.48b on (p. 148) show that male and female student participation in the two platforms by family SES backgrounds differed significantly with students from middle and high socio-economic backgrounds dominating positions in both platforms across the gender divide.

5.2.2 Differences in proportion of regular and parallel undergraduate students across public universities

Data on gender desegregated enrolment in Tables 4.15, 4.16 and 4.17 for KU, UoN and Moi highlighted on (p. 83, 87 & 91) have trends showing significant variations in gender enrolment proportions by institution. While MI female participation in KU has remained around the 2887 (40%) mark, MII female student population continues to oscillate around the 1963 (20%) mark. In the case of Moi University, overall gender enrolment proportions have remained largely constant in the MI platform among female students at 2019 (43%), while there has been an upward trend in female student enrolments from 690 (33%) in 2001/2002 academic year to (2019) 45% by the 2004/2005 academic year on the MII platform. The UoN figures indicate that female proportions in MII programmes have remained significantly higher than those in MI.

Table 4.18a (p.93) indicates total enrolment for 2004/2005 academic year by each of the three universities that participated in the study. Significant differences occurred between the parallel and regular platforms. In University of Nairobi, enrolment of students in the parallel platform were more by about 2500 students than that of regular in 04/05 academic year. On the other hand, while Kenyatta had a fairly close enrolment between the two platforms, with total regular platform enrolment of 7200 students and parallel with 8855 students, parallel enrolment was still more with 1655 students. However, Moi, in the same academic year had 2988 more students in regular than parallel students. Nairobi and Kenyatta universities depicted a similar trend in increased enrolment in 2004/05, indicating some growth in parallel platform enrolment while Moi stagnated. A confirmation of increasing trend in enrolment was Kiamba (2003;

www.albany.educ) who revealed in his study that UoN had shown tremendous increase in enrolment as well as income from the parallel platform.

The fact is that UoN attracts more parallel students as a result of location and nearness to transport services coupled with certain courses popularly known with it as medicine, engineering, architecture and alike. Moi is favoured by regular students due to some of the unique and popular programmes it has introduced such as health sciences, environmental studies among others. Kenyatta is viewed as an average university in terms of programmes offered, both in regular and parallel and the more reason why the difference in enrolment was not wide across the platforms. Again, there were increases in total enrolment trends in all the three universities during the two academic years notwithstanding the growth of universities. In the literature review section (p.26), the emphasis is that the higher education terrain in Africa has been the rapid increase of universities since independence in 1963. From a low number of 52 in 1960, the number of universities almost trebled to 143 by 1980, and more than doubled to 316 by 2000 (Mbemba; Mario, 2003, www.aau.org). Overall student enrolment increased at an equally striking rate. From an estimated total of 181,000 in 1975, there was a three-fold increase within five years, according to published figures, to over 600,000 by 1980 (Mbemba, 2003).

5.2.3 Gender and socio-economic background determines undergraduate study platform and preference for degree programme

Findings presented in chapter four of this study have identified observations that show reasons given by female students for their preferences for the MII programmes offered at UoN. One of the reasons was the institutions' centrality in terms of its location, which enables it to attract the majority of the urban female students who did not qualify for MI positions and wish to enrol for degree programmes.

Chi-square tests for variability in male student distribution in those courses that are predominantly science based and those that are art/social science based by family SES background showed no significant difference. While there was a significant difference in the status of preference for current degree programmes undertaken by the female students; with the proportion of female students reporting placement in preferred

programme increasing with the family SES, there was no significant difference in the proportion of male students reporting placement in preferred degree programmes by family SES. This suggests that most male students were probably equally ambitious (to want to join competitive programmes) regardless of their family backgrounds. However, the fact that even among male students from low SES 17 (16%) compared to 14 (12.7%) of females reported preference of the programmes they were undertaking is further confirmation that more male students perform better in their Kenya Certificate of Secondary Education (K.C.S.E) examination compared to their female counterparts, hence getting placed into programmes of choice that are probably competitive. Specifically, based on particular undergraduate degree programmes, preference was also evident in enrolment of the female students. Table 2.1 (p.36), found in the background section of this study from previous empirical evidence also confirms the current study findings. It shows that the widest gender disparities have been in Science, Maths and Technology (SMT) related programmes where female enrolment was lower, 12.5 per cent in engineering and architecture; 12.6 per cent in agriculture and veterinary medicine; 14.1 per cent in natural sciences and 19.7 per cent in medicine and pharmacy, whereas their male counterparts registered 87.5%, 87.4%, 85.9% and 80.3% in the same programmes respectively (Kilemi and Njuguna, 2002).

Female student's family SES would be used to predict level of satisfaction with the degree programme pursued, the same conclusion is not true for male students. This study has also revealed that female students shy away from applying for science based degree programmes, and also for the fact that their performance at K.C.S.E is normally uncompetitive, resulting in low numbers registered and thus render them low bargaining power to influence their admission in preferred programmes.

regular platform takes a minimum of three months, which is a similar duration in the case of parallel, particularly for the school based on-campus programmes (residential phase of the school-based learning) offered by Moi and KU. However, both groups of students cover the same content irrespective of duration taken on-campus programmes since the rest of the hours for the parallel programmes are taken through distance learning. This is a fact that may not be known to the parallel students and their beneficiaries, hence the reason for their perception of the parallel programme duration that it is shorter. There is need to reverse this perception and public universities in this regard should take up corrective action in sensitising the public on their programme duration and how they are spread within a semester.

Such observation points to the fact that parallel students (probably together with their financiers) have a feeling that they were not getting value for their money. The implication therefore would be that though more and more high school leavers continue to enrol for these programmes, MII programmes could just be the second best option to them as the other options like pursuing studies overseas have been subjected to restrictions by most popular host countries.

