HIGHER EDUCATION LOAN AWARD AND PARTICIPATION OF PRIVATELY SPONSORED UNDERGRADUATE STUDENTS IN PUBLIC UNIVERSITIES IN WESTERN KENYA

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DECLARATION

This Thesis is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

Signed ……. Date ……..……

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SUPERVISORS CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance of Masinde Muliro University of Science and Technology a Thesis entitled: **"Higher Education Loan Award and Participation of Privately Sponsored Undergraduate Students in Public Universities in Western Kenya."**

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DEDICATION

To my beloved parents, Mr. Fredrick Ogenga Omule and Mrs. Jane Akumu Ogenga.

You are the wind beneath my wings!

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To my wife Laura, children, parents, brothers, sisters, relatives and friends whose names I cannot all put here, I am very grateful for your love, support and sacrifices. I am because we are!

To the Almighty Father, you are truly EBENEZER!

ABSTRACT

Participation in higher education in Sub-Saharan Africa is not only the lowest in the world but also highly selective. In Kenya specific, in spite of policy interventions designed to widen participation, public higher education has been dominated by students from the highest income quintiles. Consequently, in a bid to eliminate the socio-economic effect in participation in higher education, the government widened the scope of the students' loan scheme in 2008 to include financially needy privately sponsored students in public universities. This study sought to determine the effect of higher education loan amount on participation of privately sponsored undergraduate students in public universities in western Kenya. Specifically, the study objectives included: to determine the effect of higher education loan amount on the type of programme of study pursued by privately sponsored undergraduate students; to determine the effect of higher education loan amount on frequency of class attendance by privately sponsored undergraduate students; and, to assess the living conditions of privately sponsored undergraduate higher education loan recipients in public universities in western Kenya. Classical liberal theory formed the basis for which this study was undertaken. The study adopted ex post facto research design and employed mixed approach in data collection and analysis. The target population comprised of all the 6,264 privately sponsored undergraduate higher education loan recipients of 2012/2013 cohort and all the 10 deans of students in the 10 public universities in Western Kenya. Stratified proportionate to size, random, and purposive sampling techniques were employed to pick a representative sample of 520 respondents comprising of 517 privately sponsored higher education loan recipients of 2012/2013 cohort and 3 deans of students drawn from three public universities in the region. Data from student respondents was collected with the aid of questionnaire while those from Deans of students were gathered using interview schedule. The instruments' validation was undertaken by the supervisors. Reliability of the questionnaire was determined through a pilot study where a Cronbach alpha co-efficient of 0.877 was obtained. Frequency distributions and percentages, measures of central tendency and dispersion, pairwise correlation, chi square logistic and multinomial logistic regression analyses were used to analyze quantitative data. Qualitative data was however analyzed thematically by objectives. The findings were presented descriptively and in tables. The findings of the study showed that higher education loan amount had no statistically significant effect on type of program of study by privately sponsored undergraduate students in public universities in western Kenya. The findings of the study further showed that higher education loan amount had no statistically significant effect on frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya. Last but not least, the findings of this study revealed that the living condition for a majority of privately sponsored higher education loan recipients in public universities in western Kenya was poor. Consequently, the study recommends for increase of higher education loan amount and a review of award criteria with the view of differentiating the amounts inline with the cost of each privately sponsored program. The study further recommends for timely disbursement of the loan amount that should also cover living expenses of privately sponsored students just like in the case of their government sponsored counterparts. Moreover, through public-private partnership, the universities should construct more halls of residence within campus so that the students can live in learning condusive environment.

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LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used to refer to the respective concepts and names in this study:

EcoBus	Economics and Business related disciplines
Ed. A & SS	Education, Arts and Social Sciences
HE	Higher Education
HELB	Higher Education Loans Board
JAB	Joint Admissions Board
JOOUST	Jaramogi Oginga Odinga University of Science and Technology
KUCCPS	Kenya Universities and Colleges Central Placing Service
MMUST	Masinde Muliro University of Science and Technology
PSSP	Privately Sponsored Students Programme
UoE	University of Eldoret
SES	Socio-economic status
STEM	Science, Technological, Engineering and Mathematics
MCA	Multiple Component Analysis
WFP	Word Food Program

CHAPTER ONE

INTRODUCTION

1.0 Overview of the Chapter

This chapter presents background to the study, statement of the problem, purpose, objectives, hypotheses and research questions. It also contains the scope, limitations, significance, justification, theoretical framework, conceptual framework, assumptions and operational definitions of terms.

1.1 Background to the Study

Over the last four decades, participation in higher education has substantially expanded in Sub-Saharan Africa (Annunziata & Kramer, 2015). In particular, between the years 2000 and 2010, higher education enrolments more than doubled increasing from 2,344,000 to 5,228,000 students (McCowan, 2014). Moreover over the same period of time, comparatively the higher education system in the region expanded at almost twice the global rate (ibid).

Be that as it may, participation in higher education in Sub-Saharan Africa is by far the lowest in the world (Bloom, et al, 2006). For instance, enrolment rate at higher institutions of learning in the region stands at only 7% against the world's 29% (McCowan, 2014). Furthermore, despite decades of policies designed to increase not only the number of young people entering higher education, but also the proportion of students from lower socio-economic backgrounds and other under-represented groups in the region, available statistics indicate that in many countries, participation in higher education is still dominated by students from the highest income quintiles (Kasozi, 2009; David, 2011; Boit, 2012).

In Kenya specific, higher education inequality between the 'haves' and 'have-nots' is overwhelmingly high (UNESCO, 2005; Keriga et al, 2009). Most of the limited capacity in both public and private universities is filled up by students from high and middle socio-economic backgrounds (Boit, 1998; Owino, 2003; Otieno, 2007, Odebero, 2007). The situation has further been complicated by the introduction of cost sharing between the government and students in financing public higher education and the liberalization of higher education where privately sponsored students meet full program costs and living expenses (Salmi, 2010).

Although introduced on the basis of economically genuine reasons, cost sharing adversely affected participation of the majority of youngsters from low income families and manifested in an alarming aspect of unequal access to higher education (Musera, 2014; Boit, 2012; Odebero, 2008; Kasozi, 2009; Otieno, 2007; Owino, 2003; Pontefract & Hardman, 2005). The relatively low level of participation from lower income groups attests to the fact that cost was a major barrier to participation in higher education.

However, in a growing number of countries, governments have embraced student loan schemes as most preferred mode of financing higher education (Lorraine et. al, 2005; Ziderman, 2004). This is because they are able to contribute to the solution of a range of pressing policy problems that the governments encounter. Apart from their ability to relieve pressures on national budgets by facilitating greater cost sharing (Psacharopoulos, Tan and Jimenez, 1987), student loans have the potential of increasing access and participation in higher education by students from low socio-economic backgrounds (Salim, 2010; Munavu. et al, 2008; www.helb.co.ke).

As such, in a bid to widen participation, the Kenyan government resorted to loaning financially needy students pursuing higher education in Public Universities (http://www.helb.co.ke). The advantage of loan scheme is that it shouldn't deter potential student from socio-economically disadvantaged backgrounds from higher education participation more than other students, since loan repayment depend on the future ability to repay, rather than current financial circumstances (Heller, 2008).

Nevertheless, in spite of the loan scheme, participation in higher education in Kenyan public universities continued to be markedly differentiated in terms of socio-economic groups as public universities were dominated by students from highest income quintiles (Boit, 2012; Kasozi, 2009; Otieno, 2007, Owino, 2003). Moreover, even where students from low socio-economic status got opportunity to join the public universities, enrolment in competitive programmes in the areas of science, technology and commerce appeared to be heavily skewed in favour of students from medium and high socio-economic backgrounds (Odebero, 2008). This is because the public universities' joint admissions criteria is quite restrictive and favour the sons and daughters of wealthy families, who attend elite secondary schools and therefore get higher grades which guaranteed them university admissions to competitive programmes of study at the expense of their counterparts from low income families (Otieno, 2004).

Consequently, self-sponsored programmes have become the only avenue left for the majority aspiring students who miss out on the direct admission by the Kenya Universities and Colleges Central Placement Service. As such, the blanket assumption that self-sponsored students are financially able does not hold weight here (Otieno, 2004). It is against this backdrop that HELB widened its scope in 2008 by advancing

loans to financially needy privately sponsored students in higher education including in public universities. The loan award ranges from Kshs 35,000 to Kshs 60,000 depending on the applicant's level of financial need as assessed by Higher Education Loans Board (http://www.helb.co.ke).

Be that as it may, under current scheme the range of the amount of loan available for privately sponsored students is the same as that of their government sponsored counterparts in spite of the fact that fees for privately sponsored students pay more in terms of fees at the universities. Consequently, the loan only covers about 40 percent of the tuition fee for the privately sponsored students (Otieno, 2004). Furthermore, unlike the facility given to their government sponsored students which caters for both tuition fees and subsistence expenditure, the loan given to privately sponsored counterparts is wholly paid directly to the respective universities as tuition fees. The individual privately sponsored student is thus expected to bridge the gap in terms of fees and living expenses. Moreover, in many public universities privately sponsored students also miss out on certain privileges such as the highly subsidised accommodation within the university which is a preserve of government sponsored students. As such, privately sponsored programmes remain costly to the majority poor.

1.2 Statement of the Problem

Public universities in Kenya traditionally only admitted government sponsored students whose tuition fees and cost of stay at the university was catered for through direct capitation and higher education administered by Higher Education Loans Board (HELB). As such, those who met the criteria were guaranteed program of study of their choice and comfortable stay at the university irrespective of the costs.

However, the system was selectively restrictive which only allowed for admissions of a few best performing immediate high school graduates. This greatly restricted participation in higher education.

In a bid to enhance and widen participation, the government allowed public universities to mount privately sponsored programmes, commonly referred to as parallel degree programmes. However, these programmes attract higher fees which also vary with discipline. Consequently, left on their own, students from lower socio-economic backgrounds would find it difficult to enroll into the more competitive costly programmes of study. Furthermore, since the introduction of privately sponsored programmes in public universities, poor living conditions and financial hardship among students have been reported. Studies show that many students lived in deplorable conditions and engaged in income generating activities as survival mechanisms. Sadly, this was to the detriment of their studies since they engaged in such ventures when they were supposed to be engaged fully in academic work.

It is against this backdrop that the government of Kenya expanded the scope of HELB to cover privately sponsored students in public universities so as to enable students from lower socio-economic backgrounds to participate in an appropriate form of higher education, without unacceptable deprivation, work schedule, or sacrifice. The effect of the higher education loan award on participation of privately sponsored undergraduate students in public universities has not been established.

1.3 Study Purpose

The purpose of this study was to determine the effect of the higher education loan award on participation of privately sponsored undergraduate students in public universities in Western Kenya.

1.4 Objectives of the Study

The objectives of this study were:

i. To determine the effect of higher education loan amount on type of programme of study pursued by privately sponsored undergraduate students in public universities in western Kenya.

ii. To determine the effect of higher education loan amount on frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya.

iii. To assess the living conditions of privately sponsored undergraduate higher education loan recipients in public universities in western Kenya.

1.5 Research Hypotheses

This study was guided by the following hypotheses.

i. Ho_1: Higher education loan mount has no statistically significant effect on the type of program of study privately sponsored undergraduate students pursue in public universities in western Kenya.

ii. Ho2: Higher education loan amount has no statistically significant effect on frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya.

1.6. Research Question

i. How is the living condition of privately sponsored undergraduate higher education loan recipients in public universities in Kenya?

1.7 Scope

This study sought to determine the effect of higher education loan award on participation of privately sponsored undergraduate students in Kenyan public universities. In this study, participation in higher education was measured by the type of programme students were enrolled in, class attendance and their living conditions. Data was collected from 2012/2013 cohort of regular privately sponsored undergraduate higher education loan recipients in public universities in Western Kenya covering former provinces of Western, Nyanza and part of Rift valley.

1.8 Limitations of the Study

This study was limited by the following factors:

i. Data on the amount of higher education loan awarded to individual privately sponsored undergraduate students was sought from the students themselves. Document analysis of official records was not undertaken. However, the respondents were assured of their confidentiality so as to provide accurate information.

ii. Data on various aspects of participation in higher education such as type of program of study and lecture attendance was gathered from the students themselves. Document analysis of official records was not undertaken. However, the respondents were assured of their confidentiality so as to provide accurate information.

iii. Data on socio-economic status of privately sponsored higher education loan recipients was sought from the students themselves. There was no home visitation to verify the information. However, the respondents were assured of their confidentiality so as to provide accurate information. Besides, Multiple

Component Analysis (PCA) was used to weigh an array of proxies to effectively captured student's socio-economic status.

iv. The study was conducted only in the main campuses of fully fledged public universities in Western Kenya. Constituent colleges, campuses, study centres and other public universities were left out. However, stratified proportionate sampling technique was employed to ensure sample representativeness of the entire population.

v. Data was collected only from 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients in the public universities. Other cohorts were left out yet they could have vital information on their participation in higher education. The justification for the choice of 2012/2013 cohort of privately sponsored higher education loan recipients as primary respondents was in the fact that they were the only single group across all disciples that were in session that had been in the university system for the minimum required period of four years to complete undergraduate degree. As such, their participation in higher education could adequately be evaluated. Furthermore, stratified proportionate sampling technique was employed to ensure sample representativeness of the entire population.

1.9 Significance of the Study

This study provides the government, universities, parents and students with data on the effect of higher education loan award on participation of privately sponsored undergraduate students in Kenyan Public Universities. This would form a basis on which policy issues regarding widening participation through financing of higher education would be made. More specifically, it is hoped that the findings of this study

would provide feedback to the government on the effect of mean higher education loan amount on type of program of study pursued by privately sponsored undergraduate students, other factors notwithstanding.

The findings on the effect of mean higher education loan amount on frequency of class attendance by privately sponsored undergraduate students in Kenyan Public Universities may form basis on which policy interventions can be initiated to improve class attendance and quality of higher education in public universities through financing.

Furthermore, findings on the living conditions of privately sponsored undergraduate higher education loan recipients may provide insights to the government and parents on the state of condition the students live in. This may form a basis on which financing policy interventions can be initiated to improve the conditions under which privately sponsored students live.

1.10 Justification of the Study

Studies show that participation in higher education in Kenya is selective, depending on academic preparation and financial ability. Students from high socio-economic background account for up to three quarters of university student population in Kenya (Otieno, 2007; Odebero, 2007; Musera, 2014). Yet social justice and equity are important tenets of the Kenyan constitution (Republic of Kenya, 2010). Besides, the social pillar of Vision 2030 seeks to build a just and cohesive society with social equity in a clean and secure environment (www.vision2030.go.ke).

Studies on participation in higher education have largely been descriptive (Nigel Palmer, Emmaline Bexley and Richard James, 2011), qualitative (Otieno, 2004; Mwinzi, 2002) in nature or conducted among the government sponsored university

students (Odebero, 2008). However, privately sponsored programmes are comparatively more expensive and beyond reach for the majority in the absence of a financial intervention such as student loan scheme. It was therefore critical that this study be undertaken to establish how higher education loan amount enabled privately sponsored students to participate in higher education their social classes notwithstanding.

1.11 Theoretical Framework

This study was guided by the Classical Liberal Theory of Equal Opportunity in an attempt to determine the effect of higher education award on participation of privately sponsored undergraduate university students in Kenyan public universities. The classical liberal theory states that social mobility will be promoted by equal opportunity of education. However, available statistics indicate that in Kenya and many Sub Saharan Countries, participation in higher education is selective, depending on academic preparation and financial ability (Owino, 2003; Otieno, 2007, Odebero, 2007; Kasozi, 2009; David, 2011; Boit, 1998; 2012).

Be that as it may, higher education financing mechanisms should aim to prevent market failure in higher education by minimizing the financial barriers to participation as it is in everyone's interest that no one with the potential to succeed in higher education is put off. In specific, student loan has been used widely to enhance and widen participation in higher education for students from humble backgrounds. The advantage of loan scheme is that it shouldn't deter potential student from disadvantaged backgrounds from university participation more than other students, since loan repayment depend on the future ability to pay, rather than current financial circumstances (Heller, 2008). As such, targeted at disadvantaged groups, subsidized

loans schemes can lead to greater access and participation of the poor to university education, thus contributing to improved social equity as advocated by classical liberal theory of equal opportunity.

It is against this backdrop that the government of Kenya expanded the scope of HELB to cover privately sponsored students in public universities so as to enable students from lower socio-economic backgrounds to participate in an appropriate form of higher education. This study therefore sought to determine the effect of higher education loan award on participation of privately sponsored undergraduate students in public universities in Kenya.

Besides this current study, other scholarly researches on participation in education have also used classical liberal theory of equal opportunity. They include Opere (2015), Sava & Orodho (2014), and Omare (2013).

1.12 Conceptual Framework

This study was guided by a conceptual framework that depicts the interplay of independent, dependent and control variables under investigation. Figure 1 presents the interaction of the variables.

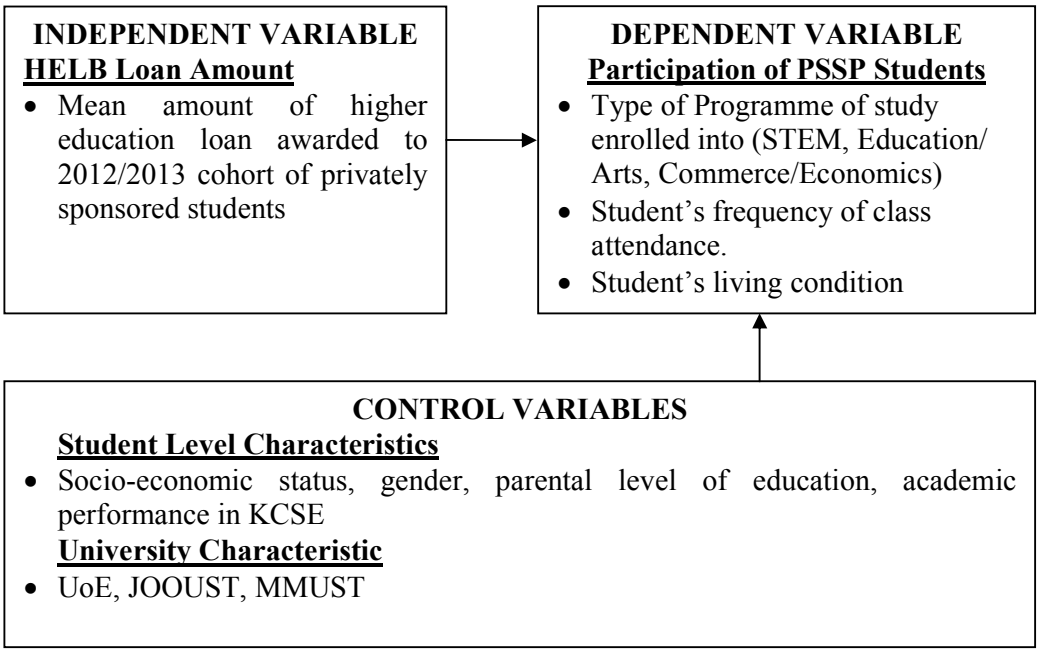

Figure 1: Conceptual Framework

Source: Researcher, 2016

On one hand, mean amount of higher education loan awarded to privately sponsored undergraduate students was treated as the independent variable. On the other hand, participation of privately sponsored higher education loan recipients in higher education was considered as the dependent variable. Since one's purchasing power is a major determinant of demand for education, it was expected that the amount of higher education loan awarded to privately sponsored undergraduate students would affect their participation in higher education since the individual students were required to meet the direct and indirect cost of their higher education. Participation entails empowerment of a student not just to secure admission into the university but to enroll and be retained in preferred programme of study without unnecessary personal deprivation, unnecessary work schedules or unacceptable sacrifices. As such,

it was expected that the amount of higher education loan would have had effect on the constructs of participation in higher education including type of programme enrolled, class attendance and living conditions. These constructs were investigated as subsets of the dependent variable in this study.

However, in order to determine the effect of the independent variable on the dependent variable, other factors that would have affected participation of privately sponsored higher education loan recipients were controlled for. These included the university characteristics and individual student-level characteristics such as gender, previous educational attainment at secondary school level (KCSE), parental education and socio-economic status.

Data was therefore collected on the dependent, independent and control variables. The interplay of variables under investigation as depicted in Figure 1 was then analyzed descriptively and inferentially using multinomial logistic regression analysis which enabled sequential modeling of the effect of mean amount of higher education loan on participation of privately sponsored undergraduate students while controlling for students' and university characteristics.

1.13 Assumptions of the Study

This study was carried out on the basis of the following assumptions:

i. Cost was the major determinant of participation in higher education.
ii. All privately sponsored loan recipients were well informed of their socio-economic status.
iii. All privately sponsored higher education loan recipients preferred to enroll in more competitive high cost programmes if resources allowed.

iv. The respondents gave accurate information on higher education loan amount and various aspects of participation in higher education.

1.14 Operational Definition of Terms

For the purpose of conducting this research, the following terms and concepts were operationalized as follows:

Class Attendance:

Refers to physical presence by student during instructional sessions in the public universities

Cohort:

Refers to a group of students who enroll in the first grade of university cycle at the same time and went through the same learning experiences

Deferment of Studies:

Refers to temporary withdrawal from studies on financial grounds until such a time that conditions will be favorable

Equity:

Refers to fair distribution of HELB loan to recipients from different socio- economic status

Higher Education Loan:

Refers to credit provided by the government to financially needy students in Kenya undertaking a programme of study at higher institution of learning.

Higher Education Loan Award:

Refers to allocation of specific amount of loan to individual undergraduate privately sponsored student in public university which range from Ksh. 35000 to Ksh. 60,000

Income Generating Activities:

Refers to business enterprise or any other form of gainful employment such as hawking, retailing and work-study that privately sponsored undergraduate students engage in for livelihood

Living Condition:

Refers to circumstances of a student' life as characterised by state of accommodation facility, level of personal expenditure on food and other basic items, sacrifices made, and, engagement in income generating activities as a coping mechanism.