Table 4.60 (p. 161) show dislikes for the regular programmes which were identified to take a longer duration 42 (30%) and that learning facilities were poor/inadequate and it allowed for too many students per class 27 (19%) including the reason shown on Table 4.61 (p.161), that the regular programmes lack market relevance 39 (21%) . All these factors have in the past singly or jointly contributed to stretched study duration from the official four academic years (32 months) to as many as six calendar years (60 months) thus greatly compromising the efficiency levels of public universities and increasing the net (direct and opportunity costs) of obtaining a degree through the regular platform disproportionately. Further, the frequent strikes among students and lecturers in the public universities have made respondents believe that a regular programme takes a longer time compared to the parallel ones. However, lecturers' strikes in the public universities in Kenya causes delays in completion of the regular degree programmes whenever they happen but the duration covered in any similar programme whether in parallel or regular platform is the same both in content and contact hours.

ii) Equity dimensions

Previous empirical evidence outlined on (p.33) show that equity in student regional representation vis-à-vis inadequate human resources among other issues is still a challenge to university education in Kenya (Achola, 1997). The study further states that poor income groups are under–represented compared to higher income groups among public university students. It is also evident on (p. 35), as cited by the Daily Nation (2001) that out of 60,612 citizens who had attained university education only 18,175 were women. This confirms that inequalities in university education in Kenya takes varied dimensions some of which have been identified by this study.

Table 4.61 on (p. 161), of the study results shows that 104 (38%) of lecturers identified the high entry points required for MI Platform as the foremost equity dimension. Over time, the entry cut-off index has continued to rise with the result that more and more students from the small rural schools are getting left out of MI platform admission. In many instances students from the small, less equipped and staffed schools in the rural areas do not have a competitive edge over their counterparts from senior better equipped provincial, private and national schools. In the event the cut-off continues to rise to higher levels, only candidates from the big schools will dominate government supported positions in the public universities. Essentially such a situation will continue to deny students from poorer families (who dominate positions in the smaller schools) access to higher education as they will be excluded from both MI and MII platforms by disproportionately high cut-off points and high tuition charges respectively.

Further, lower tuition fees charged on regular programmes said by 87 (32%) of the regular students was identified as the second most important equity dimension, for the reason that within the MI student population, a significant proportion 180 (86%) indicated on Table 4.48 (p.148) were students who came from low income (poorer than most) and middle income (same as most) families. This group depends on family- based financial support to meet at least most of the study costs at the university. The relatively low tuition and other fees charged on MI programmes therefore enhance equity of the programmes if only for the reason it gives financial relief to students from the non-affluent (low income) families.

The 75 (28%) of lecturers, still in Table 4.61 (p. 161), who pointed out adequacy of contact hours for MI programmes as an equity dimension, were those who put focus on the amount of content usually designed for the programmes in relation to the contact hours spread over the semester, which balance very well for the MI programmes. Inadequate/poor accommodation facilities for students in the MI platform reported by 60 (22%) of university lecturers and management further point out to the many instances of congested hostels with un-maintained infrastructure that make living conditions for those students who stay on campus the more squalid. However, the MII students do not fair any better in terms of accommodation and living conditions. Their situation leans more on expense and insecurity. Further, Table 4.61 on (p.161) outlines equity dimensions in both parallel and regular platforms. In the same Table, lecturers identified that lack/limited accommodation for parallel students on campus was evident in the three public universities and this interfered with students' class attendance vi-a-vis performance. They also reiterated that the regular students were not left out since they as well experienced poor/inadequate accommodation. Their recommendations included expansion of accommodation facilities in the Kenyan public universities to cater for both parallel and regular students.

5.2.5 Equity implications for higher education policy in Kenya based on the study findings

Equity implications arise from the major differences that have been identified between the regular and parallel platforms based on gender, socio-economic status, degree programme and university/institutional equity. The views of Thorvadul and Gylfi (2001), already discussed in the literature section of this study (p.32), emphasized that increased inequality discourages education and growth by increasing the number of poor people who cannot afford education. However, in terms of equity, data from high, low and middle level income countries across the commonwealth show that there are low numbers of senior women in academic employment as compared to that of their male counterparts, (Husu 2001; linkinghub.elsevier.com; www.ift.uib.no). Under-representation among female participation in university education is equity dimension that affect not only

Kenya but Africa as a whole. There is need to urgently reduce or to close-up the gap for purposes of enhancing development in these countries.

Discussion on (p.33) of the literature review outline previous studies that have revealed that in public universities in Kenya, there are degree programmes that seem to be more attractive to students from low socio-economic backgrounds namely: Bachelor of Education (Arts), Bachelor of Science (Natural Resources), Bachelor of Technology and Bachelor of Science – Agriculture (Achola, 1997). This suggests that taking up a degree programme is also influenced by the students' socio-economic backgrounds. Previous studies appear to confirm findings of this study on investigated equity dimensions. Table 5.1 on (p.172) identifies equity dimensions revealed in this study and their implication for public university education policy.

Table 5.1: Equity dimensions and their implications

Equity dimensions	Implication
a. Enrolment imbalance by:	
i) Gender – overall, more male students than females were enrolled in both platforms in UoN, Moi and KU.	The gender gap in university education has persistently been wide with males taking the lion share even with the introduction of the parallel platform. This continues to retard career development of the female folk and they remain incapacitated resulting from lack of education opportunities at the university level.
ii) SES – university students were from middle to upper SES.	Students from the lower SES are locked out of university education since they are unable to qualify for university education as their socio-economic background does not aid them to attend school across all levels.
v) University – UoN had the highest total enrolment both in regular and parallel platform and rated most popular among students.	Leads to bias association with particular university and a sense of superiority among students, notwithstanding the different programmes offered by these public universities.
iv) Degree programme: enrolment in science based programmes was dominated by male students.	Participation of the female students in science based degree programmes was a sign of stagnation in their development in science and technology which has since been identified by previous studies.
b. On-compass accommodation provided for regular students.	Parallel students are exposed to out of compass accommodation circumstances that may not allow for adequate concentration and hence may negatively affect performance
c. Higher tuition fee charges for parallel.	Respondents expressed concern that it should be reduced as they concentrate more in looking for fees as opposed to studying while regular students observed a bias treatment that favour their colleagues due to the fee payment
d. Access to HELB loan by regular students.	Creates a feeling of discrimination and hence leads to defence mechanisms for failures in academic work
e. Lower entry point for parallel students for competitive degree programmes such as law, medicine, engineering among others.	Discourages hard work and quality performance for admission since there is a 'back door method' for the parallel students as the regulars referred to it
f. Large class sizes for regular students.	Leads to incredible results in examinations, and ineffective teaching, a disadvantage compared to their parallel (MII) counterparts, whose class sizes were not as large though fairly large and rapidly increasing in some programmes depending on the institution particularly (MOI and KU school based programmes).
g. Lectures handled separately for regular and parallel except for the very competitive programmes with low enrolment in UoN. In MOI and KU the scenario was common for school based programmes and those students on parallel platform on part-time programmes for evening & weekend classes.	Leads to lack of trust on content provided for the two groups of students (MI& MII), hence MII students prefer to regularly consult with their colleagues in MI to compare notes with a view of confirming, similarities and differences if there are any.
h. Preference in degree programme	Parallel students are viewed to be advantaged in programme choice that are market driven and the belief that such a graduate may be able to obtain employment faster than the regular ones.

Higher education appears to encourage economic growth directly as well as indirectly through increased social equality and cohesion (Thorvadul and Gylfi, ibid). In this sense, university education development should be enhanced to include equal representation of students from varied SES and gender, a proposal which may be difficult to accomplish but one that has been considered by respondents. The government of Kenya has continuously tried to bridge the gap of inequalities that exist in education in various ways and this fact cannot pass unrecognised by this study

5.2.6 Affirmative Action

It is evident that public systems of higher education worldwide are caught between increasing public and private demand for their products, rising per-student costs, and flat or even declining governmental revenues. The public demand emerges from the increasing recognition of higher education as a major engine of national economic growth and provider of individual opportunity and prosperity. The private demand, or enrollment pressure, especially in Africa and other developing countries begins in many countries with the sheer demographic increase in the traditional tertiary education age cohort, compounded by the increasing secondary school completion rates, which in turn increase the number of secondary school completers wanting to go on to higher education, further compounded by an expansion of what may be considered a college-going age cohort to include adults formerly by-passed by the system (Marcucci and Bruce, 2003; www.u-bourgogne.fr; www.springerlink.com). The flat or declining governmental revenue again, especially in most of Sub Saharan Africa and other very low-income parts of the world emerges from the sheer poverty that not only leaves little wealth to be taxed, but that also raises the opportunity costs of all public expenditures, which must compete with public sector needs such as elementary and secondary education, public health, public infrastructure, and other socially as well as politically compelling needs.

This is the social, political, and economic background of one of the most intractable challenges faced by higher education systems the world over: the challenge of reconciling the largely irreconcilable goals of expanding, on the one hand, both the capacity and the quality of higher education (both of which goals imply substantial additional revenue) with, on the other hand, the goal of increasing participation and the

equity of that participation (which also implies additional revenue) all within the increasingly pervasive context of decreasing governmental investment in higher education.

In response, most countries have turned to forms of private revenue supplementation for the support of their expending higher educational needs, the most important of which is *cost-sharing*, or the shift in higher educational costs from being borne mainly or even entirely by governments, or taxpayers, to being shared by governments, parents and students (Bruce 1986, 2003, 2004a). The most important of these supplementary revenue streams, while not without problems and political resistance, are tuition fees paid for by parents (or larger extended family members) and students themselves, which are mainly deferred, or borrowed.

In Kenya and other East African countries, affirmative action has taken different approaches. One of these approaches is the nature and mechanics of the free or low tuition fee cut-off (JAB students) vis-à-vis the self paying fee basis (non-JAB students). However, in all three East African countries, the cut-off points for sponsored admissions are set based on government estimates of the number of students that they are able to support. Particularly in Kenya and Uganda, it is rapidly becoming more accurate to think of the university financing system as one in which most students have to pay tuition fees, while only a few academically excellent students receive merit scholarships (Carrol, 2004: 17).

In Makerere University, Uganda, there is a scheme for affirmative action for enrolment for females to the university. The scheme enhances and subsequently increases female enrolment by giving a 1.5 bonus points over their results. This is done to all females who have scored the minimum university entry grade. This scheme has been going on since 1990 and the results have been noticeable (ww.fawe.org). The percentage of women getting enrolled increased from 24% in 1989 to 30% in 1990 and to 34% in 1995 (ww.fawe.org). The scheme has, therefore, succeeded in increasing women's numeric strengths in the student body, particularly in the faculties of Arts, Social Sciences and Education.