Type of Programme of Study:

Refers to area of specialty that privately sponsored undergraduate higher education loan recipient pursues. In this study, types of program of study were grouped in three broad areas of STEM, Economics/Commerce Based disciplines, and Education/Art Based Disciplines.

Participation in Higher Education:

Refers to involvement in higher education by enrolling in preferred programme of study, regular class attendance and living in conducive learning environment without unnecessary personal deprivation, unnecessary work schedules or unacceptable sacrifices

Privately sponsored undergraduate Higher Education loan recipient:

Refers to Non-government sponsored beneficiary of higher education loan award pursuing a bachelor's degree in a public university

Privately sponsored undergraduate student:

Refers to non-government sponsored student pursuing a bachelor's degree in a public university

Progression of study:

Refers to flow of studies as measured by the number of times a student defers studies or is barred writing examination on the basis of non-fees payment/completion

Widening Participation:

Refers to increasing the proportion of students from lower socio-economic backgrounds undertaking academic programme of their choice at university without cost restrictions

Socio-economic status:

Refers to quality of life as indicated by household assets ownership. It is divided into lower, middle and upper socio-economic statuses.

The Poor:

Refers to falling in the lower socio-economic status with low income levels and poor living conditions

CHAPTER TWO

LITERARURE REVIEW

2.1 Introduction

This chapter presents a review of literature related to the study. The literature was drawn from books, periodicals, journals, internet articles, research thesis among others. The chapter is sectionalised into five parts. The first section covers local, regional and global perspectives of higher education loan. Higher education loan and type of programme of study forms the second section. The third section focuses on higher education loan and student's lecturer attendance, while higher education loan and student's living conditions is contained in the fourth section. Finally, a summary of reviewed literature is presented in the fifth section.

2.2. Local, Regional and Global Perspectives of Higher Education Loan

The challenge of financing higher education remains a global phenomenon (Onen, Ajuaba & Oceng, 2015). Moreover, in recent years, many countries, especially developing nations have experienced unparalleled upsurge in the number of students qualifying for higher education occasioned by the popular universal primary and secondary education programmes. These developments have not only caused financial constraints, but have also driven many governments, which for decades had played a major role in funding higher education, to seek for alternative funding mechanisms in order to be able to meet the rising demand for higher education among the populace in their respective nations.

In light of this, in a growing number of countries, governments have embraced student loan schemes as most preferred mode of financing higher education (Lorraine

et. al, 2005; Ziderman, 2004). This is because they are able to contribute to the solution of a range of pressing policy problems that the governments encounter. Apart from their ability to relieve pressures on national budgets by facilitating greater cost sharing (Psacharopoulos, Tan and Jimenez, 1987), student loans have the potential of increasing access and participation in higher education by students from low socio-economic backgrounds (Salim, 2010; Munavu. et al, 2008).

The advantage of loan scheme is that it doesn't deter potential student from socio-economically disadvantaged backgrounds from higher education participation more than other students, since loan repayment depend on the future ability to repay, rather than current financial circumstances (Heller, 2008).

In Kenya specific, the genesis of student loans dates back to 1952 when the then colonial government awarded loans under the then Higher Education Loans Fund [HELF] to Kenyans pursuing university education in universities outside East Africa notably Britain, USA, former USSR, India and South Africa (www.helb.ac.ke, Otieno, 2004). However by 1974, the demand for university education in the county had grown tremendously to an extent that it was becoming increasingly difficult to adequately finance university education by providing full scholarships and grants by the Government.

Consequently, the Kenyan government introduced the University Students Loans Scheme (USLS), which was managed by the Ministry of Education. Under this arrangement, Kenyan students pursuing higher education at Makerere, Nairobi and Dar es Salaam universities received loans to cover cost of tuition and personal effects, on the understanding that they would repay on completion of their education. However, scheme lacked the legal basis for loan recovery. Besides, the loan was

wrongly perceived by general public and university students as a grant from the government, which was not to be repaid.

Consequently, in July 1995 the Government through an act of Parliament established the Higher Education Loans Board to administer the Student Loans Scheme. Moreover, the Board was charged with the responsibility of recovering all the outstanding loans given to former university students by the Government of Kenya since 1952 and to establish a Revolving Fund from which funds could be drawn to lend out to needy Kenyan students pursuing higher education (Government of the Republic of Kenya, 1995).

Until 2008, the student loan was advanced to only government sponsored students admitted to various universities through central placement body commonly referred to as Joint Admissions Board (JAB) which was transformed into Kenya Universities and Colleges Central Placement Services (KUCCPS). However, in 2008, the government widened the scope of HELB by allowing it to advance loans to financially needy privately sponsored students pursuing various programmes in higher institutions of learning in Kenya and other East African countries recognized by Commission for University Education (Otieno, 2004).

This was in response to the fact that in spite of the loan scheme, participation in higher education in Kenyan public universities continued to be markedly differentiated in terms of socio-economic groups as public universities were dominated by students from highest income quintiles (Boit, 2012; Kasozi, 2009; Otieno, 2007, Owino, 2003). Moreover, even where students from low socio-economic status got opportunity to join the public universities, enrolment in competitive programmes in the areas of science, technology and commerce appeared

to be heavily skewed in favour of students from medium and high socio-economic backgrounds (Odebero, 2008). This was because the public universities' joint admissions criteria was seen to be quite restrictive and favour the sons and daughters of wealthy families, who attend elite secondary schools and therefore get higher grades which guaranteed them university admissions to competitive programmes of study at the expense of their counterparts from low income families (Otieno, 2004).

Consequently, privately sponsored programmes become the only avenue left for the majority aspiring students who missed out on the direct admission by the Kenya Universities and Colleges Central Placement Service. Under the current scheme, HELB awards loan to students that range from Kshs 35,000 to Kshs 60,000 depending on the applicant's level of financial need as assessed by the board (http://www.helb.co.ke). All loanees are required to start repayment after a period of one year on completion of studies or within such a period as the Board may decide to recall the loan whichever is earlier.

To its credit, a number of studies have given HELB a clean bill of health in the promotion of equity in loan award. One such study is Musera (2014) entitled "Socio-Economic Status and Equity in Higher Education Loan Disbursement to Undergraduate Self Sponsored Students in Public Universities in Kenya". Using multiple data analysis techniques such as One way ANOVA, multinomial linear regression analysis and Gini coefficient, the study concluded that HELB loan allocation to self-sponsored students in public universities in Kenya was targeted and equitable. In specific, the findings of one way ANOVA and multinomial linear regression analysis revealed that a recipient's socio-economic status was significant in explaining the variations in the amount of loan awarded to self-sponsored recipients; and

that higher education loans are well targeted and benefit the neediest. Moreover, the Gini coefficients results showed that initial and overall loan allocation was equitable with marginal variations.

This strength in promoting equity can be attributed to HELB's improved selection criteria through the development of effective tests of family income to identify the neediest students (Onen, Ajuaba & Oceng, 2015). Besides equity, the board is also credited for the remarkable progress in loan recovery. For instance, when the scheme was set up in 1995, the rate of recovery was a paltry 3.3%. However, by 2005 rate increased to over 18% (Otieno, 2004) in spite of the high rate of graduate unemployment in the country. This tremendous progress was been attributed to aggressive public education, the enactment of a legal instrument binding borrowers and employers to ensure repayment and streamlined record keeping. Besides, the board works in cooperation and collaboration with the credit bureau, Kenya Revenue Authority, the National Health Insurance Fund, National Social Security Fund and Government Computer Centre to track defaulters and enhance compliance of the loanees.

Furthermore, the board and the government at large are credited for increased number of students funded at both public and private universities. For instance in 2016 alone, according to Higher Education Loans Board CEO, Mr. Charles Ringera, the board's annual budget stood at Ksh. 8.8 billion which was used to support about 200,000 students in various universities and colleges (Wanzala, 2016).

Be that as it may, HELB grapples with a myriad of challenges of inefficiencies in loan disbursement and recovery from the beneficiaries. For instance, in spite of various legal and policy interventions, about 70, 000 past beneficiaries are still holding up to

Ksh. 11 billion and their whereabouts are unknown since they received the support as early as the 1970s (Wanzala, 2016). This state of affairs is attributed to the fact that HELB has relied heavily on recoveries from graduates mostly employed in government public enterprises, the Teachers' Service Commission and a few private companies mostly because these known entities are easy to reach (Onen, Ajuaba & Oceng, 2015). The high unemployment and morbidity due to the HIV/AIDS pandemic (Othieno, 2004) also contributes to the low recovery of the loans from the beneficiaries.

In addition, a major weakness of the scheme is inadequate loan amount. Studies have established financial hardships among university students in spite of being loan recipients (Nafukho, 2001; Standa, 2000). In fact, the loan only covers about 40 percent of the tuition fee for the least expensive privately sponsored programs in the public universities (Otieno, 2004). The individual students is thus expected to look for alternative source of financing there higher education. Worse affected are the students pursuing relatively high cost programs like those in STEM and health sciences. This is because the loan award criterion doesn't factor in the cost of the program of study. Further in many occasions, due to cash flow challenges HELB has had to delay disbursement of loans thereby causing detrimental effect on the beneficiaries' studies and stay on campus.

The challenges associated with administration and management of higher education loan scheme aren't unique to Kenya. Equity and efficiency concerns have been raised on higher education loan schemes in many African countries just like in other parts of the world. In Ghana for instance, in spite of various transformative processes since its inception in 1971, the Student Loan Trust Fund (SLTF) has been heavily criticized for

the insufficient loan amounts advanced to students in various institutions of higher learning. In fact, the SLTF only covers about a third of the fees for each academic year. Under the current arrangement, loan amounts range from 500 to 600 Ghanaian cedes per year in the universities and 400 to 460 cedes per year in the polytechnics (Okae, 2012).

Besides inadequacy, high interest rates have also been pointed out. Okae (2012) notes that operating a students' loan scheme for needy people on market principles may plunge students into bankruptcy after they have graduated. Moreover, Due to high unemployment in Ghana, a graduate may not secure a job immediately and make payments from his/her salary.

However, unlike in the Kenyan situation, the Ghanaian Student Loan Trust Fund is credited for the fact that the loan award is means tested and differentiated according to program of study. For instance, students pursuing science course are awarded higher amounts of loan compared to their counterparts in humanities (Atuahene, 2007). This goes along way in promoting equity in loan disbursement.

Besides, the Student Loan Trust Fund in Ghana uses on line application with improved quality of database. Further, simultaneous application for both university entry and the loan accelerate disbursement of the loan at the beginning of the semester. This goes along way in promoting efficiency in loan disbursement. In the Kenyan case however, HELB disburses loans to privately sponsored undergraduate students in the second semester, long after the students have reported and completed the first semester (www.helb.ac.ke). The implication of this arrangement is that the majority poor who cannot afford first semester fees and associated costs are prevented from accessing higher education. This negates the very essence of widening the scope

of HELB to cover privately sponsored undergraduate students from low socio-economic backgrounds. Appropriate financing mechanism ought to widen participation in higher education.

In South Africa, the higher education loan scheme called National Students Financial Aid Scheme (NSFAS) is credited for allowing repayment grace period until the borrower is employed. Further, the repayments by borrowers are made on an income-contingent basis (World Bank, 2010). This is unlike the Ghanaian scheme.

Be that as it may, South African National Students Financial Aid Scheme's funding falls far short of demand. Current estimates are that NSFAS has less than half of the funds it needs to meet the demand for financial aid from qualifying applicants because the annual budget share of HE has been declining (Pillay, 2010).

Furthermore, the scheme has been largely criticized for its poor allocation formula based on race as a proxy for socio-economic need. Currently, the NSFAS gives loans and bursaries to assist black disadvantaged students in apartheid South Africa (World Bank, 2010). The result is that historically advantaged institutions with affluent black students who do not need financial aid get the same NSFAS as historically disadvantaged institutions with poor black students who all qualify for financial aid (Onen, Ajuaba & Oceng, 2015). This state of affairs negates the very essence of equity in financing of higher education.

Unlike in the developing world with basically one central body managing higher education loan schemes, student loans in the Unites States of America come in several varieties. However, they are fundamentally classified into two, namely federal loans

and private student loans. Furthermore, some states have their own loan programs, as do some colleges (Consumer Financial Protection Bureau, 2012).

As such, in the United States of America (USA), student loan a popular higher education funding mechanism. Nearly 60% of all the students in various institutions of higher learning in the USA borrow annually to help cover costs.

By and large, federal loans are preferred to private loans since they are subsidized. However, the maximum amount of federal loan that a student can borrow is dependent on federal policies. Current loan limits are below the cost of a majority of private institutions of higher learning and most flagship public universities. The students therefore are left with no other option other than borrow higher cost private student loans to make up the difference. Furthermore, while federal loans also allow borrowers myriad chances to reduce or defer payments for hardship, private loans typically do not. On the other hand, many private loan agreements make it impossible for students to reduce the principal by paying extra each month unless they are paying off the entire loan (Schemo, 2007).

The implication is that students' debt levels increase tremendously which impact negatively on their economic wellbeing once they complete studies. Consequently, many graduates end up getting trapped in student debt crisis. In a nutshell therefore, it's evident that higher education loan schemes all over the world face serious administrative and funding challenges. Therefore, a well thought out clear path needs to be drawn on higher education loan so that it promotes both efficiency and equity by realizing the desired effect at least cost. In this current study, the mean amount of higher education loan awarded to privately sponsored undergraduate students in public universities was treated as the independent variable.

2.3. Higher Education Loan and Type of Programme of Study by University Students

When they are free to do so, people choose occupations that offer them the highest returns on their abilities (Murphy, Shleifer & Vishny, 1991). As such, the most talented and gifted people then choose occupations that are associated with increasing returns to ability since increasing returns allow 'superstars' to earn extraordinary returns to their talent (Muthui, 2013; Menon, 1999; Rosen, 1981).

Studies show that attractiveness of an occupation is determined by among other factors, the size of the market, returns to scale and the compensation contract (Murphy, Shleifer & Vishny, 1991). First and foremost, the size of the market significantly influences attractiveness of an occupation in the sense that many talented and gifted people would be attracted to an area of specialty with a large market because it pays more than a small market. It's therefore not uncommon to find a person of great general athletic ability preferring to rather be the tenth best golfer than the first best hockey player, since far fewer people would pay to watch him play hockey.

Regarding returns to scale, studies show that the faster returns to scale in an activity diminish, the less attractive it is to a person of high ability. As such, attractive areas of specialty have weak diminishing returns to scale. This is because even the most talented and gifted individuals amongst us who have the privilege of operating in a large market are limited by the constraints of time, physical ability and the size of the firm they can run. Therefore, because of stronger diminishing returns to scale, even the most successful doctors would not make as much money as successful entrepreneurs.

Finally on the compensation contract, the sector's attractiveness is determined by how much of wages the most gifted and talented can capture. For instance, if returns to innovation aren't protected by patents and cannot be captured by an entrepreneur, entrepreneurship becomes less attractive. Moreover, when an individual's output is difficult to measure or is not sufficiently rewarded when measured, talented people are underpaid (Murphy, Shleifer & Vishny, 1991).

Attractiveness of an occupation makes talented people choose certain areas of specialty over time the world over. In Kenya as in the case of many developing countries, when they are free to do so, a majority of students prefer to enroll in science disciplines against humanities (Muthui, 2013; Menon, 1999). This is because graduates of science related disciplines are more likely to earn higher incomes and get more opportunities than their counterparts from other areas of specialization (Dickson and Harmon, 2011; O'Leary and Sloane, 2005; Blundel et al, 1999). As such, when they are free to do so, majority of the prospective students would ordinarily wish to be enrolled into STEM programs.

Be that as it may, student characteristics play significant role in determining the choice of program of study that a student enrolls in. For instance, some people have stronger comparative advantage from natural talent for particular activities. Such activities may include music, fine arts and sports. Such people therefore can earn vastly more by practicing these occupations than other people. However, other people may not have such specialized abilities but possess great intelligence, energy, or other generally valuable traits. Such people can become the best in many occupations such as entrepreneurship, medicine, law, engineering, architecture, anthropology and teaching, among others (Murphy, Shleifer & Vishny, 1991).

As such, these occupations exhibit increasing returns to ability. Having marginally greater talent leads to significantly higher payoff. Therefore, the most able and talented people then choose occupations with the highest returns. In Kenya however, universities have set different minimum academic requirements for entry into different programs of study in different areas of specialty. This is measured by the candidate's academic performance at secondary school level. As such, student's choice of type of program of study in Kenya is influenced by his or her academic achievement at secondary school level. In this study therefore, the student's academic grade at KCSE was treated as a control variable while determining the effect of mean amount of higher education loan on the type of program of study by privately sponsored undergraduate students in public universities in western Kenya.

Further, a number of studies have suggested that cost plays a major role in choices the students make at the university. In specific, tuition fee is an important determinant of university choice (Murat, 2010). For instance, Soo and Elliott (2009) using Hausman-Taylor model to control for the possible correlation between explanatory variables and unobserved university level effect, established that fees charged is a significant predictor of university applications. This is because demand for higher education is widely considered as price elastic (Bezmen and Depken, 1998).

In Kenya specific, tuition fees charges for various privately sponsored programs of study in public universities vary with areas of specialization. For instance, the cost of the programs of study range from about Ksh. 100,000 to Ksh. 500,000 per annum for Art based program and medicine respectively. As such, student's choice of type of program of study in Kenya could be influenced by the cost of program of study. In this study therefore, the tuition fees the student paid was treated as a control variable

while determining the effect of mean amount of higher education loan on the type of program of study by privately sponsored undergraduate students in public universities in western Kenya.

Besides the cost of tuition, studies show that demand for higher education is greatly affected by household income (Rothschild and White, 2008; Psachoropoulos & Woodhall, 1985). This is because household income determines purchasing power in a free market economy. Other factors remaining constant therefore, due to increased purchasing power, students from high socio-economic status would find it easy to enroll into any program of choice, price not withstanding!

Consequently, due to their limited purchasing power students from low income backgrounds are more sensitive to price changes than their counterparts from high income families (Heller, 1997). As such, in a free market situation studies show that students from low socio-economic backgrounds are less likely to participate in high cost and competitive programmes of study such as STEM. For instance, Koen Declercq and Frank Verboven (2015) tested whether socio-economic status still affects study decisions in higher education after controlling for acquired ability. Using descriptive statistics, the study established that socio-economic status is correlated with study decisions in higher education. The study revealed that disadvantaged students are less likely to enroll in higher education because they are more sensitive to the monetary costs of education and have lower tastes for education. Further, the study established that disadvantaged students are less likely to enroll because they have higher indirect costs of studying and have less favourable high school outcomes, hence lower acquired academic ability.

Though the study linked students' socio-economic status to participation in higher education, it only used general enrolment rates. However, the concept of widening participation entails enabling the prospective student to participate in an appropriate form of postsecondary education without cost related restrictions and unacceptable personal deprivation. In fact, there is a growing body of literature showing that socio-economic status not only restricts general enrolment but also the nature of participation as measured by student choice of either competitively high cost or less competitive low cost courses.

For instance, Nigel Palmer, Emmaline Bexley and Richard James (2011) in a study entitled, "Selection and Participation in Higher Education: University Selection in Support of Student Success and Diversity of Participation", established that Low SES applicants were under-represented at 18%, and high SES applicants were over-represented relative to their population share at 31.6% . The study further revealed that there was some variation in application rates for socio-economic status by discipline, with stronger low-SES application rates in education and health, and a greater proportion of high-SES students applying for creative arts, society and culture, architecture and building, and management and commerce. Specifically, in the field of health, the findings showed a greater proportion of low SES students applying for nursing, and a greater proportion of high SES students applying for medicine.

These findings are in line with those of Chester Jenny and Lacroix Carol who conducted a series of logistic regression to determine the association between socio-economic status and course studied. The study revealed that high SES students were less than half as likely to be studying education as low SES students. On the other

hand, the study found that high SES students were almost 5 times more likely than low SES students to be studying law.

In a nutshell therefore, these studies show that student's choice of type of program of study is closely associated their socio-economic status. In this study therefore, the student's socio-economic status was treated as a control variable while determining the effect of mean amount of higher education loan on the type of program of study by privately sponsored undergraduate students in public universities in western Kenya.

The two studies however did not factor in any intervention in terms of subsidies or student loan. Such interventions may mitigate against the influence of socio-economic status. In particular, studies show that student loans play a significant role in increasing educational choices (Zinderman, 2005). This is because it doesn't deter potential student from disadvantaged backgrounds from university participation more than other students, since loan repayment depend on the future ability to pay, rather than current financial circumstances (Heller, 2008). It is against this backdrop that a growing number of governments are embracing student loans as a mode of financing higher education so as to increase participation of students from low socio-economic backgrounds (Ziderman, 2004).

There is considerable literature on the link between students' aid and participation in higher education as measured by enrolment rates. Studies have however given mixed results as to the extent to which subsidised loans have had significant effect on student enrolments. On one hand, Dynarski (2000), Lauer (2000) and Yusif & Yussof (2010) show a positive and significant impact of student loan on higher education enrolment.

On the other hand, the findings of Baumgarter and Steiner (2006) and Neill (2008) indicate that student aid is ineffective in raising enrolment rates.

Be that as it may, these studies have only adopted quantitative or macro approach to measuring participation in higher education by use of enrolment rates over the years. However, a micro approach to analysis of participation in higher education should focus on the extent to which subsidised loan has had effect on individual students' ability not merely to have access but to make preferred career choices without being limited by their financial background.

In Kenya however, in spite of the loan scheme, equity in participation in higher education continue to be elusive as enrolment into competitive programmes remain a preserve of students from high socio-economic backgrounds. Odebero (2008) studying equity in access to university education in Kenya through higher education loan revealed that access to competitive programmes of study was a function of one's socio-economic class. The study showed that apart from educational and art based courses which attracted students from across the board, other programmes had an inclination towards ones' social class. In specific, the study established that enrolment into technology, commercial related courses and medicine was greatly skewed towards middle and high socio-economic classes. This study clearly demonstrates that in spite of student loan scheme, the nature of programme of study for university is largely dictated by the students' socio-economic background. More importantly, the study reveals that participation in higher education by students from lower socio-economic backgrounds is still largely limited to less competitive programmes.