Kenya in particular, students who attain the prescribed cut off point (COP) are admitted into the regular state supported programmes by the Joints Admissions Board (JAB), a non-statutory body made up of the Vice Chancellors, Deputy Vice Chancellors, Principals and Deans of public universities and representatives from the Ministry of Education. In principle, Kenya Certificate of Secondary Education (KCSE) holders with C+ and above qualify for public university admission; however, this cut off point depends on the total public university student capacity of about 10,000 students. Therefore, the JAB sets the entry cut off for government-sponsored students from year to year. If a greater proportion of the students have high passes in a particular year, the cut-off point will be higher and vice versa Table 4.50 on (p. 150). On the other hand, the Non-JAB students who are admitted on a self-paying basis gain entry to universities on the basis of different criteria that vary from university to university. At the very initial stages of the Module II programmes, candidates had to be Form Four school leavers who met the minimum entry requirement of C+ but could not meet the entry cut off point for government sponsorship. In an attempt to increase the number of self-sponsored students, various institutions made admission conditions more flexible and accepted students from different academic backgrounds including holders of A level certificates, Kenya Advanced Certificate of Education (KACE) from the old 7-4-2-3 system, P1 holders, diploma holders, and certificate holders from other governmentally-recognized institutions. Further, the conditions for admission into postgraduate programmes have since been eased to allow holders of pass/lower second class qualifications to enroll in masters programmes provided they have a given number of years experience in a profession relevant to the area of study (Otieno, 2004).

According to the MoE report on Education and Training, it was recognized that university education plays a crucial role in national development (Republic of Kenya, 2003). The report stated that, over the years, however, the percentage of students transiting from secondary schools to university had been declining. An ever-growing challenge relates to the mismatch between types of graduates and demands from the industry. In the past, quality of university education had also been constrained by inappropriate equipment and technology due to the ever-changing world of work. The government policy priority was at that time, to ensure quality in the sub-sector in order to

meet the demands of the economy. As such, the policy focused on internal efficiency enhancement, sustainability and assurance of quality and relevance in training. The report recommended the following to the education sub-sector:

1. In order to enhance access and equity, the MoE through CHE should plan for an expansion programme of public and private universities to cope with the growing and projected numbers of qualified students. Available technology should be used to provide quality distance and open learning; and the necessary legal and institutional framework required to be established for the development of distance education in order to enhance equity.
2. CHE and the relevant stakeholders should review the current rules and regulations with a view to enhancing and facilitating the expansion and establishment of universities.
3. The Joint Admissions Board (JAB) should admit students to public universities to available teaching facilities in those institutions.
4. The MoES&T, through HELB, should put in place a comprehensive scholarship and loan systems for all students who meet the admission cut-off points to enable them study degree courses and in universities of their choice.
5. The CHE should devise a well-defined credit transfer system that would enable students to move and change between universities and, also, be admitted from middle level colleges through credit transfers.
6. The Government should develop HELB into a more efficient and robust financial institution, open to more clients and sources of funds. This will enable HELB to support all learners including those of Module II (parallel programmes) and thus encourage skills upgrading amongst workers.

All these were pockets of affirmative action intended to be implemented for the purposes of enhancing access and equity in university education in Kenya. However, majority of them are yet to be done.

According to the Kenya Higher Education Profile, gender and regional imbalance have shaped and continue to shape the development of higher education in Kenya. The profile further revealed that the proportion of girls enrolled continues to decline as they

move up the educational ladder with female students accounting for only about 30 percent of total enrolment in public universities. Affirmative Action (AA) has been a noble undertaking in ensuring that the girl child has a competitive edge against the boy counterpart who faces fewer obstacles in his pursuit for better education. The AA policy has seen entry points required for a student to be admitted in the university's regular programme lowered for female candidates. According to the Education in Kenya - Wikipedia, the free internet encyclopaedia, an estimated (85%) of all children in Kenya attend primary school, (24%) of these children attend secondary school and only (2%) of them finally attend higher institutions (http:/awcfs.org 2007). However, even after being among the fortunate 2 percent, a good number of females only have their admission letter and perhaps a first year's transcript to show for it, having fallen victim to the perils of life at the universities (http:/awcfs.org ibid). Other initiatives have been undertaken to ensure not only the girl child access education; but also stays in school to complete it. One such initiative is the provision of free sanitary towels to primary school girls. All these initiatives have been in place to improve a girl's performance in school. Once she joins the university, the society assumes she has succeeded but this is normally the beginning of either her tribulations or joy. 'One of the main problems facing students in the university of Nairobi as in other universities in Kenya is food', said Doctor Sobbie Mulindi, a senior lecturer at the University of Nairobi (http:/awcfs.org ibid). Female students have more basic needs than the male students, he said. Therefore, the pressure to get through each day leaves the female student vulnerable to manipulation and sexual harassment.

The government of Kenya places significant importance on university education for national development and training of highly qualified professionals, technicians and scientists who will provide solutions to the problem of underdevelopment. The policy priority for university education is to expand opportunities to all deserving Kenyans. The government seeks to expand available places in public and private universities. The policy on gender mainstreaming in universities has also received attention. A gender education policy framework that provides for planning and implementation of gender responsive education programme was mooted in 2003 (Republic of Kenya, 2005). The

key gender concerns highlighted in education include disparities in enrolment, retention and transitional rates, negative socio-cultural practices and attitudes which inhibit girls' access, learning environments that are not conducive to girls due to pregnancy and early marriages.

A major contribution to the gender debate in Kenyan education system is the publication of the current policy framework for the Kenya Education Sector Support Programme 2005-2010, entitled 'delivering Quality Education and Training to All Kenyans'. It is noteworthy that this policy recognises gender equality as being central to the attainment of the EFA and MDG and has proposed a number of strategies to address gender concerns in education (Republic of Kenya 2005). This notion indicates that the government of Kenya is committed to ensuring gender parity. This study has further revealed that despite the government effort in tackling gender inequalities in public university education, some of the problems that characterised female education a decade ago still persist. This includes disparities at the university level with regard to enrolment and participation.