However, it is important to note that Odebero (2008) was carried out among the government sponsored undergraduate students in public universities. This category of

students are usually selected by a joint public universities' admissions board which uses the terminal grade that individual students attain at the end of the secondary level as the only parameter of selection into various programmes of study at the public universities. In the recent past, the board has raised entry grades, popularly known as cut off points for most of the competitive programmes of study due to increased number of candidates who pass against limited opportunities in the public universities. Studies however show that the public universities' joint admissions criteria favour the sons and daughters of wealthy families, who attend elite secondary schools and therefore get higher grades which guaranteed them university admissions into competitive programmes of study at the expense of their counterparts from low income families (Otieno, 2004). As such, besides the socio-economic background, the type of secondary school attended greatly influences the nature of programme of study that students get admitted in through the public universities' joint admissions. Hence, higher education loan may not have had significant influence the nature of programme accessed by government sponsored students in public universities.

However, under the first objective, while controlling for the student and university characteristics, the current study sought to determine the effect of mean amounts of higher education loan on the type of programme of study by privately sponsored undergraduate students in public universities. This category of students differ from the one used in the previous study in that the individual prospective student directly seeks admission into a specific university programme of choice in line with the university's admission criteria . The individual university admissions criteria are relatively less stringent and therefore may not limit students as much as the then universities joint admission board, now Kenya Universities and Colleges Central Placement Services Board (KUCCPS). Moreover, privately sponsored students pay higher tuition fees

compared to their government sponsored counterparts. As such, the findings on the effect on mean amount of higher education loan on the type of programme of study by privately sponsored undergraduate students in public universities could be significantly different.

2.4 Higher Education Loan and Class Attendance by University Students

Class attendance in higher education is a concept that has been highly debated. Students are usually expected to take accountability and to make choices about attending classes. However, studies show that absenteeism is a significant problem at many institution of higher learning which transcends country, university and discipline in spite of existing state and individual institutional policies (Holdforth, 2007; Leon, 2007; Romer 1993).

Studies have shown that daily absenteeism at the universities can be as high as one-third to almost one-half of students in certain disciplines (Friedman, Rodriguez and McComb, 2001; McGuire, 2003; Moore, 2003a; 2003c; 2005). Yet educational practitioners agree that class attendance is an important aspect of student life. This is because it assists student learn differently by bringing theory to life and creating opportunity for discussions, explanation and collaboration on topics. Moreover, class attendance positively contributes to students' skills in self-management, team work and problem solving. Furthermore, students refine and practice communication and literacy skills with application of numeracy and information technology in class (Braak, n.d). These aspects are crucial in latter students' life and enhance their employability and productivity (Manchester Metropolitan University: Careers & Employability Service, 2012).

Consequently, a number of studies have been undertaken in an attempt to investigate the correlation between attendance and academic performance at institutions of higher learning. Such studies have however yielded mixed results. On one hand, studies across disciplines have indicated a positive relationship between class attendance and performance. For instance, Clark et al. (2011) conducted a research study on lecture attendance and reasons for class attendance. In specific, the study statistically examined the relationships between attendance and performance for first-year and third-year students. The study concluded that there is a reasonably positive relationship between high class attendance and improvement in academic performance among the students of higher institution of learning.

Similarly, Chou & Kuo (2012) investigated the link between student attitudes and how they relate to class attendance and performance in Taiwan Colleges. Among other factors that were controlled for by this study the level of difficulty of the courses, the topics covered in the courses and student's motivation towards attending the specific course. The findings revealed a significant correlation between class attendance and class performance.

These results were consistent with the findings of other previous studies. For instance, Thatcher, Fridjhon, and Cockcroft (2007) using second year psychology students established that the students who always attended lectures had a better total mark than those who never or seldom attended. Further in 2006, Cohen and Johnson using a sample of 347 economics class demonstrated a strong positive correlation between class attendance and academic performance.

Similarly, McCarey et al. (2006) using a cohort of 154 nursing students established that attendance was a significant predictor of performance with increasing non-attendance being consistently associated with poorer marks. Consistent results have also been posted by studies on students in other disciplines. For instance, Crede, Roch, and Kieszczynka (2010) in a Meta analysis, Adair & Swinton (2012), Arulampalam, Naylor, & Smith (2012), Dobkin, Gil, & Marion (2010), Paisley & Paisley (2004), Nyamapfene (2010) in engineering, Landin & Perez (2015) in pharmacy and Cohall & Skete (2012) in health.

On the other hand, other studies have revealed contrasting findings. For instance, Rodgers (2002) showed that improved attendance did not translate to improved academic performance. Similarly, Grabe (2005) examining the relationship between students' use of online notes as a substitute for attending class and examination performance on an introductory psychology module, established no difference in examination performance between the two groups of students who frequently used online notes and those who attended classes. The findings of this study point to the fact that absenteeism from class could be a function of pedagogical approaches. For instance, studies have shown that non class attendance could be a result of factors such as unexciting and unchallenging lecturers, poor timing of lectures and competing assignment commitments (Gump 2006; Nicholl and Timmins 2005; Hughes 2005; Timmins and Kaliszer 2002; Hunter and Tetley 1999; Longhurst 1999).

Consequently, those students who are academically strong and more self-directed in nature are likely to seek the information elsewhere and probably succeed but not necessarily excel, while those who have less academic prowess or who are less

motivated are likely to struggle to pass (Sharma et al. 2005). As such, class attendance becomes more critical especially when alternative modes of accessing learning materials are either not available or costly as in the case in many developing countries like Kenya where the current study was undertaken.

Besides pedagogical link, other studies have also attempted to understand the problem of class absenteeism from course and student characteristics perspectives. For instance, Romer (1993) found that smaller classes were associated with less absenteeism among the learners. The study also indicated that the more significant the mathematical component of the course, the less the absenteeism. The study further noted that absenteeism was mainly concentrated in a few students who missed many classes while most students rarely missed classes. Similarly, studies show that type of program of study could also affect attendance, especially where there is a 'professional' element to the programme, like in nursing where a high 'minimum' attendance is stipulated (An Bord Altranais 2005). The implication of these findings is that class attendance is associated with type of program of study. In this current study under the second objective, type of program of study was used as a control variable while determining the effect of mean amount of higher education loan on class attendance by privately sponsored undergraduate students in western Kenya.

With regards to student characteristics, some studies have however not established any significant association with class attendance. For instance, Friedman, Rodriques and McComb (n.d.) concluded that student characteristics such as gender, age, residence, part time jobs and course loads were found not to affect students' class attendance significantly.

However, these findings contradicts those of other studies that have singled out association between class attendance and student characteristics like work commitment, mode of financing and socio-economic status. For instance, Paise, & Paisey (2004) who investigated reasons for non-attendance of classes as well as the influence attending classes have on the academic results of students, established that financial difficulties was the main motivation for part-time work. As such, in the case where students encounter hardship due to insufficient aid as is the case in many developing countries (Nyakunga, 2011; Rugambuka, 2008; Tekleselassie and Johnstone, 2004; Mwinzi, 2002; Nafukho, 2001; Standa, 2000), many students tend to be less engaged in their academics.

This position is supported and elaborated by findings from a number of studies. For instance, in a study entitled “Financial decisions among undergraduate students from low-income and working-class social class backgrounds," Soria, et. al (2014) revealed that whereas universities aspire for students to be fully engaged in academics, low income and working social class background students are more likely to feel stressed by their finances and view college period as time they must work. In contrast, students from upper socio-economic backgrounds tend to be more engaged in campus life (Stuber, 2011).

In a related study, Mwinzi (2002) studying the impact of cost-sharing policy on the living conditions of students in Kenyan public universities, show that students who engage in income generating activities as well as study sacrifice part of their study time, since 83.9% of all income generating activities are operated by students for several hours during the semester. The study further revealed that 55.4% spent equal to or more than four hours, while 32.3% used 4-9 hours, 6.9 % devoted 10-14 hours

while 5.4% operated their income generating activities between 15-18 hours. It is worth noting that regular programmes have classes and other academic activities running between 8.00am and 7.00 pm, this translates to 12 hours of active studies. The study concludes that there is therefore the possibility that academic performance of the students who engage in IGAs will be negatively affected due to lack of attention to their studies.

In a nutshell therefore, these studies suggest a relationship between class attendance and such student characteristics as work commitment and socio-economic status which affects their general wellbeing. Therefore, in this current study under the second objective, such student characteristics were used as a control variable while determining the effect of mean amount of higher education loan on class attendance by privately sponsored undergraduate students in western Kenya

Be that as it may, studies show that financial aid significantly increases student engagement in academic work. For instance, Hurtado, et. al (2003) studying effect of student aid on college adjustment revealed that recipients of student aid worked for significantly fewer hours per week which allowed them to focus on engagement in college and other aspects of the transition experience. The study was conducted with the aid of t-test and multiple regression analyses which allowed for establishment of the effect of student aid on academics, financial and social adjustment variables while effectively controlling other variables. These findings suggest that financial aid does affect class attendance as it gives the students ample time to focus on academics rather than to worry about other aspects of life and make sacrifices. Therefore, this current study sought to determine the effect of mean amount of higher education loan on class attendance by privately sponsored undergraduate students in western Kenya,

while controlling for student level and university characteristics. However, the current study contrasts with Hurtado et al (2003) in that it focused on the effect of scholarship while the current study looked at higher education loan.

2.5 Higher Education Loan and Students' Living Conditions

Participation in higher education should not only focus on enrolment but student completion and success too (Thomas, 2002; NAO, 2002). However, there is a growing body of literature which suggests that student success and perseverance can be negatively impacted by poor living environmental factors. As such, the condition under which students live is an integral component of participation in higher education.

In fact, studies show that students tend to be less engaged in academics when they encounter hardship and live in deplorable conditions (Mwinzi, 2002; Nafukho, 2001; Standa, 2000). This is because when the students cannot meet their basic needs such as food, clothing personal effects, and learning materials, they are unlikely to concentrate fully in achieving a higher need of getting a degree (Nafukho, 1996).

This is firmly grounded on Maslow's hierarchy of needs theory which explains what motivates human behavior (Batrol, 1991; Maslow, 1954). Maslow's studies in human motivation led him to propose a theory of needs based on a hierarchical model with basic needs at the bottom and higher order needs at the top as presented in Figure 2.

Figure 2: Maslow's Hierarchy of Needs Model

Source: https://www.simplypsychology.org/maslow-needs.png

According to Maslow and as presented in Figure 2, human beings only aspire to achieve the higher order needs in the hierarchy when their basic needs have been taken care of. As such, they first concentrate on the basic physiological needs such as food, shelter, and clothing, among others. Only then, they can move to the next level under safety needs which pertain to the desire to feel safe, secure and free from threats to their existence. The individual then strives to achieve the third, fourth and fifth order needs of social, esteem and self actualization in that order.

The implication of this theory on students' participation in higher is that participation in academic activities such as class attendance and indeed success in higher education are secondary and dependent on the satisfaction of students' basic needs like food, clothing and accommodation, among others. As such, higher education financing should take into consideration students' living expenses besides tuition fees. In fact, it's on this basis that school feeding program was muted along side free and compulsory primary education for all children in Kenya which was introduced in

2003 (MoE, 2003). Since its inception, the World Food Program (WFP) assisted program which targeted the most vulnerable children in ASAL and informal settlements boosted health, attendance and academic performance (Espejo, 2009).

In spite of its significance, students' living conditions in public universities in Kenya have deteriorated over time (Mwinzi, 2002; Standa, 2000). This is attributed to changes that have been introduced over the years relating to admission and financing policies. One such policy was cost sharing in financing education. The policy was introduced in the social sector including education as part of Kenya's International Monetary Bank/World Bank supported Structural Adjustment Programmes (SAPs) in 1988. The cost-sharing policy was aimed at reducing government support to the sectors that would otherwise be self-sustaining, and encouraged increased cost recovery as a way of mobilizing additional resources (Republic of Kenya, 1997). The result was the introduction of cost sharing at all levels of education in Kenya. This policy underlines the partnership between the government, private entrepreneurs, NGOs, parents and other stakeholders in financing education (Mwinzi, 2002). Within this framework, education was to be financed jointly by the government through capitation and by the individual students by way of paying tuition fees and other associated costs such as accommodation and catering.

Although introduced on the basis of economically genuine reasons, the policy adversely affected participation of the majority of children from low income families and manifested in an alarming aspect of unequal access to higher education (Musera, 2014; Boit, 2012; Odebero, 2008; Kasozi, 2009; Otieno, 2007; Owino, 2003; Pontefract and Hardman, 2005) since the majority poor struggled to meet their living expenses besides paying part of the fees (Gravenir et al., 2005).

Besides cost sharing, another policy that has had adverse effect on students' living condition was the government's move to delink students' admission to bed space in public universities (Sifuna, 2010; Kilemi, et al, 2007). This was aimed at widening participation. However, due to limited spaces within the universities a majority of the students have had seek alternative accommodation arrangements.

Further, the inadequacy of higher education loan has compounded the problem of university students' living conditions. Studies show that majority university students in developing world experience financial hardship in spite of being loan recipients (Nyakunga, 2011; Rugambuka, 2008; Tekleselassie and Johnstone, 2004; Nafukho, 2001; Standa, 2000). For instance, in a study entitled, "A Comparison of the Efficiency and Equity Implications of University Loan Programs in the United States and in Kenya", (Nafukho (2001) revealed that the amount of loan is hardly sufficient to carter for students' multiple needs.

Worse affected are the privately sponsored undergraduate students whose loan doesn't factor in cost their living expenses. In fact, Nyakunga (2011) revealed that financial hardship was experienced more by self-financed students and those with half loans, especially from low income families. In the current arrangement, the whole amount of loan awarded to individual privately sponsored university is sent to respective universities in the second semester to meet the cost of tuition (www.helb.ac.ke). As such, the individual privately sponsored university students have to look for alternative means of meeting their living expenses besides bridging the gap between the total cost of tuition and the amount of higher education awarded by HELB.

Consequently, many students continue to live in deplorable conditions which in most cases are in some dingy corner of town and engage in income generating ventures as

survival mechanism (Gisesa, 2012; Ngolovoi, 2010). This in total disregards of CUE (2014) guidelines on state and condition of university students accommodation facilities.

As such, it is not uncommon to find university students residing in informal settlements like slums and engaging in some odd income generating activities. Such students would take up the roles of barbers, cobblers, hairdressers, brokers in computer typing and printing, vendors or hawkers of light goods such as writing and photocopying papers, electronics, cigarettes among others (Otieno, 2004). Furthermore, media has also been reporting cases of peddling drugs, prostitution, selling stolen property and other anti-social income generating activities of university students (Mwangi, 2000). Although these newspaper reports may not be validated, they serve to point out that cost sharing has impacted negatively on students' welfare at the universities concerned. It also indicates that the students might be compromising their study time for survival needs.

The findings are inline with those of other studies that have observed increasing cases of student engagement in income generating activities. One such study is Mwinzi (2002). In a study entitled "The impact of cost-sharing policy on the living conditions of students in Kenyan public universities", Mwinzi (2002) revealed that 39% of the students engaged in some form of income generating activities as a survival mechanism. The study concluded that if students mainly engage in IGAs to meet living expenses then it implies that either the government or family hasn't been fully supportive.

Mwinzi (2002) compares and contrasts with the current study in a number of ways. First and foremost, Mwinzi (2002) was carried out among the government sponsored

undergraduate students in public universities in Kenya, while the current study focuses on their privately sponsored counterparts. It is important to note that though the two groups of students undertake their studies in the same institutions, their experiences are different. For instance, the cost of regular programmes are highly subsidised, hence government sponsored students pay less tuition fees compared to their privately sponsored counterparts. In addition, privately sponsored undergraduate students are accorded limited privileges in public universities. For instance, the highly subsidised accommodation within the university is a preserve of government sponsored students in most of the public universities. Moreover, the whole amount of higher education loan awarded to privately sponsored students is channeled to respective university accounts to pay the tuition fees. As such, unlike their government sponsored counterparts, the individual privately sponsored higher education loan recipients have to look for other sources of finance to meet their living expenses. As such, the gap between the government support inform of higher education loan and the cost of programme of study is wider for privately sponsored students.

Methodologically, whereas Mwinzi (2002) was undertaken with the aid of stratified random sample of 366 regular undergraduate student respondents drawn from Nairobi and Moi Universities, the current study was undertaken with the aid of a larger stratified sample of 517 privately sponsored undergraduate higher education loan recipients drawn from University of Eldroret, Jaramogi Oginga Odinga University of Science and Technology and Masinde Muliro University of Science and Technology. This ensured sample representativeness of the population since the larger the sample, the more representative of the population it is (Mugenda and Mugenda, 1999). Moreover, Mwinzi (2002) used descriptive statistics to establish the impact of cost

sharing on living conditions of the students. However, the current study used Principal Component Analysis to assess the living conditions of privately sponsored higher education loan recipients.

Be that as it may, Mwinzi (2002) concluded that most of the student entrepreneurs came from humble background and were therefore compelled to do business to make ends meet. As such in the absence of or inadequacy of financial intervention as it is in the case in many developing countries (Nyakunga, 2011; Rugambuka, 2008; Tekleselassie and Johnstone, 2004), students living condition and indeed their engagement in income generating activities are significantly associated with their family socio-economic status.

The findings of Mwinzi (2002) are in line with the results of Soria (2014). Investigating financial decisions among undergraduate students from low-income and working-class social class backgrounds, the study noted that whereas universities aspire for students to be fully engaged in academics, low income and working social class background students are more likely to feel stressed by their finances and view college period as time they must work. In contrast, students from upper socio-economic backgrounds tend to be more engaged in campus life.

In a nutshell therefore, family socio-economics remains an important predictor of students living conditions in spite of higher education loan and other forms of student aid. Therefore in this current study under the third objective, students' socio-economic status was used as an important variable in the assessment of the living conditions of privately sponsored undergraduate higher education loan recipients.

2.6 Summary of the Literature Reviewed

This study sought to determine the effect of the amount of higher education loan on participation of privately sponsored undergraduate students in public universities in western Kenya. In this study participation in higher education was measured by the type of programme a student pursues, students' lecture attendance and their living conditions.

When they are free to do so, people choose occupations that offer them the highest returns on their abilities (Murphy, Shleifer & Vishny, 1991). As such, the most talented and gifted people then choose occupations that are associated with increasing returns to ability since increasing returns allow 'superstars' to earn extraordinary returns to their talent (Muthui, 2013; Menon, 1999; Rosen, 1981). However, studies indicate a positive correlation between students' socio-economic status and the type of program they pursue at the universities (Koen and Verboven, 2015; Palmer, Bexley and James, 2011; Jenny and Caro, 2010; Odebero, 2008).

Be that as it may, financial interventions such as student loans play a significant role in increasing educational choices (Zinderman, 2005). Higher education loan for privately sponsored students in public universities in Kenya was introduced in 2008 (www.helb.ac.ke). Literature is however scanty on its relationship with the type of programme of study by the students. The first objective of this study therefore was to determine the effect of the amounts of higher education loan on the type of program of studies pursued by privately sponsored students in public universities.

Absenteeism is a significant problem at many institution of higher learning which transcends country, university and discipline in spite of existing state and individual institutional policies (Holdforth, 2007; Leon, 2007; Romer 1993). Studies have

further shown that students who encounter hardship due to insufficient financial aid tend to be less engaged in their academics (Nyakunga, 2011; Rugambuka, 2008; Tekleselassie and Johnstone, 2004; Mwinzi, 2002; Nafukho, 2001; Standa, 2000). Besides, poor living condition among students in public universities is documented (Nyakunga, 2011; Ngolovoi, 2010; Otieno, 2004; Nafukho, 2001; Standa, 2000). Studies have also linked financial hardship among university students with their socio-economic status and showed that most students who engage in income generating ventures as survival mechanism are from humble backgrounds (Mwinzi, 2002). However, financial aid improves students' living conditions and significantly increases student engagement in academic work (Hurtado, et al 2003). The studies have however focused government sponsored students and scholarship as mode of financing.

Consequently, the second objective of this study sought to determine the effect of the amount of loan on the frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya. The third objective on the other hand sought to assess living conditions of privately sponsored undergraduate higher education loan recipients in public universities in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents research methodology that was employed in this study under the following subsections: Research design; study area; target population; sample size and sampling procedure; data collection instruments; Quality control; procedure for data collection; data analysis; and, ethical considerations.

3.2 Research Design

This study adopted an ex-post facto research design. Kerlinger and Howard (2000), Cohen et al., (2000) and Marilyn and Jim (2013), have defined an ex post facto research design as a systematic, empirical enquiry in which the scientist does not have direct control over independent variables because their manifestations have already occurred or because they cannot be manipulated.

As such, ex post facto is a research design in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables. He then studies the independent variable or variables in retrospect for their possible relationship to, and effects on, the dependent variable or variables. In effect, the researcher asks himself what factors seem to be associated with certain occurrences, conditions or aspects of behavior (Cohen and Manion, 1994). The design has an advantage because it meets an important need of the researcher where the rigorous experimental approach is not possible. Thus, ex-post facto research design is an invaluable exploratory tool (ibid).

The design was therefore the most suitable for this study since the amount of higher education loan which was treated as the independent variable had already been disbursed to the respective privately sponsored undergraduate students and had already influenced their participation at the period the research was undertaken.

Further, the study adopted multi-methodology approach to data collection and analysis. Also known as mixed methods, it involves integrating quantitative and qualitative data collection and analysis in a single study (Creswell et al, 2003). The advantage of this approach is that both qualitative and quantitative researches, in combination, provide a better understanding of a research problem or issue than either research alone. Furthermore, combining the approaches helps overcome deficiencies in one of the methods only (Stange et al, 2006).

Accordingly, the approach was suitable for this study as it sought to determine the effect of higher education loan amount on participation of privately sponsored students in public universities in western Kenya. Understanding participation in higher education requires greater breadth of perspectives of type of program of study, class attendance and living conditions. As such, it required collection and analysis of both quantitative and qualitative data from privately sponsored higher education loan recipients as primary consumers and deans of students as informed specialists.