This study was conducted at a time the Narc government in Kenya established a women's fund in the year 2007. It is hoped that the KSh 2 billion women's development fund set aside by the government will reach the female students in the university. Hopefully female legislators and ordinary Kenyans will set up programmes to ensure that the female gender rises above the challenges in the higher institutions of learning. Otherwise the current situation leaves much to be desired.

5.3 Conclusions

Gender disparity frustrates the achievement of gender equality and the efforts to empower females through education. Policies on gender mainstreaming are not being enforced as expected. Total enrolment of undergraduate students in the MII platform is rapidly increasing, in some institutions surpassing the MI. Majority of these students in both MI and MII come from middle and higher socio-economic backgrounds. The high enrolments is a confirmation of the high demand in university education, but more so, the importance that people attribute to it, coupled with the willingness to pay for what was

otherwise catered for by the Kenyan government wholly since independence till the mid 90s. The students from low income and poor socio-economic backgrounds however, are locked out from university education. Providing educational opportunities to all Kenyan children at all levels is central to the government's Poverty reduction Strategy and the Plan for Economic Recovery. The government should therefore provide a clear window of opportunity to implement a forward looking university education policy and programme to accommodate students from the poor of the poorer families.

The increased capacity and increased institutional financial viability made possible by the additional revenue stream from the privately-sponsored students does not significantly increase accessibility in the sense of who goes on to the higher education in the absence of targeted grants and student loans, neither of which at present is available to the MII students.

The willingness of parents/guardians and/or beneficiaries to contribute towards university education of those who are attending on MII platform basis is a strong indicator that many of those now being admitted to the universities on MI platform, or governmental sponsorship, would pay a modest tuition fee.

The pressure on university education to match market demands is on the rise among institutions and students and the faster university programmes are targeted towards increasing graduates bargaining power in obtaining employment, the better it would be for Kenya in terms of fighting the war against unemployment problem. This may be a motivating factor for the Kenyan citizen to appreciate university education as a way to escape real poverty issue, a fact that is entrenched in Kenya's households.

5.4 Recommendations

In this section, recommendations have been provided based on the findings of the study as outlined below:

5.4.1 Rationalise Student's admissions in relation to institutional physical and manpower capacities

In view of the rising student numbers in MII programmes, there is need to expand both physical facilities and manpower support commensurate with the increases in student numbers in the parallel and regular platforms.

5.4.2 Institute gender equity structures by both JAB and individual universities

Due to low enrolment among the female students, there is need to enhance their participation on both MI and MII platforms in science based programmes. This can be done through setting quotas for each gender in admissions for the two platforms. It is important to note that the recommendation of this study does not ignore affirmative action by different institutions, groups and departments in Kenya.

5.4.3 Establish credit/loan schemes to cover students enrolled on MII programmes

The government in collaboration with the private sector and other development partners should work on modalities that cover students in MII platforms to access credit for their tuition fees. This is particularly necessary because it is the unemployed students from middle class families that dominate both MI and MII programmes. Availing loans/credit to them would lower the burden on their families and necessitate more access to university education for this lot/group of students. The graduates from the system, on employment would be able to pay back the loan to support the organisation. In addition, HELB to further extend similar credit to students from lower class families who meet the entry requirement in order to increase the number of needy students admitted to university education.

5.4.4 Influencing university and national policy to popularise a female gender scheme: Affirmative action for enrolment of females at the University

The study recommends that the government should implement a policy of affirmative action, by instituting mechanisms in university admission to accelerate and improve the disadvantaged position of female students in higher education both in terms of increased enrolment and participation. Admitting a specified number of male and female students should be instituted by JAB and all public universities depending on their capacity to allow more female participation at the university level.. This could be done in collaboration with appropriate government departments and NGOs to support fully the success of the scheme.

5.4.5 Integration of MI and MII programmes should be enhanced to minimize equity gaps that are associated with isolated treatment depending on platform

This study recognises that integration of MI and MII may work well with those students who are unemployed and are able to attend full-time and day classes. However, the working class students may be bound to attend evening and weekend classes that appear flexible and able to accommodate their work schedules. For effective integration, admission criteria for MI and MII programmes need to be harmonised to improve on the calibre of students enrolled on MII platform.

5.4.6 Need for regular appraisal of degree programmes offered for purposes of quality assurance and repackaging them to meet market demands

Quality assurance activities should be established in repackaging both MI and MII programmes to make them appealing to the potential students and employers. This coupled with significant improvement on the university employees' terms of service in view of the increased workload (seen in terms of large class size) would probably motivate particularly academic staff and ensure improved quality of delivery. The study views this as a possible working model.

5.5 Issues for Further Research

In view of the study findings and the scope of the study, the following issues have been recommended for further research

i. A study to establish an explicit profile of MII students by age and qualification at the point of entry to the university.

ii. An investigation on the capacities/preparedness of public universities to run both parallel and regular platforms concurrently.

iii. Profiling of qualified KCSE graduates for undergraduate university admission, particularly those who miss university admission on both MI and MII platforms with a view of establishing the students' education investment possible options.

iv. Profiling of the differences in socio-economic backgrounds of undergraduate students enrolled in private universities and those in MII programmes in public universities.

v. A tracer study to establish academic and employment related successes of MII graduates.

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APPENDICES

Appendix One: Student Questionnaire

I. Background Information

i. University: _____ ii. Faculty: _____ iii. Year of Study: _____

iv. Degree Programme (tick one) Parallel/Module II/SSP _____ Regular/Module I _____

v. Type of Attendance (tickone): Full-Time ____ Part-Time: ____.vi. Sex: Male _____ Female: _____

vii. Marital Status: Married _____ Single _____ Divorced/Separated _____ Widowed _____

ix. Number or dependants, if any: _____ x. Occupation of parent/guardian _____

xi. Employment status: employed full time _____ employed part time _____ Not employed _____

xii. If employed, indicate income over the past one year in Kshs. _____

xiii. Type of secondary school attended (tick one)

☐ Private Public ☐ International ☐ Religious

xiv. Undergraduate Programme being studied (tick one)

☐ Education ☐ Medicine or other health profession ☐ Business Management or Computer Science
☐ Agriculture & Vet Medicine Social Sciences or Law ☐ Engineering & other technical degrees
☐ Arts (Humanities, languages etc) ☐ Other (specify)

xv. How would you describe: yours/your family or your parent's income/you and your spouse's or partner's income based on the following statements?

Your family or your parent's	Yours	You and your spouse's
☐ High income/high middle income (better off than most) ☐ Middle income (same as the most) ☐ Low income (poorer than most)	☐ High income/high middle income (better off than most) ☐ Middle income (same as the most) ☐ Low income (poorer than most) ☐ Not Applicable	☐ High income/high middle income (better off than most) ☐ Middle income (same as the most) ☐ Low income (poorer than most) ☐ Not Applicable

xvi. The highest level of education completed by your parents (tick one)

a) Father

☐ None
☐ Some primary school
☐ Completed primary school
☐ Some high school
☐ Completed high school
☐ Community or technical college
☐ Some community college or university
☐ Bachelor's degree
☐ Advanced professional degree
☐ Masters degree
☐ PhD
☐ Don't know

b) Mother

☐ None
☐ some primary school
☐ completed primary school
☐ some high school
☐ completed high school
☐ community or high school
☐ some community college or university
☐ bachelor's degree
☐ advanced professional degree
☐ masters degree
☐ PhD
☐ Don't know

xvii. Did you enter university education directly after your secondary education?

☐ Yes ☐ No

xviii. If No in (xvii) above indicate which of the following reasons apply to your situation?

	Very important	Important	Somewhat important	Not important at all	Cannot say/not applicable
a. I did not pass the university entrance exam					
b. I did not get into the programme/university I desired					
c. I had to work to earn money to cover my university costs					
d. I was more interested in earning money					
e. I was not interested in higher education at that point in time					
f. Getting married was more important to me					
g. My parents were unable to finance my education at that point in time					
h. Other reason (specify)					

II. Key Issues

1. Who pays for your fees/charges for the degree programme you are undertaking? (It is possible to indicate more than one category if applicable)

☐ Parent/Guardian ☐ elf ☐ ELB ☐ ther (specify): _____

2. Which degree programme did you apply for and in which university?

a) Programme_____ b). University_____

3. Would you say the degree programme you are currently undertaking is the course you applied for and the one you preferred?

a) Applied for b) Preferred

☐ Yes ☐ No ☐ Yes ☐ o ☐

4. In your opinion, why do you think you were **not admitted** for the degree programme you preferred? **(Only for those who answered NO in no. 3b above)**

_____

_____

5a. Would you have preferred to pursue your current undergraduate degree programme at a different university?

Yes ☐ No ☐

5b. Which university would it have been? _____

Briefly explain_____

_____

6a. Comment on things that you particularly like about regular and parallel degree programmes in your university and other public universities?

Parallel

Own university_____

_____

Other university_____

Regular

Own university _____

_____

Other university _____

7a. What things do you particularly dislike about regular and parallel degree programmes?

Parallel

Own university_____

_____

Other university_____

_____

Regular

Own university _____

_____

Other university _____

_____

7. Below are two statements on **regular** programmes. Indicate your degree of agreement with each statement in the appropriate column.

	Strongly agree	**Agree**	**Nether agree nor disagree**	**Disagree**	**Strongly disagree**
Appropriate content					
Accessible to all					
Adequate class size					
Better facilities					
Balanced in terms of gender					
Consist of students from all socio-economic background					
Selected students only					
Adequate contact hours					
High demand courses					
Quality education					
Market driven degrees					

8. Below are two statements on **parallel** programmes. Indicate your degree of agreement with each statement in the appropriate column.

	Strongly agree	**Agree**	**Nether agree nor disagree**	**Disagree**	**Strongly disagree**
Appropriate content					
Accessible to all					
Adequate class size					
Better facilities					
Balanced in terms of gender					
Consist of students from all socio-economic background					
Selected students only					
Adequate contact hours					
High demand courses					
Quality education					
Market driven degrees					

10. **Based on your programme of study/school/faculty**, indicate the relationship between parallel and regular undergraduate degree programmes in terms of content using the following statements:

	a) Parallel					**b) Regular**				
	Very similar	Similar	Somewhat similar	Very different	Somewhat different	Very similar	Similar	Somewhat similar	Very different	Somewhat different
Education										
Medicine or other health sciences										
Business management or computer science										
Agriculture & vet medicine										
Social sciences or Law										
Engineering and other technical degrees										
Arts (Humanities, Languages)										
Other (specify)										

11. What changes would you want put in place for parallel/regular degree programmes?

Parallel **Regular**

i. _____

ii. _____

iii. _____

12. What recommendations can you make to enhance equity in university education in public universities between parallel and regular degree Programme s?