3.3 Study Area

This study was conducted in public universities in western Kenya. Western Kenya lies between east of the Great Rift Valley and west of Lake Victoria covering the former provinces of Nyanza, Western and part of Rift Valley. The justification for choice of public universities was in the fact that the majority of university students in Kenya, 80% are enrolled in public universities (Kenya National Bureau of Statistics, 2009).

Moreover, higher education loan scheme in Kenya was established to increase access and participation in higher education among students from low socio-economic backgrounds (www.helb.go.ke) whose majority opt for public institutions of higher learning because of their relatively lower cost as compared to private institutions (Owino, 2003).

The justification for choice of western Kenya is in the fact that it is home to ten out of the twenty two fully fledged public universities in the country (www.cue.go.ke). Yet, only three of the public universities in the region had operated on fully fledged capacity for at least ten years. They include Moi University, Maseno University and Masinde Muliro University of Science and Technology. The other seven public universities were awarded charters between the years 2013 and 2016. As such, Western Kenya is home to a majority of the newly chartered universities which were established with the view of widening participation in higher education across the country. Previously, majority of the public universities were located around Nairobi region. This greatly restricted participation in higher education.

3.4 Target Population

This study was conducted with the aid of two categories of respondents, namely Deans of students and 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients representing informed specialists and consumers respectively. Otieno (2005) underscores the importance of two categories of respondents, namely the informed specialists and consumers. This is on the understanding that the specialists have vast theoretical knowledge and practical experience to draw upon while the consumers know the needs and dissatisfaction that point to the difficulties or opportunities in using a good or a service. Therefore, the

target population of this study comprised of all the 6,264 privately sponsored undergraduate higher education loan recipients of 2012/2013 cohort and all the 10 deans of students in the 10 public universities in Western Kenya. Table 3.1 shows the distribution of the target population by university.

Table 3.1: Population of Privately Sponsored Higher Education Loan Recipients and Deans of Students by University

University Name	HELB Recipients	Deans of Students
Moi University	1510	1
Maseno	635	1
MMUST	1091	1
Kisii	953	1
JOOUST	208	1
Kibabii University	236	1
Maasai Mara University	217	1
University of Eldoret	712	1
University of Kabianga	529	1
Rongo University	173	1
Total	6264	10

Source: HELB, 2015

The justification for the choice of 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients as primary respondents was in the fact that they were the only single group across all disciplines that were in session that had been in the university system for the minimum required period of four years to complete undergraduate degree. As such, their participation in higher education could adequately be analyzed.

On the other hand, the justification for the inclusion of the Deans of Students as informed specialists was in the fact that they were considered key informants by virtue of their offices which primarily deal with student welfare in the public universities.

3.5 Sample and Sampling Procedure

In this study, sampling was therefore done at both the respondents and institutional levels. A good sample must be as representative of the entire population as possible (Nsubuga, 2000). As such, in order to ensure sample representativeness of the population across Western Kenya, all the ten fully fledged universities were classified into their respective location strata of Nyanza, Western and Rift Valley. Thereafter, lottery method was used to randomly pick 30% of the universities from each stratum. Consequently, JOOUST, MMUST and UoE were selected to represent Nyanza, Western and Rift Valley regions respectively.

At the respondents' level, the 2012/2013 cohort of privately sponsored undergraduate HELB loan recipients were sampled separately from the Deans of Students since they belonged to consumer respondents and informed specialists categories respectively. Besides, their respective population sizes varied greatly.

A sample size of 517 privately sponsored higher education loan recipients was established with the aid of a mathematical formula by Watson (2001) as shown.

$$\mathbf{n} = \frac{\left(\frac{\mathbf{p(1-p)}}{\frac{\mathbf{A^2}}{\mathbf{Z^2}} + \frac{\mathbf{p(1-p)}}{\mathbf{N}}}\right)}{\mathbf{R}}$$

Where

n = Sample size required

N = Number of people in the population

P = Estimated variance in the population as a decimal

(0.5 *for* 50 – 50, 0.3 *for* 70 – 30)

A = Precision desired, expressed as a decimal (*i.e* 0.03, 0.05, 0.1 *for* 3%, 5%, 10%)

Z = Based on confidence level: 1.96 *for* 95%, 1.6449 *for* 90% *and* 2.575 *for* 99%.

R = Estimated response rate, as a decimal

The total number of 2012/2013 cohort of privately sponsored undergraduate loan recipients in all the 10 public universities in Western Kenya was 6,264 (N=6,264). The level of precision/margin of error/sampling error of the study was ±5% (A=0.05). This was adopted to reduce the marginal error as much as possible (Watson, 2001). The 95% confidence level was also adopted as a standard for most social-science applications (ibid). The equivalent Z for 95% was 1.96 (Z=1.96). The study also estimated the proportion of the population having the requisite characteristics at 50 % (p = 0.5). Watson (2001) suggests that if variability is too difficult to estimate, it is best to use the conservative figure of 50%. Odebero (2007) and Musera (2014) also used this variability. Considering the method of survey (self-administered questionnaire), the nature of the respondents (university students) and the interest they have in HELB funding, this study expected a response rate of 70% (R=0.7). The choice of 70% response rate was informed by the fact that studies done on higher education loan in Kenya posted more or less the same rate. Such studies include Odebero (2007), Wachiye (2009) and Musera (2014).

As such, the sample size of 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients was derived as follows;

$$n = \frac{\frac{P(1-P)}{\frac{A^2}{Z^2} + \frac{P(1-P)}{N}}}{R} = \frac{\frac{0.5(1-0.5)}{\frac{0.05^2}{1.96^2} + \frac{0.5(1-0.5)}{6264}}}{0.7} = 517.087925$$

In order to further ensure sample representativeness of the entire population, the 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients in the three selected universities of UoE, MMUST and JOOUST were

grouped into three broad strata of STEM, Education/Arts and Business/Economics. Thereafter, the number of respondents from each stratum was determined using stratified proportionate to size procedure as shown in Table 3.2

Table 3.2: Sample of Privately Sponsored Higher Education Loan Recipients and Deans of Students by University

University	STEM		Education, Arts and Social Sciences		Economics and Business		Total Population	Sample size
	Population	Sample	Population	Sample	Population	Sample		
UoE	202	52	288	74	222	57	712	183
JOOUST	29	7	119	31	60	16	208	54
MMUST	151	39	823	211	117	30	1091	280
TOTAL	382	98	1230	316	399	103	2011	517

Source: Population of Privately Sponsored Higher Education Loan Recipients and Deans of Students mapping data, 2015, p. 33

Simple random method was thereafter used to select individual student respondent from among the 2012/2013 cohort of privately sponsored undergraduate higher education loan recipients from the three strata of STEM, Education/Arts/Social Sciences and Business/Economics in the three public universities.

On the part of informed specialist respondents, purposive technique was employed to pick all the three deans of students in the three public universities. The deans were considered key informants by virtue of their offices which primarily deal with student welfare in the universities. In total therefore, this study was undertaken with the aid of 520 respondents comprising of 517 privately sponsored higher education loan recipients and 3 deans of students.

3.6 Data Collection Instruments

Two instruments were used to collect data for this study. They include; Questionnaire for Fourth Year Privately Sponsored Higher Education Loan Recipients and Interview Schedule for Deans of Students.

3.6.1 Questionnaire for Fourth Year Privately Sponsored Higher Education Loan Recipients in Public Universities

This study used questionnaire to obtain information on the independent, dependent and control variables from the sampled 2012/2013 cohort of privately sponsored higher education loan recipients. See *Appendix I.* In specific, the students were required to respond to array of questions related to the amount of higher education loan awarded per year, type of program of study, level of class attendance in the previous semester, living conditions, socio-economic status, KCSE performance and name of the university.

Self-completing questionnaires were administered due to its convenience which enabled data collection over a large sample in the shortest time possible (Bryaman, 2001). Both closed ended and open ended questions were contained in the questionnaire. The justification for the approach was on the fact that whereas the open ended items permitted greater depth of response and ensured that the respondents gave answers on certain issues in exactly the manner they perceived it, closed ended questions eased the work of the respondents and the researcher during data collection and analysis respectively (Kathuri and Pals, 1993).

3.6.2 Interview Schedule for Deans of Students

Three interviews were conducted with the Deans of Students in the three sampled public universities. An interview schedule was used to solicit in-depth information from Deans of Students on the living conditions of privately sponsored students higher education loan recipients in their respective universities. See *Appendix II*

In specific, the Deans of Students were asked to describe the state of accommodation facilities for the privately sponsored higher education loan recipients in terms of their cost, location, security, safety, space, hygiene, availability and range of recreational facilities, convenience and comfort. In addition, the deans were asked to give their opinion on the adequacy of the students' financial resources to meet the cost of their accommodation, catering services, clothing and personal effects, library and stationery needs. Furthermore, they were also asked to provide measures that should be put in place to improve the living conditions of privately sponsored higher education loan recipients. The information from the interview with the Deans of Students explained and corroborated data gathered by the researcher through observation and from the privately sponsored higher education loan recipients through the questionnaire.

3.7 Quality Control

Quality measures and procedures of piloting, validity and reliability of the research instruments were undertaken prior to actual data collection.

3.7.1 Pilot Study

Bless and Higson-Smith (2000) observe that pilot study is a small study conducted prior to the actual larger piece of research to determine whether the methodology, sampling, instruments and analysis are adequate and appropriate. Given that piloting is very important in instruments construction process, piloting of the research instrument was a vital step to the researcher in ensuring that problems were identified and corrected before administering research instruments in the actual study (Oppenheim, 1996; Bell, 1993; Velma and Mallick, 1999).

Consequently, a pilot study was conducted in Maseno University which is a public university situated within the study area. As such, the instruments were tested in conditions similar to those of the actual research. An interview session was conducted with the university's dean of students while a questionnaire was administered to 30 Fourth Year Privately Sponsored higher education loan recipients equally drawn from the three broad areas of specializations of STEM, Education/Arts, and Economics/Business related disciplines. The internal consistencies of the measurement scales within the questionnaire were checked using STATA version 11 programme to calculate Chonbach's Alpha for each dimension and scale within the instrument. The items were thereafter revised. This ensured that the items were reliable in measuring the variables.

Piloting therefore enabled the researcher to examine and refine the questions, establish how long it could take the Privately Sponsored higher education loan recipients to respond to the questionnaire, and to test the acceptability of the interview content.

3.7.2 Validity of Research Instruments

Validity is quality of a data gathering instrument or procedure that enables it to measure what it is supposed to measure (Best and Kahn, 2002). In this study, content validity was adopted to ensure that the Questionnaire for Fourth Year Privately Sponsored Undergraduate higher education Loan Recipients and Interview Schedule for Deans of Students measured what they intended to measure. As such, the instruments were developed by the researcher under the guidance of the supervisors. The supervisors examined the items in the questionnaire and interview guide to ascertain that they were clear, meaningful, relevant and adequately measured the

domain under study (Cohen et al., 2000; Neuman, 2000). Thereafter, the researcher made necessary adjustments to the instruments to ensure that it yielded the required data for this study.

3.7.3 Reliability of Research Instruments

Reliability is the degree to which data collection tool produces stable and consistent results (Cohen and Manion, 1994). In this study, split-half technique was used to test the reliability of the Questionnaire for Fourth Year Privately Sponsored Undergraduate Higher Education Loan Recipients. The items in the questionnaire were randomly split into two halves and administered to a group of fourth year privately sponsored higher education loan recipients at the pilot study. The data sets were then computed and correlated using Cronbach's Alpha of correlation using SPSS. A correlation coefficient of 0.877 for all the items was attained implying that the research instruments were reliable for generating data for this study (Kathuri & Pals, 1993; Mugenda & Mugenda, 2003).

3.8 Procedure for Data Collection

Research proposal was first submitted to the Directorate of Graduate Studies of Masinde Muliro University of Science and Technology for approval. Consequently, a letter of research proposal approval was issued. Thereafter, the researcher used the letter to secure research permit from the National Council for Science and Innovation (NACOSTI). It is on this basis that data was then collected.

Data for this study was collected in two phases. In the first phase, the Questionnaire for Fourth Year Privately Sponsored higher education loan recipients was administered and analysed. Thereafter in the second phase, interviews were conducted with the Deans of Students. This enabled the researcher to make follow up and focus

the questions in the interviews and probe further in line with the outputs from the student questionnaires.

The researcher personally conducted all the three interviews with the Deans of Students in the sampled three universities. However, data from the 2012/2013 cohort of privately sponsored higher education loan recipients was collected by 3 fourth year student research assistants from each of the three universities of UoE, MMUST and JOOUST. The research assistants were identified with the help of the respective Deans of Students. The research assistants were first trained on the purpose of the research, administration of instruments and ethical considerations. Each set of the questionnaire was prefaced with a covering letter that explained the purpose of the research and provided assurance that all responses would be treated with utmost confidentiality. Thereafter, they administered the questionnaires accordingly under the guidance of the researcher

3.9 Data Analysis

This study generated both qualitatively and quantitatively data. Therefore, both qualitative and quantitative techniques were employed to analyze the data by objectives. Qualitative data was analyzed thematically, whereas quantitative data was analyzed with the aid of descriptive and inferential statistics.

Prior to the analysis, quantitative data collected were checked and entered into STATA version 11 program software taking into cognizance their serial numbers and codes for each item. Data cleaning and management was thereafter undertaken. The nature of the variables under investigation in each objective informed the type of statistical tool of analysis employed.

In specific, variables used in the study were analyzed descriptively using of frequency distribution, percentages and means. The variables included amount of higher education loan, type of program of study, performance at KCSE, gender, frequency of class attendance and living condition proxies. Besides, multiple component analysis (MCA) was used to analyze data relating to student's socio-economic status which enabled categorization of the sampled student respondents into three socio-economic tertiles of Low, Middle and High statuses. Socio-economic status was used as one of the control variables.

The first objective of this study was to determine the effect of amount of higher education loan on type of program of study by privately sponsored undergraduate students in public universities in western Kenya. In order to effectively address this study objective, multinomial logistic regression analysis was used to fit mean amount of higher education loan against type of program of study pursued by privately sponsored undergraduate students, while controlling for students' and university characteristics. Multinomial logistic regression is a model that is used to predict the probabilities of the different possible outcomes of more than two level categorically distributed dependent variable, given a set of independent variables which may be real-valued, binary-valued, or categorical-valued (Greene, 2012; Sturdivant, 2013).

Multinomial logistic regression was therefore appropriate for analysis in the first objective since the dependent variable, type of program of study was grouped in three broad categories of STEM programs; Education, Arts & Social Sciences; and, Economics and Business related disciplines. On the other hand, the independent variable, amounts of higher education loan were in real values. As such, multinomial logistic regression enabled sequential regression of program of study pursued by

privately sponsored undergraduate students, while controlling for students' and university characteristics.

Consequently, three sequential regression models were developed. The first model fitted Mean amount of higher education loan (predictor variable) against student's program of study (the outcome variable). The second model fitted Mean amount of higher education loan (predictor variable) against student's program of study (the outcome variable) while controlling for individual student respondent's characteristics. The third model fitted Mean amount of higher education loan (independent variable) against student's program of study (the outcome variable) while controlling for both the student respondent and university characteristics

The second objective of this study was to determine the effect of amount of higher education loan on frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya. In order to effectively address this study objective, logistic regression analysis was used to fit mean amount of higher education loan against class attendance, while controlling for student-level and university characteristics. Logistic regression is a model that is used to predict the probabilities of the different possible outcomes of two level categorically distributed dependent variable, given a set of independent variables which may be real-valued, binary-valued, or categorical-valued (Greene, 2012; Sturdivant, 2013).

The justification for logistic regression analysis was in the fact that the dependent variable, class attendance was categorised into either never missed classes or missed classes. Three sequential regression models were therefore developed. The first model fitted the outcome variable, class attendance against the explanatory variable, mean amount of HELB loan. The second model fitted the outcome variable, class

attendance against the explanatory variable, mean amount of higher education loan while controlling for individual student respondent's characteristics. The third model fitted the outcome variable, class attendance against the explanatory variable, mean amount of higher education loan while controlling for both individual student respondent's and university characteristics.

The third objective of the study was to assess the living conditions of privately sponsored undergraduate higher education loan recipients in public universities in western Kenya. The data was analysed descriptively and thematically. However, in order to establish the relationship between living condition and student's socio-economic status, the data on student living conditions proxies were subjected to chi-square test with Cramer's V against the income turtiles.

3.10 Ethical and Legal Considerations

All ethical and legal considerations for conducting research of this nature were met. Research permit was obtained from NACOSTI and shared with all the relevant authorities in the sampled public universities during data collection exercise. Participation was on voluntary basis. As such, only willing respondents participated in the study after their consent was sought. Besides, the respondents were informed of the nature and purpose of this study. Furthermore, anonymity and confidentiality of information was maintained. Data collected was neither distorted nor manipulated in anyway and was only used for the purpose of this study. Conclusions and recommendations on this report were based on the findings of the study.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter covers presentation, interpretations and discussions on the effect of the amount of higher education loan on participation of privately sponsored undergraduate students in public universities in western Kenya. The chapter is divided into the following six sections: Sample Distribution; description of variable used in the study; descriptive statistics of variable used in the study; effect of the amount of higher education loan on type of program of study pursued by privately sponsored undergraduate students; effect of the amount of higher education loan on class attendance by privately sponsored undergraduate students in public universities in Kenya; and, an assessment of living conditions of privately sponsored higher education loan recipients in public universities in Kenya.

4.2 Sample Distribution

Data for this study was collected in three public universities with the aid of Fourth Year Privately Sponsored Undergraduate Students Questionnaire and Dean of Students Interview schedule. Whereas all the three interview sessions were conducted as planned, a total of 455 questionnaires were returned out of the 517 administered. This provided a response rate of 88.008% which was considered adequate for data analysis (Oso & Onen, 2005). The sample distribution was analyzed descriptively by sex and university of study as presented in Table 4.1.

Table 4.1: Distribution of the Sample by Student Sex and University

Student Sex		Student's University			Total
		UoE	JOOUST	MMUST	
Female		71	24	132	227
	a	31.28	10.57	58.15	100
	b	46.1	42.86	53.88	49.89
Male		83	32	113	228
	a	36.4	14.04	49.56	100
	b	53.9	57.14	46.12	50.11
Total		154	56	245	455
	a	33.85	12.31	53.85	100
	b	100	100	100	100

Note. [a]=row percentages, [b]=column percentages; UoE=University of Eldoret; JOOUST=Jaramogi Oginnga Odinga University of Science and Technology; MMUST=Masinde Muliro University of Science and Technology; χ^2 (2, n=455) = 3.55, p<0.170, Cramér's V =0.0883; Cramer's V: weak association=<0.20, moderate association=0.20-0.49; strong association=>0.49

Source: Filed Data, 2016

Data in Table 4.1 shows that the sample was generally evenly distributed between male and female 2012/2013 cohort of privately sponsored undergraduate students in the three public universities. The analysis also shows that there was no statistically significant relationship (p=0.170) between sex of the students and their university of study.

Further, the students sample distribution was analyzed by type of program and university of study. A summary of the distribution is presented in Table 4.2.

Table 4.2: Distribution of the Sample by Student Sex and Programme of Study

Student Sex		Student's university			Total
		STEM	Ed A&SS	Eco/Bus	
Female		44	146	37	227
	a	19.38	64.32	16.3	100
	b	46.32	54.68	39.78	49.89
Male		51	121	56	228
	a	22.37	53.07	24.56	100
	b	53.68	45.32	60.22	50.11
Total		95	267	93	455
	a	20.88	58.68	20.44	100
	b	100	100	100	100

Note. [a]=row percentages, [b]=column percentages; STEM=Science Technology Engineering Medicine; Ed A&SS=Education, Arts & Social Sciences; EcoBus=Economics & Business; χ^2 (2, n=455) = 6.74, p<0.034, Cramér's V =0.1217; Cramer's V: weak association=<0.20, moderate association=0.20-0.49; strong association=>0.49

Source: Field Data, 2016

Data in Table 4.2 shows that there was a statistically significant relationship (p=0.034) between sex of student and their program of study.

4.3 Description of Variables used in the Study

All the variables used in this study were coded and entered for analysis on interval, categorical or dummy scales depending on the nature of the data collected. Table 4.3 provides a summary of the explanations for all variables used in the analysis.

Table 4.3: Description of Variables used in the Analysis of the Data

Variable	Variable label	Scale	Min	Max
a111	1=UoE, 0=Otherwise	Dummy	0	1
a113	1=MMUST, 0=Otherwise	Dummy	0	1
a31	Student's programme of study	Categorical	1	3
mcases3	mcases3=Tertiles based on the MCA	Categorical	1	3
mcases31	Low SES	Dummy	0	1
mcases33	High SES	Dummy	0	1
a12	Male student=1	Dummy	0	1
a21	Yes, HELB is main financier=1	Dummy	0	1
a22	Mean HELB allocation 2012/13-2015/16	Interval	35000	60000
a311	STEM 0=Otherwise	Dummy	0	1
a312	ED A&SS 0=Otherwise	Dummy	0	1
a34	KCSE score 6=C - 12=A	Interval	6	12
a41	Student never misses lectures=1	Dummy	0	1
a43	# of times student has deferred studies	Interval	0	3
a461	1=Did not attend school 0=Otherwise	Dummy	0	1
a462	1=Primary 0=Otherwise	Dummy	0	1
a463	1=Secondary 0=Otherwise	Dummy	0	1
a466	1=Postgraduate 0=Otherwise	Dummy	0	1
a511	Student stays in own house/room=1	Dummy	0	1
a512	Student stays >2 others in room=1	Dummy	0	1
a517	Student's room is well ventilated=1	Dummy	0	1
a519	Student's affords 3 meals daily=1	Dummy	0	1
a52	Student has ever engaged in IGAs=1	Dummy	0	1

Note. Min=Minimum; Max=Maximum; ays=academic years; UoE=University of Eldoret; JOOUST=Jaramogi Oginga Odinga University of Science and Technology; MMUST=Masinde Muliro University of Science and Technology; HELB=Higher Education Loans Board

Source: Field Data, 2016

As shown in Table 4.3, only mean higher education loan amount (a22), KCSE score (a34) and number of times a student deferred studies were measured and analyzed at interval scale. On the other hand, type of program of study (a31) and socio-economic status were categorical in nature. The rest of the variables were treated as dummy variables.