Parallel **Regular**

i. _____

ii. _____

iii. _____

iv. _____

Thank you

Appendix Two: Academic Staff Questionnaire

I. Background Information

i. University: _____ ii. Designation: _____

II. Key Issues

1. What are your experiences in teaching the parallel/regular undergraduate students in terms of the following?

	Regular	**Parallel**
i)	Number of students	
ii)	Programme content	
iii)	Male & Female participation	
a) Male		
b) Female		
iv)	Suitability of lecture halls	
v)	Student socio-economic backgrounds	
vi)	Contact hours:	

2. What is your view of the parallel/regular undergraduate degree programme in public universities in terms of its appropriateness and equitability?

Parallel	**Regular**
i. Appropriateness	
ii. Equitability	

3. What would you say are the equity dimensions in parallel/regular undergraduate degree programmes with respect to the following degree courses?

Parallel	**Regular**
Education	
Arts, humanities & languages	
Engineering & technical degrees	
Medicine & other health professions	
Social sciences or law	
Business management or computer science	
Agriculture and Vet medicine	
Other (specify)	

4. What would you say are the main equity dimensions in parallel and regular undergraduate programmes? Briefly explain.

Parallel	Regular

5. Comment on particular differences you notice between parallel and regular undergraduate students along the following variables?

	Parallel	Regular
a.	Admission to programmes	
b.	Contact hours	
c.	Examination	
d.	University calendar	
e.	Loan and bursary awards	
f.	Student socio-economic status	
g.	Gender	
h.	Performance	
i.	Other (specify)	

7. What changes would you want to see put in place for parallel/regular degree programmes?

Parallel **Regular**

8. What policy recommendations can you make to enhance equity in university education in public universities between parallel and regular degree platforms?

Parallel **Regular**

Thank you

Appendix Three: Interview Schedule for Policy Makers and Education Experts

I. Background Information

i. Institution: _____ ii. Designation: _____

II. Key Issues

1.What is your opinion on the parallel undergraduate degree programmes in public universities in terms of its appropriateness, and equitability? Please explain.

i. Appropriateness_____

_____

ii. Equitability_____

_____

2. Briefly comment on the parallel and regular undergraduate degree programmes in terms of content, mode of delivery, quality, etc?

	Parallel	**Regular**
j.	Content_____	_____
	_____	_____
k.	Mode of delivery _____	_____
	_____	_____
l.	Quality _____	_____
	_____	_____
d.	Others (specify) _____	_____

3.What is the nature of administrative issues you experience with the parallel/regular degree students with reference to? **[For university administrators only]**

	Parallel	**Regular**
a.	Admission to programmes	
b.	Examination	
c.	Certification	
d.	University calendar	
e.	Loan and bursary awards	
f.	Student socio-economic status	
g.	Male/Female Students	
h.	Other(specify	

4. What equity dimensions do you notice between parallel and regular undergraduate students along the following variables?

	Parallel	Regular
i.	Admission to programmes	
j.	Examination	
k.	Certification	
l.	University calendar	
m.	Loan and bursary awards	
n.	Student socio-economic status	
o.	Male/Female Students	
p.	Enrolment	
q.	None	
r.	Don't know	
s.	Other (specify)	

5. What would you say are the equity dimensions in parallel/regular undergraduate programmes with respect to the following degree courses?

Parallel	Regular
Education	
Arts, humanities & languages	
Engineering & technical degrees	
Medicine & other health professions	
Social sciences or law	
Business management or computer science	
Agriculture and Vet medicine	
Other (specify)	

6. What changes would you want to see put in place for parallel/regular degree programmes?

Parallel	Regular

7. What policy recommendations can you make to enhance equity in university education in public universities between parallel and regular degree platforms?

Parallel

Regular

Thank you

Appendix Four: Document Analysis Guide

1. Admission/entry requirements (enter mean grades)

Academic years	UNIVERSITY: Moi, Kenyatta, Nairobi							
	JAB				DEANS COMMITTEE			
		Regular	Parallel		Parallel		Regular	
	M	F	M	F	M	F	M	F
2001/02								
2002/03								
2003/04								
2004/05								

2. The reasons that made JAB/ DEANS COMMITTEE decide on the entry grades for the following academic years?

2001/2002_____

_____

_____

2002/2003_____

_____

_____

2003/2004_____

_____

_____

2004/2005_____

_____

_____

3. Total enrolment in parallel and regular platforms by gender and degree programme

a. Enrolment by gender (enter figures)

Academic years	UNIVERSITY: Moi, Kenyatta, Nairobi							
		Regular	Parallel		Parallel		Regular	
	M	F	M	F	M	F	M	F
2001/02								
2002/03								
2003/04								
2004/05								

b. Enrolment by degree programme (enter figures)

Degree programmes	UNIVERSITY: Moi, Kenyatta, Nairobi																
	2001/02				2002/03				2003/04				2004/05				
	Parallel		Regular		Parallel		Regular		Parallel		Regular		Parallel			Regular	
	M	F	M	F	M	F	M	F	M	F	M	F	F	M	F	M	F

Appendix Five: DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES by ROBERT V. KREJCIE University of Minnesota, Duluth DARYLE W. MORGAN Texas A. & M. University; EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT 1970, 30, 607-610.

The ever increasing demand for research has created a need for an efficient method of determining the sample size needed to be representative of a given population. In the article "Small Sample Techniques," the research division of the National Education Association has published a formula for determining sample size. Regrettably a Table has not bee available for ready, easy reference, which could have been constructed using the following formula.

$$s = X^2NP(1-P) \div d^2(N-1) + X^2P(1-P).$$

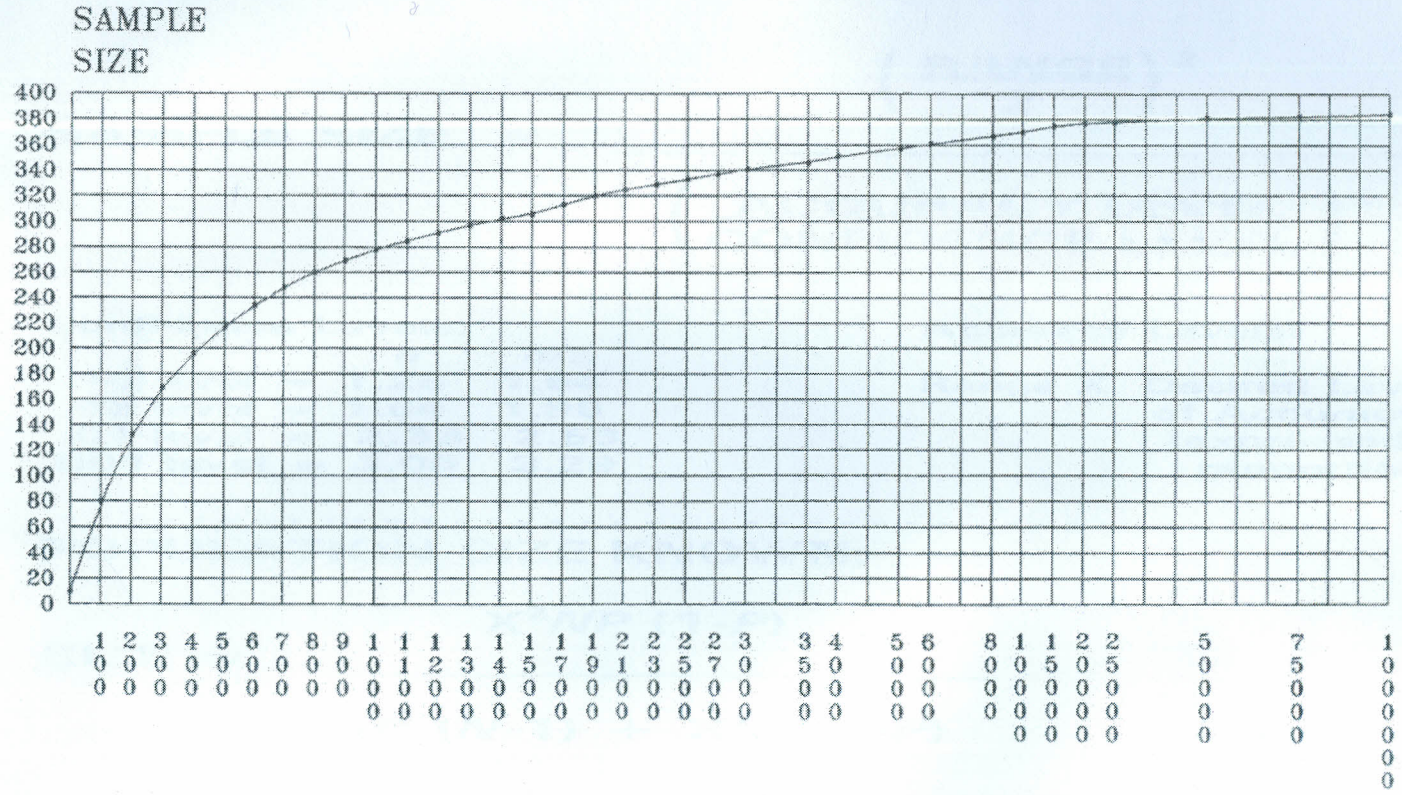
s = required sample size.
X^2 = the Table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).
N = the population size.
P = the population proportion (assumed to be .50 since this would provide the maximum sample size).
d = the degree of accuracy expressed as a proportion (.05).
No calculations are needed to use Table 1. For example, one may wish to know the sample size required to be representative of the opinions of 9000 high school teachers relative to merit pay increases. To obtain the required sample size enter Table 1 at N = 9000. The sample size representative of the teachers in this example is 368. Table 1 is applicable to any defined population. The relationship between sample size and total population is illustrated in Figure 1. It should be noted that as the population increases the sample size increases at a diminishing rate and remains relatively constant at slightly more than 380 cases.

Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.— *N* - is population size, *S* - is sample size.

SAMPLE SIZE VS. TOTAL POPULATION



Assumes Standard Error = .05

FORMULAE FOR DETERMINING NEEDED SAMPLE SIZES

POPULATION SIZE UNKNOWN:

$$\text{SAMPLE SIZE} = \frac{\left(\frac{\text{RANGE}}{2}\right)^2}{\left(\frac{\text{ACCURACY LEVEL}}{\text{CONFIDENCE LEVEL}}\right)^2}$$

Confidence Levels:

	α	$\alpha/2$
.10 level =	1.28	1.64
.05 level =	1.64	1.96
.01 level =	2.33	2.58
.001 level =	3.09	3.29

Accuracy Levels:

Range X Desired Level of Accuracy (expressed as a proportion)

POPULATION SIZE KNOWN:

$$\text{SIZE} = \frac{X^2NP\,(1-P)}{d^2\,(N-1) + X^2P\,(1-P)}$$

X^2 = table value of Chi-Square @ $d.f. = 1$ for desired confidence level
.10 = 2.71 .05 = 3.84 .01 = 6.64 .001 = 10.83
N = population size
P = population proportion (assumed to be .50)
d = degree of accuracy (expressed as a proportion)