4.4 Descriptive Statistics of Variables used in the Study

All variables used in this study were analyzed descriptively using frequency distributions, percentages, means and standard deviation. The findings are summarised in Table 4.4.

Table 4.4: Descriptive Statistics for Variables used in the Analysis of the Data

Variable	Variable label	Mean	se(mean)	Std.Dev.	Min	Max
a22	Mean HELB loan allocation 2012/13-2015/16	40207.69	304.91	6503.92	35000	60000
a34	KCSE score 6=C - 12=A	8.44	0.06	1.38	6	12
a43	# of times student has deferred studies	0.21	0.02	0.5	0	3
Frequencies and percentages for dummy and categorical variables (percentages in parentheses)					0=Otherwise	1=Yes
a111	UoE 0=Otherwise				301 (66.15)	154 (33.85)
a113	MMUST 0=Otherwise				210 (46.15)	245 (53.85)
mcases31	1=Low SES				303 (66.59)	152 (33.41)
mcases33	3=High SES				304 (66.81)	151 (33.19)
a21	HELB is main financier=1				292 (64.18)	163 (35.82)
a311	STEM 0=Otherwise				360 (79.12)	95 (20.88)
a312	ED A&SS 0=Otherwise				188 (41.32)	267 (58.68)
a41	Student never misses lectures=1				237 (52.09)	218 (47.91)
a461	1=Did not attend school 0=Otherwise				441 (96.92)	14 (3.08)
a462	1=Primary 0=Otherwise				411 (90.33)	44 (9.67)
a463	1=Secondary 0=Otherwise				346 76.04	109 (23.96)
a466	1=Postgraduate 0=Otherwise				427 (93.85)	28 (6.15)
a511	1= Student stays in own house/room=1				332 (72.97)	123 (27.03)
a512	Student stays >2 others in room=1				289 (63.52)	166 (36.48)
a517	Student's room is well ventilated=1				302 (66.37)	153 (33.63)
a519	Student's affords 3 meals daily=1				301 (66.15)	154 (33.85)
a52	Student has ever engaged in IGAs=1				336 (73.85)	119 (26.15)
a12	Male student=1; Female student=0				0=227 (49.89)	1=228 (50.11)
a31	Student's programme of study, 1=STEM, 2=Ed A&SS and 3=EcoBus			1=95 (20.88)	2=267 (58.68)	3=93 (20.44)
mcases3	Tertiles based on the MCA; 1=Low SES, 2=Middle SES &3=High SES			1=152 (33.41)	2=152 (33.41)	3=151 (33.19)

Note. Min=Minimum; Max=Maximum; se(mean)=Standard Error of the Mean; Std.Dev.=Standard Deviation; STEM=Science Technology Engineering Medicine; Ed A&SS=Education, Arts & Social Sciences; EcoBus=Economics & Business

Data in Table 4.4 indicate that the students who got the highest amount of higher education loan received Ksh. 60,000, while the ones awarded the least amounts got Ksh. 35,000. However, the mean amount awarded to privately sponsored undergraduate students in the public universities was Ksh. 40,207.69. The mean higher education loan award was equivalent to only 36.56 % of the cost of tuition per annum for the least expensive category of programmes in Education, Arts and Social Sciences in the public universities. The implication is that the students had to look for other sources of financing to bridge the gap between the amount of loan awarded and tuition fees charged. These findings point to the fact that higher education loan is indeed an inadequate mode of financing higher education for the majority, more so the 35.82% of the students who indicated that HELB was their main financier. The findings of this study are in line with those of Otieno (2004), Nafukho (2001) and Standa (2000) which observed financial hardship among university students in Kenya and attributed it to inadequate financing.

Inadequacy of higher education loan isn't unique Kenyan problem. Studies show that this challenge is common in many African countries just like in other parts of the world. In Ghana for instance, the Student Loan Trust Fund (SLTF) has been heavily criticized for the insufficient loan amounts advanced to students in various institutions of higher learning. In fact, the SLTF only covers about a third of the fees for each academic year (Okae, 2012).

Similarly, in spite of its popularity, the Unites States of America's subsidized federal student loan limits currently are below the cost of a majority of private institutions of higher learning and most flagship public universities. This is because the maximum amount of federal loan that a student can borrow is dependent on federal policies.

Consequently, the students therefore are left with no other option other than borrow higher cost private student loans to make up the difference. Unlike the case in federal loans which are subsidized and have flexible deferment and repayment provisions, the challenge with these private student loans is that they are operated on market rates. As such, they have contributed greatly to student debt crisis (Schemo, 2007).

In this study, amount of higher education awarded to privately sponsored undergraduate students in public universities was used as independent variable in the first and second objectives.

In a related finding, Table 4.4 shows that up to 26.15% of the privately sponsored higher education loan recipients sampled indicated that they ever engaged in some income generating activities as a survival mechanism while at the university. This finding was corroborated by interview data from the deans of students who indicated that quite a number of university students were either employed on part-time basis or engaged in some business to make ends meet. These findings point to the fact that the inadequate awarded amounts of higher education loan could be driving them into undertaking income generating activities while at the university. These findings are in agreement with those of other studies that have been undertaken on university student's engagement in income generating activities. Mwinzi (2002) for instance, observed that cost sharing policy drove many students, especially from low socio-economic backgrounds into business and employment.

Similarly, Otieno (2004) noted that it is not uncommon to find university students working as barbers, cobblers, hairdressers, brokers in computer typing and printing, vendors or hawkers of light goods such as writing and photocopying papers, electronics, cigarettes among others. This implies that the individual student engaging

in the income generating activities have to struggle to strike a balance between their academics and sourcing for money to take care of the cost of their education. This can adversely affect student's academic achievement since they would not have sufficient time and conducive environment for studies. In this study, engagement in income generating activities by students for survival was used as proxy indicator of the living conditions of privately sponsored higher education loan recipients under the third objective.

In an equally related finding, Table 4.4 shows that only 47.7% of the sampled privately sponsored higher education loan recipients indicated that they never missed classes at the university. The questionnaire item on class attendance required the sampled students to indicate the number of times they miss classes on a weekly basis. These findings point t the fact that absenteeism from class among privately sponsored students is a significant challenge in the Kenyan public universities.

These findings are inline with the findings of other previous studies which have shown that daily absenteeism at the universities can be as high as one-third to almost one-half of students in certain disciplines (Friedman, Rodriguez and McComb, 2001; McGuire, 2003; Moore, 2003a; 2003c; 2005). The findings of these studies suggest that absenteeism among students is a significant challenge at sampled universities as is the case in many other institutions of higher learning across the globe in spite of the fact that state and individual institutional policies exist (Holdforth, 2007; Leon, 2007; Romer 1993).

This is quite alarming since educational practitioners agree that class attendance is an important aspect of student life. This is because it assists student learn differently by

bringing theory to life and creating opportunity for discussions, explanation and collaboration on topics. Moreover, class attendance positively contributes to students' skills in self-management, team work and problem solving. Furthermore, students refine and practice communication and literacy skills with application of numeracy and information technology in class (Braak, n.d). These aspects are crucial in latter students' life and enhance their employability and productivity (Manchester Metropolitan University: Careers & Employability Service, 2012).

Furthermore, studies across disciplines have indicated a positive relationship between class attendance and student's academic performance. They include, Clark et al. (2011), Chou & Kuo (2012), Thatcher, Fridjhon, and Cockcroft (2007). Others include; Crede, Roch, & Kieszczynka (2010) in a Meta analysis, Adair & Swinton (2012), Arulampalam, Naylor, & Smith (2012), Dobkin, Gil, & Marion (2010), Paisley & Paisley (2004), Nyamapfene (2010) in engineering, Landin & Perez (2015) in pharmacy and Cohall & Skete (2012) in health.

Stakeholders therefore need to relook at the available policies and practices with the view of devising sound strategies aimed at enhancing class attendance at the institutions of higher learning. Of significance would be the findings of other studies that have attempted to explain why students miss classes in such alarming proportions. The studies have linked absenteeism to poor pedagogical approaches, especially in social sciences, inadequate financing and social and work commitments among students (Holdforth, 2007; Gump 2006; Nicholl and Timmins, 2005; Hughes 2005; Timmins and Kaliszer 2002; Hunter and Tetley 1999; Longhurst, 1999).

In this study, frequency of class attendance was used as the outcome variable in the second objective.

4.5 Effect of Higher Education Loan Amount on Type of Program of Study by Privately Sponsored Undergraduate Students in Public Universities in Kenya

The first objective of this study was to determine the effect of the amount of higher education loan on type of program of study pursued by privately sponsored undergraduate students in public universities in Kenya. In order to effectively address this study objective, multinomial logistic regression analysis was used to fit the mean amount of higher education loan against type of program of study pursued by privately sponsored undergraduate students, while controlling for student characteristics and university of study.

Prior to modeling, pair-wise correlation and chi-square with Cramer's V were used to correlate the outcome variable (type of program of study) with all possible continuous and categorical explanatory variables respectively with the view of determining which plausible interactions to pursue in the regression models. The null hypothesis was rejected at 5% if the significance was less than alpha=.05. Only variables which had significant relationship with the dependent variable were pursued further in the regression analysis.

The results of pair-wise correlation showed that only mean higher education loan amount and academic performance at KCSE were the only statistically significant continuous explanatory variables. See *Appendix III.* On the other hand, the results of chi-square test showed that student's sex, socio-economic status, highest educational

attainment of head of household and university were the only statistically significant categorical variables. This information is contained in *Appendix III.*

Consequently, three sequential regression models were developed. The first model fitted Mean amount of higher education loan (predictor variable) against student's program of study (the outcome variable). The second model fitted Mean amount of higher education loan (predictor variable) against student's program of study (the outcome variable) while controlling for individual student respondent's characteristics. The third model fitted Mean amount of higher education loan (independent variable) against student's program of study (the outcome variable) while controlling for both the student respondent and university characteristics. The findings from the three models are summarised in Table 4.5.

Table 4.5: Multinomial Logistic Regression for the Association between Student's Programme of Study and HELB Loans (2012/13-2015/16 AYs)

		1=Science Technology Engineering Medicine Verses Education, Arts and Social Sciences						3=Economics and Business Verses Education, Arts and Social Sciences					
		Model 1 (a31)		Model 2 (a31)		Model 3 (a31)		Model 1 (a31)		Model 2 (a31)		Model 3 (a31)	
Variable	Variable label	RRR	*p*	RRR	*P*	RRR	*p*	RRR	*p*	RRR	*P*	RRR	*P*
	a22= Mean HELB loan allocation	1.00	0.002					1.00	0.048				
a22	2012/13-2015/16			1.00	0.337	1.00	0.378			1.000	0.282	1.00	0.210
mcases31	mcases31=Low ses			1.79	0.109	1.85	0.100			1.495	0.241	1.41	0.344
mcases33	mcases33=High ses			0.43	0.104	0.53	0.248			1.890	0.073	3.12	0.003
a12	a12= Male student=1			1.52	0.197	1.67	0.124			1.584	0.074	1.55	0.103
a21	a21= Yes, HELB is main financier=1			4.15	0.000	4.13	<.001			1.244	0.441	0.85	0.592
a34	a34= KCSE score 6=C - 12=A			2.58	0.000	2.68	<.001			1.344	0.006	1.11	0.383
a41	a41= Student never misses lectures=1			2.72	0.002	2.93	0.002			1.508	0.117	1.38	0.260
a462	a462= 1=Primary 0=Otherwsise			0.07	0.019	0.07	0.017			0.633	0.306	0.44	0.076
a463	a463= 1=Secobdary 0=Otherwsise			0.57	0.228	0.56	0.224			0.755	0.420	0.57	0.113
a466	a466= 1=Postgraduate 0=Otherwsise			1.57	0.426	1.84	0.298			0.637	0.517	0.58	0.458
a111	a111 1=UoE 0=Otherwise					1.78	0.337					2.85	0.013
a113	a113 1=MMUST 0=Otherwise					1.87	0.286					0.43	0.038
Constant		0.04	<.001	0.00	<.001	0.00		0.08	0.001	0.01	<.001	0	0.01
N		455		455		455		455		455		455	
LR chi2(df); Value		(2) 10	0.006	(20) 202	<.001	(24) 241	<.001	(2) 10	0.006	(20) 202	<.001	(24) 241	<.001
Pseudo R^2		0.0117		0.2303		0.2750		0.0117		0.2303		0.2750	

Note. LR=Likelihood Ratio; df=degrees of freedom; Ays=Academic Years; RRR=Relative Risk Ratio

Source: Stata Output, 2017

In the first model, while holding other factors constant a multinomial regression analysis was run to determine the effect of higher education loan amount on a student's likelihood of studying STEM or Economics/Business related disciplines over Education, Arts and Social Sciences. As shown in Table 4.5, mean amount of higher education loan had some effect on the type of program of study for the 2012/2013 cohort of privately sponsored students in public universities in Kenya. In specific, a one unit increase in mean amount of higher education loan award increased the relative risk ratio of studying STEM or Economics/Business by 1.00053 times (p=0.002) and 1.000036 times (p=0.048) respectively against the relative risk ratio of studying Education, Arts and Social Sciences. Furthermore, the constants for the model were statistically significant as was the overall model (p=0.006 with a pseudo R2=.0.0117). However, model one only explained 1.17% of the variability of the response data around its mean. This implied that the model only explained 1.17% of variations in choice of program of study by the privately sponsored higher education loan recipients in public universities in western Kenya.

Furthermore, when student characteristics were controlled for in the second model, the mean higher education loan award became statistically insignificant (p=0.337, p= 0.282 respectively) in both scenarios of STEM over Ed, A & SS and Economics/Business related disciplines over Ed, A & SS. However, the constants in both scenarios of STEM over Ed, A & SS and Economics/Business related disciplines over Ed, A & SS were significant (p<.001) as the overall model p<.001 with a pseudo R^2=0.2303. This implies that the model only explained 23.03% of variations in choice of program of study by the privately sponsored higher education loan recipients in public universities in western Kenya.

Be that as it may, the second model shows that certain student characteristics were significant in explaining choice of program of study by the privately sponsored higher education loan recipients in public universities in western Kenya. They included variables such source of financing higher education, KCSE performance and highest educational attainment of head of household.

In specific, concerning source of financing, the model shows that the relative risk ratio of studying STEM programmes over Education, Arts and Social Sciences increased by 4.148306 times ($p=0.001$) for students who indicated that HELB was their main financier. However, the effect was not statistically significant for the same group of students when it comes to studying Economics and Business related disciplines over Education, Arts and Social Sciences which was the reference category.

With regards to KCSE performance, the model indicate that one point increase in KCSE performance (7-12) increased the relative risk ratio of studying STEM over Education, Arts and Social Sciences by 4.148306 ($p<.001$). The same relationship was not significant in the Economics and Business model where a one point increase in KCSE (7-12) was associated with studying Economics and Business related disciplines over Education, Arts and Social Sciences by 1.344497 ($p=0.006$).

Concerning educational attainment of head of household, the model shows that students from households with head who only attained primary education compared with those with other educational attainments had a reduced relative risk ratio of .07452 ($p=0.019$) times of studying STEM programmes over Education, Arts and

Social Sciences. This means that this group of students was more likely to study Education, Arts and Social Sciences than they were to study STEM programmes.

However, other student characteristics such as gender were found to be insignificant in predicting the likelihood of a student pursuing STEM programmes or Economics and Business disciplines over Education, Arts and Social Sciences.

In the third model, while controlling for both student level characteristics and university of enrolment findings show that mean higher education loan award was still statistically insignificant ($p=0.378$, $p=0.210$) in both scenarios of STEM over Ed,A &SS and Economics/Business related disciplines over Ed,A &SS respectively.

However, the constants in both scenarios of STEM over Ed,A &SS and Economics/Business related disciplines over Ed,A &SS were significant, as well as the overall model, $p<.001$ with a pseudo R^2 =0.2750. This implies that the model explained 27.50 % of the variations in choice of program of study by privately sponsored undergraduate students in public universities in western Kenya.

Be that as it may, the third model shows that student characteristics such as source of financing, KCSE performance, and educational attainment of head of household and family socio-economic status still remained significant in explaining choice of program of study by the privately sponsored higher education loan recipients in public universities in western Kenya.

In specific, with regards to source of financing, the findings show that the relative risk ratio of students whose HELB is main financier studying STEM programmes over

Education, Arts and Social Sciences increased by 4.131078 times (p<.001). This point to the fact that higher education loan is indeed an important financing mechanism.

Concerning students' entry behavior as measured by their performance in KCSE, the study shows that a one point increase in KCSE (7-12) increased the relative risk ratio of studying STEM over Education, Arts and Social Sciences by 4.148306 (p<.001). The same relationship was significant in the Economics and Business model where a one point increase in KCSE (7-12) was associated with studying Economics and Business related disciplines over Education, Arts and Social Sciences by 1.344497 (p=0.006). The findings point to the fact that academic performance at KCPE remains an important predictor for choice of STEM for students even under self-sponsored mode of study where entry requirements are lower compared to what their government sponsored counterparts are treated to. This finding can be attributed to the fact that STEM programs by their very nature require high level of intellectual capability. As such, even when opportunity was availed, students who did not score well at KSCE did shy away from STEM programs.

Further, the findings suggest that the gifted and most able students prefer STEM to other programs of study in public universities in western Kenya. This is because science related disciplines are associated with higher returns and opportunities (Dickson and Harmon, 2011; O'Leary and Sloane, 2005; Blundel et al, 1999) The finding therefore is inline with the preposition the most talented and gifted people choose occupations that are associated with increasing returns to ability since increasing returns allow 'superstars' to earn extraordinary returns to their talent (Muthui, 2013; Menon, 1999; Murphy, Shleifer & Vishny, 1991; Rosen, 1981).

In relation to educational attainment of head of household, the findings show that the relative risk ratio of studying STEM programmes over Education, Arts and Social Sciences for students from households with heads who had attained primary education as the highest level of education decreased by .07452 (p=0.019) times. These findings on reduced relative risk ratio of studying STEM over Education, Arts and Social Sciences for students from households with head who have attained primary education point to the important role of educogenics in demand for education. Educogenics refers to a situation whereby a strong family background in education positively affects the academic achievement of the offspring's. Generally, children born in homes where family members have good education are more exposed and would naturally aspire to do well in school. Consequently, such children would tend to demand for more and better education (Gravenir et al, 2005; Ayot & Briggs, 1992; Psachoropoulos & Woodhall, 1985; Atinkinson, 1983; Gravenir et al, 1990).

Concerning family socio-economic status, the findings show that the relative risk ratio of studying Economics/Business related disciplines over Ed,A &SS for students from high socio-economic status increased by 3.12 (p=0.003) times. These findings suggest that socio-economic status is a predictor of type of program of study among the privately sponsored undergraduate students in public universities in spite of higher education loan. The findings of this study concur with those of Odebero (2008) which observed that access to competitive programmes of study was a function of one's socio-economic class. The study showed that apart from educational and art based courses which attracted students from across the board, other programmes had an inclination towards ones' social class. In specific, the study established that enrolment into technology, commercial related courses and medicine was greatly skewed

towards middle and high socio-economic classes. Odebero (2008) was however conducted among the government sponsored undergraduate students in public universities whose placement into specific type of programme of study is done by a central placing body known as Kenya Universities and Colleges Central Placing Services (KUCCPS). The current study on the other hand was undertaken among the undergraduate privately sponsored students who choose their programme of study by themselves.

The implication of the findings of these two studies is that in spite of higher education loan, socio-economic status remains a significant predictor choice of program of study by university students in Kenya. As such, higher education loan doesn't promote equal opportunity in education contrary to the expectations of the theoretical paradigm of classical liberal theory. The classical liberal theory states that social mobility will be promoted by equal opportunity of education.

Besides student characteristics, the third model shows that university factor was also significant in explaining the type of program of study by privately sponsored undergraduate higher education loan recipients. In specific, the findings indicate that the relative risk ratio of studying Economics and Business related disciplines over Education, Arts and Social Sciences for students enrolled in University of Eldoret increased 2.8248 times ($p=0.019$). However, this relationship was not statistically significant for the same group of students in the STEM verses Education, Arts and Social Sciences scenario.

However, the relative risk ratio of studying Economics and Business related disciplines over Education, Arts and Social Sciences for students enrolled at MMUST decreased 0.406131 times (p=0.025). This relationship was not statistically significant for the same group of students in the STEM verses Education, Arts and Social Sciences model. The findings of this study suggest that university factor plays an important role in students' college choices. These findings are consistent with the findings of McFadden (2015) which observed that college's identity constructs such as geography, cost and reputation are important predictors of student college choice.

In summary therefore under the first objective of the study, a post estimation test of hypothesis for logistic regression was undertaken after the three sequential models. See *Appendix III.* The findings revealed likelihood-ratio for type of programme of chi^2 (2) =1.83, p = 0.4010, which was not statistically significant at alpha 0.005. The researcher therefore failed to reject the hypothesis.

The findings of this study are not inline with those of other previous studies. Zinderman (2005), for instance showed that student loans play a significant role in increasing educational choices. This position was supported by Heller (2008) which concluded that student loans play a significant role in increasing educational choice because it doesn't deter potential student from disadvantaged backgrounds from university participation more than other students, since loan repayment depend on the future ability to pay, rather than current financial circumstances.

The variance in findings between the current study and the previous ones could be attributed to inadequacy of the loan amount, award criteria and HELB disbursement practices. It's important to note that inadequacy of higher education loan by HELB has been documented (Mwinzi, 2002; Standa, 2000) Besides, this study established a

mean of annual higher education loan amount of Ksh. 40,207 awarded to the 2012/2013 cohort of privately sponsored undergraduate students in the public universities. This amount of loan award was equivalent to 36.56 % of the cost of tuition per annum for the least expensive category of programmes in Education, Arts and Social Sciences in the public universities. As such, the limited amount may not have had significant effect on type of program.

Besides, HELB disburses loans to privately sponsored undergraduate students in the second semester, long after the students have reported and completed the first semester (www.helb.ac.ke). The implication of this arrangement is that the majority poor who cannot afford first semester fees and associated costs are prevented from accessing higher education, especially in the more competitive high cost programs. This negates the very essence of widening the scope of HELB to cover privately sponsored undergraduate students from low socio-economic backgrounds. Appropriate financing mechanism ought to widen participation in higher education. There is need for HELB to borrow a leaf from the Ghanaian arrangement that allows for simultaneous application for both university entry and the loan accelerate disbursement of the loan at the beginning of the semester (Atuahene, 2007). This goes along way in promoting efficiency in loan disbursement.

Besides the poor disbursement practices, the insignificant effect of the amount of higher education loan on type of program as determined by this current study can also be linked to the fact that the loan awards by HELB aren't means tested and differentiated according to program of study. Instead, the loan amounts are based on the applicants' socio-economic status (www.helb.ac.ke) where by students from lower socio-economic status are awarded more than their counterparts in the middle and

high socio-economic statuses (Musera, 2014). Consequently, the loan amount awarded to the privately sponsored students doesn't reflect the relative cost of program of study. There is need for HELB to borrow a leaf from the Ghanaian Student Loan Trust Fund whereby students pursuing science course are awarded higher amounts of loan compared to their counterparts in humanities (Atuahene, 2007).

4.6 Effect of Higher Education Loan Amount on Frequency of Class Attendance by Privately Sponsored Undergraduate Students in Public Universities in Kenya

The second objective of this study was to determine the effect of the amount of higher education loan on frequency of class attendance by privately sponsored undergraduate students in public universities in Kenya. In order to effectively address this study objective, logistic regression analysis was used to model the effect of mean amount of higher education loan on frequency of class attendance while controlling for student characteristics and university factor.

Prior to modelling, pair-wise correlation and chi-square with Cramer's V were used to correlate the outcome variable (frequency of class attendance) with all possible continuous and categorical explanatory variables respectively with the view of determining which plausible interactions to pursue in the regression models. The null hypothesis was rejected at 5% if the significance was less than alpha=.05. Only variables which had significant relationship with the dependent variable were pursued further in the regression analysis.

The results of pair-wise correlation showed that mean higher education loan amount was the only statistically significant continuous explanatory variable. See *Appendix III.* On the other hand, the results of chi-square test showed that student's socio-

economic status, highest educational attainment of head of household and university were the only statistically significant categorical variables. This information is contained in *Appendix III*.

Consequently, three sequential regression models were developed. The first model fitted the outcome variable, class attendance against the explanatory variable, mean amount of higher education loan. The second model fitted the outcome variable, class attendance against the explanatory variable, mean amount of higher education loan while controlling for individual student respondent's characteristics. The third model fitted the outcome variable, class attendance against the explanatory variable, mean amount of higher education loan while controlling for both individual student respondent's and university characteristics. The results of the three models are presented in Table 4.6.

Table 4.6: Logistic Regression Odds for the Association Between Student's Class Attendance and Higher Education Loans (2012/13-2015/16 AYs), Objective 2

		Model 1 (a31)		Model 2 (a31)		Model 3 (a31)	
Variable	Variable label	OR (Std.Err)	*P*	OR (Std.Err)	*P*	OR (Std.Err)	*p*
a22	Mean HELB loan allocation 2012/13-2015/16	1.00 (0.00)	0.523	1.00 (0.00)	0.959	1.00 (0.00)	0.760
mcases32	2=Middle SES			1.78 (0.43)	0.017	1.84 (0.45)	0.012
a21	1= Yes, HELB is main financier=1			1.87 (0.46)	0.012	1.68 (0.44)	0.045
a311	1=STEM 0=Otherwise			1.30 (0.46)	0.456	1.43 (0.51)	0.318
a312	1=ED A&SS 0=Otherwise			0.60 (0.17)	0.072	0.61 (0.19)	0.105
a461	1=Did not attend school 0=Otherwise			0.23 (0.16)	0.032	0.19 (0.14)	0.024
a463	1=Secondary 0=Otherwise			0.69 (0.19)	0.170	0.60 (0.17)	0.072
a466	1=Postgraduate 0=Otherwise			1.86 (0.88)	0.189	1.79 (0.83)	0.212
a43	Number of times student has deferred studies			0.99 (0.22)	0.960	1.05 (0.24)	0.832
a52	Student has ever engaged in IGAs=1			0.09 (0.03)	0.000	0.10 (0.03)	<.001
a112	UoE 0=Otherwise					2.71 (1.05)	0.010
a113	MMUST 0=Otherwise					1.02 (0.28)	0.929
Constant		0.63 (0.37)	0.440	1.50 (1.16)	0.600	0.00	
N		455		455		455	
LR chi2(df); Value		(1) 0.40	0.523	(10) 116	<.001	(12) 124	<.001
Pseudo R^2		0.0006		0.1836		0.1970	

Note. LR=Likelihood Ratio; df=degrees of freedom; Ays=Academic Years

Source: Stata Output, 2017

In the first model, logical regression was run to determine the effect of the amount of higher education loan (Mean HELB loan allocation 2012/13-2015/16) on class attendance (a41= student never misses classes=1). As shown in Table 4.6, the study revealed that a one unit increase in mean higher education loan allocation increased the odds of never missed classes by a paltry 0.0006%. Though positive, the increase was negligible. This result was however not statistically significant (p=0.523). The constants for the model was equally insignificant (p=0.440) as was the overall model (p=0.5231).

Further, the mean higher education loan allocation still remained statistically insignificant (p=0.001) when student-level characteristics were controlled for in the second model when student level characteristics were controlled for. However, the overall model was statistically significant p<.001 with a pseudo R^2=0.1836. The R^2=0.1836 implies that the model explained 18.36% of variations in class attendance of privately sponsored higher education loan recipients in public universities in western Kenya.

However, the model indicates that some student-level characteristics were statistically significant in explaining frequency of class attendance privately sponsored higher education loan recipients in public universities in western Kenya. They include socio-economic status and mode of financing higher education.

With reference to socio-economic status, the findings show that the odds of never missed classes increased by 77.67% (p=0.017) for students in the middle socio-economic status category than for the other socio-economic categories.

Concerning mode of financing, the findings show that the odds of never missed classes increased by 86.66%, (p=0.012) for students whose main financier was HELB than for students who indicated that HELB wasn't their main financier.

In the third model, the Mean higher education loan allocation 2012/13-2015/16 remained statistically insignificant (p=0.1970 with a pseudo R^2=0.1970) when both student-level characteristics and university factor were controlled for. However, the overall model was statistically significant p<.001 with a pseudo R2=0.1970. The R^2 of 0.1970 implies that the model explained 19.7% of variations in class attendance of privately sponsored higher education loan recipients in public universities in western Kenya.

Be that as it may, the third model shows that the two student characteristics of socio-economic status and mode of financing higher education remained statistically significant in explaining variations in class attendance by privately sponsored undergraduate higher education loan recipients in public universities in western Kenya. For instance, the model shows that the odds of never missed classes increased by 83.62% (p=0.012) for students in the middle SES category over other socio-economic status categories. This finding suggests that in spite of higher education loan, socio-economic status has an effect on class attendance by the privately sponsored undergraduate students in the public universities. This implies that the higher education loan doesn't promote equal opportunity in education contrary to the expectations of the theoretical paradigm of classical liberal theory. The classical liberal theory states that social mobility will be promoted by equal opportunity of education

The findings of this study are inline with the findings of other previous researches that correlated student's socio-economic status with their engagement in academics activities. One such study is Soria, et. al (2014). In a study entitled "Financial decisions among undergraduate students from low-income and working-class social class backgrounds", Soria, et. al (2014) revealed that low income and working social class background students are more likely to feel stressed by their finances and view college period as time they must work. In contrast, students from upper socio-economic backgrounds tend to be more engaged in academics (Stuber, 2011). This implies that students from low socio-economic status are distracted from focusing on their academics. This may have adverse effects on their academic performance since studies show that class attendance is indeed an important predictor of academic excellence. The studies that have revealed a positive relationship between class attendance and academic performance include: Crede, Roch, and Kieszczynka (2010) in a Meta analysis; Adair & Swinton (2012); Arulampalam, Naylor, & Smith (2012); Dobkin, Gil, & Marion (2010); Paisley & Paisley (2004); Nyamapfene (2010) in engineering; Landin & Perez (2015) in pharmacy and Cohall & Skete (2012) in health.

Besides socio-economic status, the other student characteristic that was statistically significant in the third model was the mode of financing higher education. In specific, the study shows that the odds of never missed classes increase by 67.98%, $p=0.045$ for students whose main financier is HELB against the students who indicated that HELB was not their main financier. This finding is suggestive of the point that loan scheme increases students' level of academic responsibility and focus on academics. This is because the loan has to be repaid at some interest rate. As such, the individual

students would take serious their academics and maximize their stay at the university. Dolk (2015) supports this position by saying that loans make college students view their education as personal financial investment which should yield returns after some specified period of time.

The findings however shows that other student characteristics like type of program of study were statistically insignificant in explaining variations in frequency of class attendance by privately sponsored higher education loan recipients in public universities in western Kenya. These findings are at variance with the findings of other previous studies that have linked attendance to area of specialty. Romer (1993) for instance, found that the more significant the mathematical component of the course, the less the absenteeism.

However, the third model shows that university factor was significant in explaining variations in frequency of class attendance by privately sponsored higher education loan recipients in public universities in western Kenya. In specific, the findings indicate that the odds of never missing lectures increase by 171%, p=.010 for students at Jaramogi Oginga Odinga University of Science and Technology (JOOUST) compared with their colleagues in University of Eldoret (UoE) and Masinde Muliro University of Science and Technology (MMUST). JOOUST has relative smaller student population compared to UoE and MMUST. As such, the findings of this study suggest that class size was associated with class attendance by privately sponsored undergraduate students in the public universities. These findings are in line with those of Romer (1993) who investigated the links between absenteeism and various characteristics of classes found that smaller classes had less absenteeism.

In summary therefore under the second objective of the study, a post estimation test of hypothesis for logistic regression was undertaken after the three sequential models, See *Appendix III.* The findings showed likelihood-ratio for class attendance of chi^2 (1) =0.09, p = 0.7600, which was not statistically significant at alpha 0.05. The researcher therefore failed to reject the hypothesis. The finding suggests that higher education loan amount has no statistically significant effect on class attendance by privately sponsored higher education loan recipients in public universities in western Kenya. The findings of the current study are not inline with those of Hurtado, et. al (2003), which postulated that recipients of student aid worked for significantly fewer hours per week thus allowing them to focus on engagement in college and other aspects of the transition experience.

The reason for variance in the findings of the two studies could be attributed to the fact that Hurtado, et. al (2003) focused on scholarship which covers nearly all direct cost of higher education. The current study however looked at higher education loan which covered less than 40% of average tuition fees for the least expensive self-sponsored programs in the public universities. Therefore, the individual student has to bridge the financing gap. Consequently, in the absence of reliable complementary sources of finances, many higher education loan recipients would experience financial hardships and would not concentrate in academic activities such as class attendance. This is supported by such studies as Nyakunga (2011), Rugambuka (2008), Tekleselassie and Johnstone (2004), Mwinzi (2002), Nafukho (2001) and Standa (2000). The studies show that university students who encounter financial hardship tend to be less engaged in their academics.

This is grounded in Maslow's hierarchy of needs theory which postulates that human beings only aspire to achieve the higher order needs in the hierarchy when their basic needs have been taken care of. As such, they first concentrate on the basic physiological needs such as food, shelter, and clothing, among others. Only then, they can strive to engage in academic activities such as class attendance. Consequently, higher education financing should be adequate enough if it has to impact on positively on student's class attendance.

4.7 An Assessment of the Living Conditions of Privately Sponsored HELB Loan Recipients in Public Universities

The third objective of this study was to assess the living conditions of privately sponsored undergraduate higher education loan recipients in public universities. Data on the living conditions was collected from the sampled 2012/2013 cohort of privately sponsored higher education loan recipients by way of a questionnaire. *See Appendix I.* Besides, three interview sessions were held with the respective deans of students in the three public universities selected. *See appendix II*. Interview data was used to corroborate findings from the student respondents' questionnaires.

The data was analysed descriptively and thematically and thereafter merged for presentation. The following four themes emerged: general students living conditions; relationship between student's living conditions and their socio-economic status; the state of students' accommodation facilities; and, student's engagement in income generating activities as survival mechanisms.

4.7.1 General Living Conditions of Privately Sponsored Higher Education Loan Recipients in Public Universities

Data for the general living conditions of privately sponsored undergraduate higher education loan recipients was collected from the students by use of self-administered

questionnaire. In the student's questionnaire, the sampled 2012/2013 cohort of privately sponsored higher education loan recipients were asked to indicate by ticking YES or NO on questions related to eight selected basic student living conditions proxies. The data was then analysed descriptively using frequencies, percentages and means. The findings are summarised in Table 4.7.

Table 4.7: Student Responses on their Living Conditions

Living conditions Proxies	Responses			
	Yes		No	
	F	%	F	%
I stay in my own house/room while studying at the university	123	27	332	73
I stay in a house/room with adequate reading space	197	41.1	268	58.9
I stay in a house/room with a reading desk and chair	198	43.5	257	56.5
My accommodation facility is located hygienic environment	148	32.5	307	67.5
My accommodation facility is well ventilated	153	33.6	302	66.4
I can afford three meals on daily basis	154	33.9	301	66.2
I can afford balanced diet on daily basis	115	25.3	340	74.7
I have adequate financial resources to cater for my library needs	131	28.8	324	71.2
Mean % Frequency	33.22		66.79	
Minimum value	25.27		56.48	
Maximum Value	43.42		74.73	

Note: F=Frequency; %=Percentage
Source: Field Data, 2017

It can be observed from Table 4.7 that the mean for affirmative response for all the cases was 33.22%. This implies that a majority of the respondents, 66.79% did not identify with all the selected eight basic student living condition proxies. The least popular living condition proxy was balanced diet with only 25.27% of them indicating that they could afford balanced diet on daily basis. In addition, only 33.85% of the students could afford three meals in a day. On the other hand, room with desk and chair was the most popular student living condition proxy at 43.53%. Be that as it may, affirmative responses of less than 40% for six out of eight of the basic student living conditions proxies suggests that most of the privately sponsored higher education loan recipients live in conditions best described as low quality.

These findings were corroborated by interview data which indicated that a majority of the privately sponsored students were struggling to make ends meet. In one of the interview sessions, the respondent said:

> *Some of these students are just putting on brave faces. They go all day without meals. Some don't even have proper clothing yet their colleagues put on designer wears. Such is the irony at the university....*

These findings point to the fact that living conditions of privately sponsored higher education loan recipients' conditions of life are generally poor. The findings of this study agree with those of other studies previously conducted among university students in the country. Gisesa (2012) for instance observed that many students lived in deplorable conditions which in most cases are in some dingy corner of town. Mwinzi (2002) on the other hand noted that financial hardships push university students into some from of income generating ventures as survival mechanism.

Similar observations were made by Otieno (2004) who postulated that it is not uncommon to find university students engaging in some odd income generating activities in the form of barbers, cobblers, hairdressers, brokers in computer typing and printing, vendors or hawkers of light goods such as writing and photocopying papers, electronics, and cigarettes among others. Furthermore, media reports indicate cases of unethical and desperate engagements such as drug peddling, prostitution and selling of stolen property among university students all in the name of trying to make ends meet while undertaking their studies (Mwangi, 2000).

These studies point to a much bigger problem at the universities. This is because, besides compromising their study time, such ventures can adversely affect the health and safety of the student at the higher institutions of learning. Furthermore, these

studies point to the fact that higher education financing is not sufficient for adequate and dignified participation of students, especially those from low socio-economic status. Worse affected are the privately sponsored undergraduate students whose higher education loan amounts are not only inadequate to meet the cost of tuition but also do not support their living expenses Nyakunga (2011).

The general poor living conditions among public university students is attributed to inadequate and inappropriate higher education financing mechanism. The government therefore needs to relook at cost sharing policy which was introduced in the social sector including education as part of Kenya's International Monetary Bank/World Bank supported Structural Adjustment Programmes (SAPs) in 1988 (Republic of Kenya, 1997). Although introduced on the basis of economically genuine reasons, the policy adversely affected participation of the majority of children from low income. Besides cost sharing, another policy that has had adverse effect on students' living condition has been the government's move to delink students' admission to bed space in public universities (Sifuna, 2010; Kilemi, et al, 2007). Consequently, the students have had to seek alternative accommodation arrangements around the universities. Coupled with inadequate financing, this has pushed the majority poor into renting out houses in the informal settlements.

4.7.2 Condition of the Students' Accommodation Facilities

Interview data showed a majority of the 2012/2013 cohort of privately sponsored higher education loan recipients hailed from outside campus accommodation facilities in all the three public universities. This was attributed to institutional policy that gave priority to first year students on room allocation in the university hostels. Interview data indicate that the universities suffered from acute shortage of accommodation

facilities within campus due to the ever increasing demand for higher education and the fact that government delinked admission into public universities from bed capacities in the respective institutions. As such, the bulk of student population had to seek alternative accommodation facility. However, the data indicate that there were equally few well developed and furnished private halls of residence around the universities sampled. Many students therefore settled in quasi hostels and residential units in the universities' environs.

In all the interview sessions, the deans of students were in agreement that some privately students live in very deplorable conditions. For instance, one of the Deans of Students said:

> *We only accommodate first year undergraduate students on campus due to limited facilities. The majority of the students have to find alternative accommodation outside. However, many of them opt for lowly priced informal settlements around the university. The owners of these private hostels charge exorbitantly. It's not uncommon to find students from humble backgrounds in the slum. And you can imagine life in slums.*

In another session, her counterpart noted:

> *I think it's a financing problem. Most of these students do not have adequate and reliable sources of finance. Some of them were encouraged to enroll at the university by the fact that HELB awards loans to both government sponsored students and their privately sponsored counterparts. Unfortunately, living expenses for privately sponsored students are not factored in the loan. Those from poor backgrounds feel the pinch most. So they end up living in pathetic places.*

These findings point to the fact that that some university students live in pathetic environments in their quest to pursue their studies. The findings of the present study concurs with those of Gisesa (2012) which observed that many students live in deplorable conditions which in most cases are in some dingy corner of town. The findings of these studies suggest that a majority of university students live in

uncondusive learning environment. Yet student success and perseverance can be negatively impacted by poor living environmental factors.

4.7.3 Students' Engagement in Income Generating Activities as Survival Mechanisms

Interview data indicated that a number of students engage in some income generating activities for survival. The range of activities that the students engaged in included part-time jobs within and outside the universities, small businesses and illegal ventures. In one of the interview sessions, the respondent provided more insights and observed that many students engage in income generating activities as survival mechanism. He said:

> *Many of the students have been pushed by economic hardships to undertake odd jobs as vendors, waiters in hotels and even watchmen with hardly any time to concentrate on academics. There are students employed on part-time basis by the private security firm that operate here at the university. They work at night and learn during the day. Something has to be done. We have a work study program meant to cushion students from low socio-economic backgrounds but demand always overrides supply.*

Besides the negative effect on academics, it's indeed demeaning for a student to work as a security guard in the same university he studies in. One can only undertake such ventures out of desperation. This implies that economic hardship among privately sponsored university students is of great magnitude. These findings are in line with those of many other studies that have been undertaken on university students' engagement in income generating activities. They include Gisesa (2012), Ngolovoi (2010) Otieno (2004) and Mwinzi (2002). The studies observed that some students engage in some income generating activities as survival mechanisms. In specific, Otieno (2004) notes that it is not uncommon to find university students living in slums and working as barbers, cobblers, hairdressers, brokers in computer typing and printing, vendors or hawkers of light goods such as writing and photocopying papers,

electronics, cigarettes among others. Similarly, Mwinzi (2002) revealed that 39% of the students engaged in some form of income generating activities as a survival mechanism. The study concluded that if students mainly engage in IGAs to meet living expenses then it implies that either the government or family hasn't been fully supportive.

Furthermore, interview data revealed that some university students are pushed by financial constraints thereby ending up in illicit and criminal trade such as drug peddling, stealing and prostitution. One respondent noted:

> *We have reports that some of our students patronise these clubs in town and offer their bodies for cash...a number have had issues with the police on account of peddling drugs...We handle theft cases involving students almost on a daily basis. So, these things are real!*

This finding is in line with information that that has been in the media for a long time. For instance, Mwangi (2000:June 12) writing for The Daily Nation Newspaper reported increased cases of peddling drugs, prostitution, selling stolen property and other anti-social income generating activities of university students. Although these newspaper reports may not be validated, they serve to point out that cost sharing and inadequate financing have impacted negatively on students' welfare at the universities concerned. It also indicates that the students might be compromising their study time for survival needs. This could greatly affect their academic achievement. Clear evidence exist that student success and perseverance can be impacted by living environment factors. In fact, studies show that students tend to be less engaged in academics when they encounter hardship and live in deplorable conditions (Mwinzi, 2002; Nafukho, 2001; Standa, 2000).

All in all, the general low quality of living conditions among the privately sponsored higher education loan recipients is attributed to inadequate financing. As noted by

one of the dean of students in an interview session, many of these students were encouraged to pursue studies at the university on the premise that HELB would help finance their education. However, the amounts awarded to individual students can hardly pay their tuition fees. Moreover, unlike in the case of their government sponsored counterparts, HELB doesn't support living expenses of the privately sponsored undergraduate students in the public universities.

4.7.4. Relationship between Privately Sponsored Higher Education loan Recipients' Socio-economic Status and their Living Conditions

In order to establish the relationship between the privately sponsored higher education loan recipients' socio-economic status and their living conditions, the data from the student respondents on their living conditions was further analysed and correlated with the student's socio-economic status using chi-square test and Cramer's V. However, prior to the correlation, multiple component analysis (MCA) was used to first categorise the students into three socio-economic statuses of High, Middle and Low. Thereafter, the data on the eight basic student living conditions proxies were subjected to chi-square test with Cramer's V against the income tertiles with the view of determining which plausible interactions to pursue further. The null hypothesis was rejected at 5% if the significance was less than alpha=.05. Only variables which had significant relationship with the dependent variable were pursued further in the regression analysis. The results are summarized in *III*. Consequently, distribution of the five significant basic living conditions proxies was analyzed by students' socio-economic tertiles. The findings are presented in Table 4.8.

Table 4.8: Frequency of Living Condition Proxies by Socio-economic Status

Living condition indices	Socio-economic Status Categories			Totals	
	High	Mid	Low	F	%
I stay in my own house/room while studying at the university	76	68	43	187	41.1
I stay in a house/room with a reading desk and chair	80	72	46	198	43.52
I can afford three meals on daily basis	70	54	30	154	33.85
I can afford balanced diet on daily basis	63	40	12	115	25.27
I have adequate financial resources to cater for my library and stationery needs	71	49	11	131	28.79
Mean Frequency	72	56	28	157	34.51
Minimum Value	60	40	11	115	25.27
Maximum Value	80	72	46	198	43.52

Note: F=Frequency; %=Percentage
Source: Field Data, 2017

Table 4.8 shows that relatively, more privately sponsored undergraduate higher education loan recipients from high socio-economic status indicated that the eight selected basic living condition proxies reflected their living conditions. However, adequacy of financial resources to cater for library and stationery needs and balanced diet were the least popular proxy. In particular, only 11 and 12 students from students from low socio-economic status indicated that they had adequate financial resources to cater for their library needs and afford balanced diet on daily basis respectively. Furthermore, 30 students from low socio-economic status could afford three meals on daily basis only compared to 70 students from high socio-economic status. This is a sorry state of affair. Yet food is basic human want and students usually join university mainly for academic purposes. These findings suggest that socio-economic status influences living conditions of privately sponsored undergraduate higher education loan recipients. The findings of this study concur with those other studies conducted elsewhere. For instance, Soria, et. al (2014) in a study entitled, "Financial decisions among undergraduate students from low-income and working-class social class

backgrounds", revealed that low income and working social class background students are more likely to feel stressed by their finances and conditions of living .In contrast, students from upper socio-economic backgrounds tend to be more engaged in campus life.

This is supported by yet another study by Nyakunga (2011). In specific, the study revealed that financial hardship was experienced more by self-financed students and those with low amounts of loans, especially from low income families. Therefore, the findings of these studies suggest that family socio-economic status remain a predictor of students living conditions in spite of higher education loan. The implication is that higher education loan doesn't promote equal opportunity in education contrary to the expectations of the theoretical paradigm of classical liberal theory. The classical liberal theory states that social mobility will be promoted by equal opportunity of education.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the main findings of the present study inline with the objectives, hypotheses, research question and analytical approach. Moreover, conclusions and recommendations are made as well as suggestions for further research. The chapter is sectionalized into the following four parts: summary of the research findings; conclusions; recommendations of the study; and, suggestions for further research.

5.2 Summary of the Research Findings

The purpose of this study was to determine the effect of higher education loan amount on participation of privately sponsored undergraduate students in public universities in western Kenya. Consequently, three objectives were developed for the study. The summary of findings is therefore hereby presented in three parts by objectives.

5.2.1 Effect of higher education loan amount on type of programme of study by privately sponsored undergraduate university students

The first objective study was to determine the effect of higher education loan amount on the type of programme of study by privately sponsored undergraduate university students. Data was collected with the aid of questionnaires from sampled 2012/2013 cohort of privately sponsored higher education loan recipients in the selected three public universities. Multinomial logistic regression analysis was used to model the effect of higher education loan amount on type of program of study pursued by privately sponsored undergraduate students while controlling for student-level

characteristics and university of study. Consequently, three sequential models were developed.

Thereafter, post estimation test of hypothesis for logistic regression was undertaken. The findings of post estimation test of hypothesis for logistic regression revealed likelihood-ratio for type of programme of chi^2 (2) =1.83, p = 0.4010, which was not statistically significant at alpha 0.005. The researcher therefore failed to reject the hypothesis. These findings point to the fact that higher education loan amount had no statistically significant effect on choice of program of study by privately sponsored university students in public universities in western Kenya. The findings were attributed to inadequacy of the loan amount which was only equivalent to 36.56 % of the cost of tuition per annum for the least expensive category of programs, poor loan disbursement practices and the fact that the loan awards by HELB aren't differentiated according to program of study.

However, the findings of this study showed that student level characteristics such as main mode of financing, KCSE performance, educational attainment of head of household and family socio-economic status were significant in explaining choice of program of study by the privately sponsored higher education loan recipients in public universities in western Kenya.

5.2.2 Effect of Higher Education Loan Amount and Frequency of Class Attendance by Privately sponsored undergraduate Students in Public Universities

The second objective of this study was to establish the effect of higher education loan amount on the frequency of class attendance by privately sponsored undergraduate students in public universities in Kenya. Logistic regression analysis was used to

model the effect of higher education loan amount on frequency of class attendance while controlling for student-level characteristics and university factor. Consequently, three sequential models were developed. Thereafter, a post estimation test of hypothesis for logistic regression was undertaken. The results of post estimation test of hypothesis for logistic regression revealed likelihood-ratio for class attendance of chi^2 (1) =0.09, p = 0.7600, which was not statistically significant at alpha 0.005. The researcher therefore failed to reject the hypothesis. These findings point to the fact that higher education loan amount had no statistically significant effect on frequency of class attendance by privately sponsored university students in public universities in western Kenya. These findings were attributed to the inadequacy of the higher education loan amount given to the privately sponsored undergraduate higher education loan recipients in public universities in western Kenya.

However the findings of this study showed that family socio-economic status, HELB being the main financier and university factor were the variables that were statistically significant in explaining variations in class attendance by privately sponsored undergraduate higher education loan recipients in public universities in western Kenya.

5.2.3 An Assessment of Living Conditions of Privately Sponsored Higher Education Loan Recipients

The third objective of this study was to assess the living conditions of privately sponsored undergraduate higher education loan recipients in public universities. Data on the living conditions was collected from the sampled 2012/2013 cohort of privately sponsored higher education loan recipients and dean of students in the respective sampled public universities. The following four themes emerged: general students

living conditions; relationship between student's living conditions and their socio-economic status; the state of students' accommodation facilities; and, Students Engagement in income generating activities as survival mechanisms.

The study noted economic hardship and observed that living conditions for most privately sponsored higher education loan recipients was generally low in quality. The study findings further suggest a relationship between living conditions of privately sponsored higher education loan recipients and their socio-economic status. With regards to state of accommodation facilities, the study noted acute shortage of halls of residence within the universities that necessitated some students to live in horrible and deplorable dwelling units. The study further noted that some students engaged income generating ventures such as part-time employment and trade at the expense of their academic.

5.3 Conclusions

The following conclusions were made based on the findings of this study.

With reference to the first objective, the study concluded that the amount of higher education loan had no effect on enrollment into STEM or Economics/Business over Education/Arts/Social Sciences by privately sponsored undergraduate students in public universities in western Kenya.

Concerning the second objective, the study concluded that the amount of higher education loan has no effect on frequency of class attendance by privately sponsored undergraduate students in public universities in western Kenya.

Regarding the third objective, the study concluded that the living condition of a majority of privately sponsored undergraduate students is poor in spite of the fact that they are recipients of higher education loan.

5.4 Recommendations

The following recommendations were made based on the findings of this study.

1) Higher Education Loans Board should review their loan award criteria with the view of differentiating the loan amounts based on the cost of program of study. This will enable privately sponsored students to freely enroll into programme of choice, cost notwithstanding.

2) Higher Education Loans Board should enhance efficiency in loan processing with the view of disbursing the loan to privately sponsored students at the beginning of the first semester. This will enable privately sponsored students from low socio-economic status to freely enroll into programme of choice, cost notwithstanding.

3) Higher Education Loans Board should raise the minimum amounts of loan awarded to privately sponsored undergraduate students to match with the general cost of private higher education. This will enable the students to adequately participate in higher education without much personal sacrifices that would compromise class attendance among other academic activities.

4) Higher Education Loans Board loan should also cover living expenses just like in the case of the government sponsored students in the public universities. This will improve the living conditions of privately sponsored higher education loan recipients.

5) Through public-private partnership, universities should build more halls of residence to cater for the growing private demand for higher education. This will ensure that more privately sponsored students are accommodated in decent and learning conducive environments.

5. 5. Recommendations for Further Research

There are important issues that this study was unable to address due to its scope. In view of this, the following are suggested for further research.

1) A study on the effect of higher education loan amount on university student's academic achievements.

2) A study on the effect of higher education loan amount on retention of students in public universities.

3) A study on students and institutional characteristics on class attendance in public universities

4) A study on the effect of university students' living conditions on their academic achievements.

5) A similar study that compares participation of students between public and private universities.

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REFERENCES

Adair, K., & Swinton, O. H. (2012). Lab attendance and academic performance. *ISRN Educations*. http://dx.doi.org/10.5402/2012/364176

Aduda, D., (1996, September 14). Drug Trade Booms in Universities. *The Daily Nation*, p11.

Alicia, C. D. T., & Coury, T. (2006). The Effect of Loans on Persistence and Attainment of Community College Students. *Research in Higher Education* 47(1)

An Bord, A. (2005) *Requirements and Standards for Nurse Registration Education Programmes* (3rd ed), Dublin: An Bord Altranais

Arulampalam, W., Naylor, R. A., & Smith, J. (2012). Am I missing something? The effects of absence from class on student performance. *Economics of Education Review*, *31*, 363-375. http://dx.doi.org/10.1016/j.econedurev.2011.12.002

Atinkinson, G.B.J. (1983) *Economics of Education*. London: Hodder and Stoughton.

Atuahene, F. (2007). The Challenge of Financing Higher Education and the Role of Student Loans Scheme: An Analysis of the Student Loan Trust Fund (SLTF) in Ghana. *Higher Education*

Ayot, H. O & Briggs,H(1992)*Economics of Education.* Nairobi: Research Publications

Bandura, A., Barbaranelli, C., Caprara, G.,& Pastorelli, C. (2001). Self-efficacy Beliefs as an Aspirations and Carrier Trajectories. *Child Development*, 72: 187-206.

Baumgater, H., & Steiner, V., (2006). Does More Generous Student Aid Increase Enrolment Rates into Higher Education? Evaluating the German Student Aid Reform of 2001. *German Institute for Economic Research Discussion Paper* No. 563.

Bell, J., (1993). *Doing Your Research Project: A guide for first-time researchers in education and social sciences* (3rd ed). Buckingham: Open University Press

Blesss, C., & Highson-Smith, C., (2000). *Fundamentals of Social Research Methods*. Cape Town: Juta

Blundel, R., Dearden L., Costas, M., & Barbara, S. (1999). Human Capital Investment: The Returns from Education and Training to the Individual, Firm and the Economy. *The Journal of Applied Public Economics*. 20(1):1-23

Boit, J. (2012). Equity, Access and Social Demand Class Bias in Higher Education in Kenya. *International Journal of Current Research*. 4(3) 234-238.

Bryman, A. (2001).*Social Research Methods*. New York: Oxford University Press

Callender, C. & Jackson.,J. (2005). 'Does the Fear of Debt Deter Students from Higher Education?' *Journal of Social Policy* 34(4): 509-540

Chou, P. T.-M. & Kuo, Y.-H., 2012. *Examining factors relating to classroom attendance and performance.* [Online] Available at: http://dx.doi.org/10.5296/jse.v2i2.1564 [Accessed 15 09 2013].

Clark G., Gill N., Walker M., & Whittle R., (2011). Attendance and Performance: Correlations and Motives in Lecture-Based Modules. *Journal of Geography in Higher Education* .35(2): 199-215.

Consumer Financial Protection Bureau. (2012) Private Student Loans. *New York Times*

Crede, M., Roch, S. G., & Kieszczynka, U. M. (2010). Class attendance in college: A meta-analytic view of the relationship of class attendance with grades and student characteristics. *American Educational Research Association*. 80: 272-295. http://dx.doi.org/10.3102/0034654310362998

Dickson M., and Harmon, C., (2011). Economic Returns to Education: What we know, what we dint know and where we are going. *Economics of Education Review* 30(6): 1118-1122

Dobkin, C., Gil, R., & Marion, J. M. (2010). Skipping class in college and exam performance: Evidence from aregression discontinuity classroom experiment. *Economics of Education Review*, *29*, 566-575.http://dx.doi.org/10.1016/j.econedurev.2009.09.004

Espejo, Francisco (2009). Home-grown School Feeding A Framework to Link School Feeding with Local Agricultural Production. Rome: World Food Programme,.

Friedman, P., Rodriguez, F and McComb, J (2001). Why students do and do not attend classes: Myths and realities. *College Teaching*. 49(4), 124–133

Gall, M. D, Borg, W.R, & Gall, J. (1996). Educational Research: An Introduction (6th Ed). White Plains, New York: Longman Publishers.

Gravenir,. F.Q., Wangenge, G.O., Njihia, M. (2005, October). *Rethinking the Financing of Kenya's Higher Education: Options for Enhancing Equity, Access, and Quality*. Paper Prepared for the Regional Conference on the Financing of Higher Education, Organised by the Higher Education Loans Board, Nairobi: 27th-28th October, 2005.

Gravenir, F.Q, Ayodo, T.M.O and Gatimu,K. (1990). *Economic of Education*. Nairobi :University of Nairobi Press.

Greene, W. H., (2012). Econometric Analysis (7th ed.). Boston: Pearson Education. : 803–806. ISBN 978-0-273-75356-8

Landin, M., & Perez, J. (2015). Class attendance and academic achievement of pharmacy students in a European University. *Currents in Pharmacy Teaching and Learning*, *7*, 78-83.http://dx.doi.org/10.1016/j.cptl.2014.09.013

Lynch, K. & O'Riordan, C. (1998). Inequality in Higher Education: A Study of Class Barriers. *British Journal of Sociology of Education* 19(4): 445-478.

Healy, M., Carpenter, A. & K. Lynch (1999). *Non-completion in Higher Education: A Study of First Year Students in Three Institutes of Technology*. Carlow, Dundalk, Tralee: Institutes of Technology.

Heller, D. E. (2008). The Impact of Student Loans on College Access. Chapter 3. In S. Baum, M. Mcpherson, & P. Steele (Eds.), *The Effectiveness of Student aid Policies: What the research tells us*. Washington, DC: College Board.

Holdforth, J.C. (2007) Student non-attendance in higher education. A phenomenon of student apathy or poor pedagogy. Level3 – June 2007 – Issue 5

Hurtado S, L. T., & Perorazio, T. (2003). *The Transition to College from Low-Income Students: The Impact of Gates Millennium Scholars Program*. Centre for the study of higher Education and Post Secondary Education

Hutchings, M. &. Archer, L. (2001). Higher than Einstein: constructions of going to university among working class non-participants. *Research papers in Education* 16(1): 69-91.

Grabe, M. (2005) 'Voluntary use of online lecture notes: correlates of note use and note use as an alternative to class attendance', *Computers and Education* 44: 409–421.

Grodsky, E. & M.T. Jones (2007). 'Real and imagined barriers to college entry: Perceptions of cost'. *Social Science Research* 36: 745–766.

Government of the Republic of Kenya (2003). Ministry of Education, Science, and Technology. Report of the Task Force on Implementation of Free Primary Education. Nairobi: Government Printer

Government of the Republic of Kenya. (1995). *The Higher Education Loans Board (HELB) Act 1995* (Act No. 3 of 1995. Kenya: Government of Kenya.

Government of the Republic of Kenya, (1988). Report of the Presidential working Paper on Education and manpower for the Next Decade and Beyond (Kamunge report). Nairobi: Jomo Kenyatta Foundation

Government of the Republic of Kenya (1964). High Level Manpower Requirements and Resources in Kenya, 1964–1970. Nairobi: Ministry of Planning and National Development.

Government of the Republic of Kenya (1965a). African Socialism and its Application to Planning in Kenya. Report of the Kenya Education Commission. 1965 Sessional Paper No. 10. Nairobi: Government Printer

Gump, S.E. (2006). Guess who's (not) coming to class: Students Attitudes as Indicators of Attendance. *Educational Studies* 32 (1): 39–46.

Hughes, S.J. (2005) 'Student attendance during college-based lectures: a pilot study', *Nursing Standard.* 19 (47): 41–49.

Hunter, S. & Tetley, J. (1999, July). *Lectures. Why don't students attend? Why do students attend?* Proceedings of HERDSA Annual International Conference held in Melbourne 12–15 July 1999, Higher Education Research and Development Society of Australia, Milperra, NSW.

Hurtado S, L. T., & Perorazio, T. (2003). *The Transition to College from Low-Income Students: The Impact of Gates Millennium Scholars Program*. Centre for the study of higher Education and Post Secondary Education

Kasozi A.B (2009). *Access and Equity to Higher Education in Uganda: Whose Children Attend University and are Paid for by the State?* Paper Presented in a Public Lecture on Accesss and Equity to Higher Education at the National Bureau of Statistics, Kamplala

Kathuri, J. and Pals, D. (1993). *Introduction to Research*. Egerton University, Kenya: Education Books Series.

Kerlinger, F. N. & Howard, B. L. (2000). *Foundations of Behavioral Research* (4th. Ed.). Toronto, Canada: Harcourt College Publishers.

Kerka, S. (2000). Career *Development, Gender, Race and Class*. Eric Clearing house on Adult Careed and Vocational Education Columbus. ED 421641.

Longhurst, R.J. (1999). Why aren't they here? Student absenteeism in a further education college. *Journal of Further and Higher Education* 23 (1): 61–80.

Marilyn, K. S. & Jim, G. (2013). Ex post facto research design. www.dissertatiorecipies.com

Maslow, A. (1954), Motivation and Personality, New York, Harper and Row.

McQuaid, R. and Bond, S. (2003). Gender Stereotyping of Career Choice. Cited from

http://www.careers-scotland.org.uk

McCarey, M., Barr, T. and Rattray, J. (2006) 'Predictors of academic performance in a cohort of pre-registration nursing students', *Nurse Education Today* 27 (4): 357–364.

McGuire, S. (2003) Teaching students how to learn chemistry. *Strategies for Success,* 4-5

Moore, R. (2005) What factors predict success of developmental education students in an introductory biology course. *Research & Teaching in Developmental Education*. 21:35-42

Moore, R. (2003a). Does improving developmental education students' understanding the importance of class attendance improve students' class attendance; academic performance? *Research & Teaching in Developmental Education.* 20: 24-39.

Moore, R. (2003b) Helping students succeed in introductory biology classes: Does improving students' attendance also improve their grades? *Bioscience*. 29:17-25.

Moore, R. (2003c) Students' choices in developmental education: Is it really important to attend class? *Research & Teaching in Developmental Education,* 20: 42-52.

.

Menon, M. E,. (1998). Factors influencing Demand for Higher Education. *Higher Education*. 35(3):251-266.

Mbirithi, D. (2013). *Management Challenges Facing Kenya's Public Universities and Implications for the Quality of Education*. (Unpublished doctoral dissertation). Kenyatta University; Nairobi, Kenya.

Moore, R., Jensen, M., Hatch, J., Duranczyk, I., Staats, S., & Koch, L. (2003). Showing up: The importance of class attendance for academic success in introductory science courses. *American Biology Teacher*. 65: 325–329

Mwinzi, D. (2002, April). *The impact of cost sharing on the living conditions of students in Kenyan Public Universities: The case of Nairobi and Moi Universities*. A paper presented at the 28thAnnual International Symposium sponsored by the Council for the Development of Social Science Research in Africa (CODESRIA), Dakar and Centres for African Studies. University of Illinois, in Dakar, Senegal. 25thto 27th April, 2001

Nafukho, F.M. (1996), Structural Adjustment Programmes and the Emergence of Entrepreneurial Activities among Moi University Students. *Journal of Eastern Africa Research and Development.* 26:79-90.

Nicholl, H. & Timmins, F. (2005) 'Programme-related stressors among part-time undergraduate nursing students', *Journal of Advanced Nursing* 50 (1): 93–100.

Nyakunga, R.Z (2011) Cost Sharing and Academic Performance. A Case of Mzumbe University: Morogoro Main Campus, Tanzania. (Unpublished master's thesis). University of OSLO, Norway.

Nyamapfene, A. (2010). Does class attendance still matter? *Engineering Education*. 5: 64-74.

Manchester Metropolitan University: Careers & Employability Service, 2012. *What Is Employability?*. [Online] Available at: What Is Employability? [Accessed 14 03 2014].

Mugenda, M. & Mugenda, G. (1999). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: Act Press

Munavu R. M , Ogutu D. M, & Wasanga P.M (2008). Sustainable Articulation Pathways and Linkages between Upper Secondary and Higher Education. In *Africa Association for the Development of Education in Africa* (ADEA) International Institute for Educational Planning, 7-9

Murphy, K.M, Shleifer, R.W & Vishny, R.W (1991). The Allocation of Talent: Implications for Growth. *The Quarterly Journal of Economics*. 1(1) 503-530

Musera, G. (2014). *Socio-Economic Status and Equity in Higher Education Loan Disbursement to Undergraduate Self-Sponsored Students in Public Universities in Kenya*. (Unpublished doctoral dissertation) Masinde Muliro University of Science and Technology, Kakamega, Kenya.

Muthui,. K .J. (2013). *Factors Influencing Demand for Higher Education Opportunities by Primary School Teachers in Kitui County* (Unpublished masters thesis) University of Nairobi, Nairobi, Kenya.

Mwinzi, D. (2002, April). The impact of cost sharing on the living conditions of students in Kenyan Public Universities: The case of Nairobi and Moi Universities. A paper presented at the 28thAnnual International Symposium sponsored by the Council for the Development of Social Science Research in Africa (CODESRIA), Dakar and Centres for African Studies. University of Illinois, in Dakar, Senegal. 25thto 27th April, 2001

Mwangi, M. (2000, June 12). Drugs Rampant at Varsity. *The Daily Nation*. P 13.

National Audit Office (2002) *Widening participation in higher education in England.* London: The Stationery Office

Nafukho, F.M. (1996). Structural Adjustment Programmes and the Emergence of Entrepreneurial Activities among Moi University Students. *Journal of Eastern Africa Research and Development*. 26:79-90.

Nyahende., V., (2013). The Success of Student Loans in Financing Higher Education in Tanzania. *Higher Education Studies* 3(3) 47-61

Nganga Gilbert (2012). New University Colleges Increase Admissions Capacity, *University World News*. Issue No. 220.

Odebero Stephen (2008). Equity in Access to University Education in Kenya through HELB Loans in relation to Demand, Supply and Effectiveness in Loan Recovery (Unpublished doctoral dessertaion). Egerton University, Nakuru, Kenya

Odebero. S, Bosire. J, Sang.A, Ngala, F & Ngware M (2007). Equity in the Distribition of HELB Loan in Kenya in relation to Student Characteristics: An Empirical Analysis. *Educational Research and Review* 2(8) 209-219

Okae. A. S. (2012). Student Loans as an alternative to funding higher education in Ghana. An analysis interdisciplinary. *Journal of Contemporary Research in Business* 4 (6): 123-141.

O'Leary Nigel & Sloane Peter (2005). Returns to University Education. Economic Review. 193(1):235-246

Ogenga, P.A and Achoka, J.S.K. (2008). Provision of Basic Education in Kenya: Implications for the Poor. Policy of Education in the Modern World. *Problems of Education in the 21st Century*. 8 (1) 46-53

Onen, D, Ajuoba, B.D, & Oceng, O.D (2015). Managing the Student Loan Schemes in Africa: Lessons for Younger Loan Schemes. *International Journal of Education and Research* 3(12) 271-284.

Ooro, S., (2009). The Quest for inclusive Higher Education in Kenya: A Vivisection of Concerns, Policies and Reform Initiatives, MAHE INCHERE-Kassek, Germany

Otieno W. & Levy, D.C (2007). *Public Strikes, Private Boons? Inter-sectional Dynamics Illustrated by Kenyan Case.* Program for Research on Private Higher Education (PROPHE). Department of Educational Leadership and Policy, State University of New York. Working Paper No. 9

Otieno, W,. (2004). Student Loans in Kenya: Past Experiences, Current Hurdles, and Opportunities for the Future. *JHEA/RESA* 2(2): 75-99

Oppenheim, A. N. (1996). *Questionnaire Design and attitude measurement*. London: Heinemann

Oso, W. & Onen, D. (2005). *A General Guide to Writing Research Proposal and Report*. Kisumu, Kenya: Options Printers and Publishers

Owino Elizabeth (2003). *Financing Higher Education in Kenya: The Case of Student Loans.* (Unpublished master's thesis), Addis Ababa University, Addis Ababa, Ethiopia

Ozga, J. and L. Sukhnandan (1998). 'Undergraduate Non-Completion: Developing an Explanatory Model'. *Higher Education Quarterly* 52(3): 316-333.

Paisey, C. & Paisey, N. J., 2004. Student attendance in an accounting module - reasons for non-attendance and the effect on academic performance at a Scottish University. *Accounting Education,* pp. 39-53.

Pillay, P. (2010). *A report on Tertiary education finance in Namibia. Millennium Challenge Account (MCA).* Windhock: Namibia.

Psachoropoulos, G & Woodhall .(1985). *Education and Development. An Analysis of Investment Choices.* Washington DC: World Bank

Robertson, F., Sloan, J. & Bardsley, N. (1990). *The impact of the higher education contribution scheme (HECS). Canberra*: Department of Employment, Education, Training and Youth Affairs, Evaluations and Investigations Program.

Rodgers, J.R. (2002) 'Encouraging tutorial attendance at university did not improve performance', *Australian Economic Papers*, September: 255–266.

Romer, D. (1993). Do students go to class? Should they? *The Journal of Economic Perspectives*, 7: 167-174. http://dx.doi.org/10.1257/jep.7.3.167

Rothschild, M & White, L.J. (2008). The University in the Marketplace: Some Insights and some Puzzles. In *Studies of Supply and Demand in Higher Education* Editors: Charles T Clotfelter and Michael Rothschild

Rugambuka, I. B (2008) *The Performance of Higher Education Students' Loan Scheme in Tanzania. The Stakeholders Views*. (Unpublished Masters Thesis). University of OSLO, Norway

Salmi, J., (2010). Student *Loans in an International Perspective*: The World Bank Experience. World Bank

Schemo, J.D (2007, June 10). Private Loans Deepen a Crisis in Student Debt. *New York Times. www.nytimes.com*

Sharma, M.D., Mendez, A. and O'Byrne, J.W. (2005) 'The relationship between attendance in student-centred physics tutorials and performance in university examinations', *International Journal of Science Education* 27 (11): 1375–1389.

Daniel N. Sifuna (2010) Some reflections on the expansion and quality of higher education in public universities in Kenya, Research in Post-Compulsory Education, 15:4, 415-425, DOI: 10.1080/13596748.2010.526803

Kilemi, M., N. Njuguna, C.K. Ngome, V.K. Wawire, D. Wesonga & G. Ouma. (2007). *Public and private universities in Kenya: New challenges, issues and achievements.* Oxford and Nairobi: James Currey and East African Educational Publishers.

Soo, K. T., & Elliot, C., (2009). Does Price Matter? Overseas Students in UK Higher Education. Economics of Education Review 29(4): 553-565

Soria, K. M., Weiner, B., & Lu, E. C. (2014). Financial Decisions among Undergraduate Students from Low-Income and Working-Class Social Class Backgrounds. *Journal of Student Financial Aid*: 44(1). http://publications.nasfaa.org/jsfa/vol44/iss1/2

Standa, E. (2000), Report of the Vice Chancellors' Committee on the Causes of Disturbance Riots in Public Universities Chaired by E. Standa, Jomo Kenyatta Foundation, Nairobi, and Heinemann.

Thatcher, A., Fridjhon, P., & Cockcroft, K. (2007). The relationship between lecture attendance and academic performance in an undergraduate psychology class. *South African Journal of Psychology*, 37:656-660. http://dx.doi.org/10.1177/008124630703700316

Timmins, F. and Kaliszer, M. (2002) 'Attitudes to absenteeism among diploma nursing students in Ireland – an exploratory descriptive survey', *Nurse Education Today* 22 (7): 578–588.

Timmins, F. (2002) 'Absenteeism among nursing students – fact or fiction?' *Journal of Nursing Management* 10 (5): 251–264.

Wanzala, O. (2016, February 5). HELB Disburses Funds to 47,000 Students. *Daily Nation.* www.nation.co.ke

Watson, J. (2001). *How to determine a sample size.* University Park, PA: Penn State Cooperative Extension.

World Bank (2010) Financing higher education in Africa. Direction in developing No. 54441. *Human Development.* World Bank: Washington D. C.

Ziderman A. (2005). Policy Options for Student Loan Schemes: Lessons from Five Asian Case Studies. UNESCO

APPENDICES

APPENDIX 1: Questionnaire for Fourth Year Privately Sponsored Higher Education Loan Recipients in Public Universities in Kenya

Introduction

You have been selected to participate in a research entitled, "Higher Education Loan Award and Participation of Privately Sponsored Undergraduate Students in Public Universities in western Kenya". Please respond accordingly as guided by the questions. All the information provided will remain confidential and shall only be used for the purpose of this research.

Instruction

Kindly tick or fill in appropriately.

1.1 What is the name of your university?

University of Eldoret ☐
Jaramogi Oginga Odinga University of Science and Technology ☐
Masinde Muliro University of Science and Technology ☐

1.2 What is your gender?

Male ☐ Female ☐

2.1 Is HELB your main source of financing higher education?

Yes ☐ No ☐

2.2 Indicate in figures in Ksh. the total amount of higher education loan you were awarded by HELB in the following academic years

2012/2013:_____
2013/2014:_____
2014/2015:_____
2015/2016:_____

3.1 What is the name of the degree program you are undertaking (eg, Bachelor of Commerce)_____

3.2 Indicate the total amount of tuition fees you pay for your programme of study annually_____

3.3 Is the programme of study you are undertaking your preferred choice?

Yes ☐ No ☐

3.4 Indicate the mean grade you attained at KCSE

A ☐ A- ☐ B + ☐ B ☐

B- ☐ C+ ☐ C ☐ C- ☐

4.1 Indicate your level of class attendance at the university

Never missed classes ☐
Misses between 1 and 2 classes on weekly basis ☐
Misses between 3 and 4 classes on weekly basis ☐
Misses more than 4 classes on weekly basis ☐

4.2 Have you ever deferred studies on financial grounds?

YES ☐ NO ☐

4.3 If yes, indicate the number of times have you deferred studies-

_____

4.4 Have you ever been barred by the university from sitting for examination on account of non completion of fees payment?

YES ☐ NO ☐

4.5 If yes, indicate the number of times you have been barred by the university from sitting for examination on account of non completion of fees payment_____

5.1 Kindly indicate by ticking YES/NO on the following items related to your living condition while studying at the university.

S/N	Living conditions	Yes	No
1	I stay in my own house/room while studying at the university		
2	I stay with more than two other students in the same room		
3	I stay in a house/room with adequate reading space		
4	I stay in a house/room with a reading desk and chair		
5	My accommodation facility located in a conducive learning environment		
6	My accommodation facility is located hygienic environment		
7	My accommodation facility is well ventilated		
8	My accommodation facility offers recreational services		
9	I can afford three meals on daily basis		
10	I can afford balanced diet on daily basis		
11	I have adequate financial resources to cater for my library needs		

5.2 Have you ever been engaged in any income generating activity (work-study, small scale business, part-time employment) as a survival mechanism at the university?

YES ☐ NO ☐

5.3 If yes, indicate the length of time (in hours) you spend on the income generating activity
daily_____

6.1 Kindly indicate by ticking YES/NO on the following assets ownership back at home

S/N	Household Asset Ownership	Yes	No
1	The family's main house has more than TWO bedrooms		
2	The family's main house is self contained (toilet inside)		
3	The floor of the family's main house is made of tiles		
4	The floor of the family's house is cemented		
5	The wall of the family's main house is made of stones or bricks		
6	The roof of the family's main house is made of tiles		
7	The roof of the family's house is made of iron sheets		
8	The family uses electricity as main source of light		
9	The family mainly uses Liquefied Petroleum Gas (LPG) for cooking		
10	The family mainly uses Electricity for cooking		
11	The family mainly uses charcoal or firewood for cooking		
12	The family uses piped water as main source of water		
13	The family owns a car		
14	The family owns a microwave		
15	The family owns a refrigerator		
16	The family owns a washing machine		
17	The family owns a television set		
18	The family owns a sofa set		
19	The family owns a radio		
20	The family's homestead gate is managed by a security firm		

THE END
THANK YOU

APPENDIX 2: Interview Guide for Dean of Students in Public Universities

Preliminaries:

1.1 Introduction: Interviewer introduces himself and states the purpose of the interview.

1.2 Assure the respondent of confidentiality of the information provided.

1.3 Explanation of the process: ask for consent to tape/record the session. If consent isn't given, then settle for note taking.

Interview Items/Questions

2.1 What is your opinion on the adequacy of the amount of higher education loan awarded to privately sponsored undergraduate students in your university?

2.2 Does the amount of higher education loan affect the choice of programme of study by privately sponsored undergraduate students in your university? If yes, how?

Probe for enrolment into

1. STEM
2. Education/Arts based disciplines
3. Economics/Commerce disciplines

2.3 What is your opinion on the level of class attendance by privately sponsored undergraduate students in your university?

2.4 Does the amount of higher education affect the frequency of class attendance by privately sponsored undergraduate students in your university? If yes, how?

2.5 Does your university provide accommodation to privately sponsored students?

2.6 Briefly describe the living conditions of privately sponsored undergraduate higher education loan recipients in your university.

Probe for

a) State of their accommodation facilities (location, comfort, convenience, security, space, safety, hygiene, ventilation, cost, recreational facilities)
b) Adequacy of financial resources for catering needs (number of meals per day, Can they afford balanced diet?)
c) Adequacy of financial resources for library and stationery needs
d) Adequacy of financial resources for clothing and personal effects

2.7 Are there higher education loan recipients engaging in income generating activities as a survival mechanism?

Probe for

a) The range of activities involved in
b) Any outstanding cases
c) Amount of time consumed in the activities on daily basis
d) The effect of such ventures on the students' academics

2.8 In conclusion, what recommendations would you give to improve the current situation?

2.9 Do you have any other comment?

Closing session

Thank the interviewee for providing data for the research

APPENDIX 3: Outputs for Objective 1, 2 and 3

Table 5.1: Correlation matrix between the outcome variable and its Continuous Explanatory Variables for Objective 1

Variable		a31	a22	
a31		1		
a22	a	-0.044	1	
	b	0.355		
a34	a	-0.332	0.112	1
	b	p<.001	0.017	

Table 5.2: Correlation matrix between the outcome variable (a41= Student never misses lectures) and its explanatory variable for Objective 2

Variable		a31	a22
a41		1	
a22	a	0.030	1
	b	0.524	

Note: a=Pearson correlation coefficient; b=p-values (α=0.05); Pair-wise correlation: ≤0.35 = Weak correlation; 0.36-0.67 = Moderate correlation; 0.68-0.89=Strong correlation; ≥0.90 = Very strong correlation; Adapted from "Interpretation of correlation coefficient, " by R. Taylor, 1990, Journal of Diagnostic Medical Sonography, 6(1), p. 37

Table 5.3: Chi-square: Association between the Outcome Variable and Statistically Significant Explanatory Variables Objective 1

Association between	χ^2	Df	*p*	Cramer's V
a31= Student's programme of study verses a111 1=UoE 0=Otherwise	57.3. 7	2	p<.001	0.3551
a31= Student's programme of study verses a113 1=MMUST 0=Otherwise	50.79	2	p<.001	0.3441
a31= Student's programme of study verses mcases31= Low SES	27.17	2	p<.001	0.2444
a31= Student's programme of study verses mcases33= High SES	35.61	2	p<.001	0.2798
a31= Student's programme of study verses a12= Male student=1	6.74	2	p=0.034	0.1217
a31= Student's programme of study verses a21= Yes, HELB is main financier=1	45.77	2	p<.001	0.3172
a31= Student's programme of study verses a41= Student never misses lectures=1	11.77	2	p=0.003	0.1608
a31= Student's programme of study verses a462= 1=Primary 0=Otherwise	10.21	2	p=0.006	0.1498
a31= Student's programme of study verses a463= 1=Secondary 0=Otherwise	8.54	2	p=0.014	0.1370
a31= Student's programme of study verses a466= 1=Postgraduate 0=Otherwise	9.05	2	p=0.011	0.1410

Note. df=degrees of freedom; n=cases with no missing data for the variables; Cramer's V: 0-.19=weak association; .20-.49=moderate association; >.49=strong association; UoE=University of Eldoret; JOOUST=Jaramogi Oginga Odinga University of Science and Technology; MMUST=Masinde Muliro University of Science and Technology; HELB=Higher Education Loans Board

Table 5.4: Chi-square: Association Between the Outcome (a41) and Statistically Significant Explanatory Variables (α=0.05), Objective 2

Association between	χ^2	df	*P*	Cramer's V
a41= Student never misses lectures=1 verses a112 1=JOOUST 0=Otherwise	12.08	1	0.001	0.1630
a41= Student never misses lectures=1 verses a113 1=MMUST 0=Otherwise	7.33	1	0.007	-0.1269
a41= Student never misses lectures=1 verses mcases32= Middle SES	4.10	1	0.043	0.0949
a41= Student never misses lectures=1 verses a21= Yes, HELB is main financier=1	6.38	1	0.012	0.1184
a41= Student never misses lectures=1 verses a311 1=STEM 0=Otherwise	11.18	1	0.001	0.1568
a41= Student never misses lectures=1 verses a312 1=ED A&SS 0=Otherwise	7.04	1	0.008	-0.1244
a41= Student never misses lectures=1 verses a461= a461= 1=Did not attend school	4.06	1	0.044	-0.0945
a41= Student never misses lectures=1 verses a463= 1=Secondary 0=Otherwise	9.78	1	0.002	-0.1466
a41= Student never misses lectures=1 verses a466= 1=Postgraduate 0=Otherwise	6.61	1	0.010	0.1205
a41= Student never misses lectures=1 verses a52= Student has ever engaged in IGAs	69.41	1	<.001	-0.3906

Note. df=degrees of freedom; n=cases with no missing data for the variables; Cramer's V: 0-.19=weak association; .20-.49=moderate association; >.49=strong association; UoE=University of Eldoret; JOOUST=Jaramogi Oginga Odinga University of Science and Technology; MMUST=Masinde Muliro University of Science and Technology; HELB=Higher Education Loans Board

Table 5.5: Chi-square: Association between the Outcome (a41) and Statistically Significant Explanatory Variables (α=0.05), Objective 3

Association between	χ^2	df	*p*	Cramer's V
mcases3= Tertiles based on the MCA verses a511= Student stays in own house/room=1	2.42	2	0.299	0.0729
mcases3= Tertiles based on the MCA verses a512= Student stays >2 others in room=1	4.1	2	0.129	0.0950
mcases3= Tertiles based on the MCA verses a513= Student's room has adequate reading space=1	15.74	2	<.001	0.1860
mcases3= Tertiles based on the MCA verses a514= Student's room has reading desk & chair=1	16.52	2	<.001	0.1906
mcases3= Tertiles based on the MCA verses a515= Student's room is in conducive environment=1	1.64	2	0.440	0.0600
mcases3= Tertiles based on the MCA verses a516= Student's room is in hygienic environment=1	1.82	2	0.402	0.0633
mcases3= Tertiles based on the MCA verses a517= Student's room is well ventilated=1	5.17	2	0.075	0.1066
mcases3= Tertiles based on the MCA verses a519= Student's affords 3 meals daily=1	23.48	2	<.001	0.2272
mcases3= Tertiles based on the MCA verses a5110= Student's affords balanced diet daily=1	45.14	2	<.001	0.3150
mcases3= Tertiles based on the MCA verses a5111= Student's affords library needs=1	58.75	2	<.001	0.3593

Note. df=degrees of freedom; n=cases with no missing data for the variables; Cramer's V: 0-.19=weak association; .20-.49=moderate association; >.49=strong association;

Table 5.6: Post-estimation of the Average Marginal Effect over the Estimation Sample Using the Delta Method, Objective 1

1=Science Technology Engineering Medicine Vs Education, Arts and Social Sciences						
Variable	dy/dx	Std. Err.	Z	P>z	[95% Conf.	Interval]
a22	0.00	0.00	0.59	0.555	0.00	0.00
mcases31	0.05	0.03	1.43	0.154	-0.02	0.11
mcases33	-0.10	0.05	-1.90	0.058	-0.20	0.00
a12	0.04	0.03	1.16	0.247	-0.02	0.10
a21	0.14	0.03	4.79	<.001	0.08	0.20
a34	0.09	0.01	9.18	<.001	0.07	0.11
a41	0.09	0.03	3.10	0.002	0.03	0.15
a462	-0.23	0.10	-2.21	0.027	-0.44	-0.03
a463	-0.04	0.04	-0.86	0.392	-0.12	0.05
a466	0.08	0.05	1.44	0.150	-0.03	0.18
a111	0.02	0.06	0.41	0.681	-0.09	0.13
a113	0.09	0.05	1.59	0.113	-0.02	0.19
3=Economics and Business Vs Education, Arts and Social Sciences						
a22	0.00	0.00	1.07	0.283	0.00	0.00
mcases31	0.03	0.05	0.60	0.549	-0.07	0.12
mcases33	0.18	0.05	3.53	<.001	0.08	0.28
a12	0.05	0.04	1.26	0.206	-0.03	0.12
a21	-0.07	0.04	-1.69	0.091	-0.14	0.01
a34	-0.02	0.01	-1.17	0.242	-0.04	0.01
a41	0.01	0.04	0.31	0.757	-0.06	0.08
a462	-0.03	0.07	-0.47	0.639	-0.16	0.10
a463	-0.06	0.05	-1.28	0.200	-0.16	0.03
a466	-0.09	0.10	-0.98	0.329	-0.29	0.10
a111	0.13	0.06	2.30	0.022	0.02	0.24
a113	-0.14	0.06	-2.50	0.012	-0.25	-0.03

Table 5.7: Post-estimation Likelihood Ratio Tests

a41	Df	Chi2	P>Chi2	-2*log ll	Res. Df	AIC
Original Model				505.86	442	531.86
a22	1	0.09	0.760	505.96	441	529.96
mcases32	1	6.40	0.011	512.26	441	536.26
a21	1	4.04	0.045	509.9	441	533.9
a311	1	1.00	0.318	506.86	441	530.86
a312	1	2.66	0.103	508.52	441	532.52
a461	1	6.06	0.014	511.92	441	535.92
a463	1	3.28	0.070	509.15	441	533.15
a466	1	1.63	0.201	507.5	441	531.5
a43	1	0.04	0.833	505.91	441	529.91
a52	1	73.98	0.000	579.85	441	603.85
a112	1	6.95	0.008	512.81	441	536.81
a113	1	0.01	0.929	505.87	441	529.87

Note. Terms dropped one at a time in turn; Df=Degrees of freedom; ll=likelihood; AIC

APPENDIX 4: Research Permit

THIS IS TO CETIFY THAT:
OGENGA PAUL AKUMU
Of MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNNOLOGY,
Has been permitted to conduct research in *selected counties*

on the topic: *HIGHER EDUCATION LOAN AWARD AND PARTICIPATION OF PRIVATELY SPONSORED UNDERGRADUATE STUDENTS IN PUBLIC UNIVERSITIES IN WESTERN KENYA.*

for the period ending :
5th May, 2017

Permit No : NACOSTI/P/16/62260/10900
Date Of Issue : 9th May, 2016
Fee Received : Kshs. 2000

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 9050

CONDITIONS: see back page