



Strathmore
UNIVERSITY

Strathmore University
SU+ @ Strathmore
University Library

Electronic Theses and Dissertations

2017

Individual home and university environment factors as correlates of student attrition in private universities in Nairobi County, Kenya

Mary Mukami Njoroge
School of Humanities and Social Sciences (SHSS)
Strathmore University

Follow this and additional works at <https://su-plus.strathmore.edu/handle/11071/5825>

Recommended Citation

Njoroge, M. M. (2017). *Individual home and university environment factors as correlates of student attrition in private universities in Nairobi county, Kenya* (Thesis). Strathmore University. Retrieved from <http://su-plus.strathmore.edu/handle/11071/5825>

**Individual, Home and University Environment Factors as Correlates
of Student Attrition in Private Universities in Nairobi County, Kenya**

Mary Mukami Njoroge

Doctor of Philosophy

2017

**Individual, Home and University Environment Factors as Correlates
of Student Attrition in Private Universities in Nairobi County, Kenya**

Mary Mukami Njoroge

**Submitted in total fulfillment of the requirements for the Degree of
Doctor of Philosophy in Educational Psychology at Strathmore
University**

**School of Humanities and Social Sciences
Strathmore University
Nairobi, Kenya**

June, 2017

This thesis is available for Library use through open access on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

© No part of this thesis may be reproduced without the permission of the author and Strathmore University.



Mary Mukami Njoroge

June 2017

Approval

The thesis of Mary Mukami Njoroge was reviewed and approved by the following:

Prof. Christine Gichure

Dean, School of Humanities and Social Sciences

Strathmore University

Dr. Tabitha Wang'eri

Senior Lecturer

Educational Psychology Department

Kenyatta University

Prof. Robert Mudida

Associate Professor

Strathmore Business School

Prof. Ruth Kiraka

Dean, School of Graduate Studies

Strathmore University

ABSTRACT

Completion of university education within prescribed time limits has been a concern of universities for decades. As governments emphasize that institutions of higher learning churn out an educated work force, relevant information is required by the universities to curb student attrition.

The purpose of this study was to investigate the relationship between selected individual, home and university environmental factors and students' attrition in private universities in Nairobi County, Kenya and further establish current student attrition levels in private universities in Nairobi.

The target population was 24,901 second year students in private universities. Stratified sampling was used to select the 387 students for the study. In addition purposive sampling was used to select nine faculty members. Sixty (60) university dropouts were identified through the snowballing method. Data was collected using self-administered questionnaires for the second year students and interview guide for university staff. Data for sixty university dropouts was collected telephonically. Structural Equation Modeling (SEM) and Pearson Product Moment Correlation Coefficient were used to test the relationships between the independent variables (individual, home and university environmental factors) and the dependent variable, student attrition.

Initially, preliminary and descriptive statistical analyses were performed. This included analysis of demographic data and analysis of examination retakes, semester deferments and student drop out. Data study was analyzed using maximum likelihood estimates (MLE). The findings established current student attrition levels of thirty seven per cent (37%). From the results student attrition was found to be correlated to peer support, parental support and student faculty interaction.

The study recommends the need for interventions, such as establishment of constant student lecturer interactions and provision of adequate facilities to create a conducive environment for study. Also, strategies that will encourage peer interaction should be developed as well as adequate financial support to students by parents and government actors. All these will enhance peer support and increased emphasis on faculty interaction through availing time and space by university management thereby reducing student attrition.

Table of Contents

DECLARATION.....	ii
ABSTRACT	iii
LIST OF FIGURES.....	x
LIST OF TABLES.....	xi
ABBREVIATIONS AND ACRONYMS.....	xii
DEFINITION OF TERMS.....	xv
CHAPTER ONE - INTRODUCTION.....	1
1.1. Introduction	1
1.2. Background to the Study.....	1
1.3. Statement of the Problem	12
1.4. Purpose of the Study	14
1.5. Objectives of the study.....	14
1.6. Research Hypotheses and Question.....	14
1.7. Significance of the Study	15
1.8. Scope of the Study	17
1.8.1 Geographical Scope.....	17
1.8.2 Time Scope	17
1.8.3 Content Scope	17
1.9. Assumptions of the Study.....	18

1.10. Summary of Chapter One.....	18
CHAPTER TWO - REVIEW OF LITERATURE.....	19
2.1 Introduction	19
2.2 Theoretical Perspective	19
2.2.1 Bean and Eaton’s psychological theory of retention.....	24
2.3 Individual factors leading to student attrition.....	28
2.3.1 Gender, age as individual factors for student attrition.....	31
2.3.2 Self-Efficacy as an Individual Factor for Student Attrition.....	33
2.3.3 Peer Support as an Individual factor for Student Attrition	35
2.3.4 Academic Performance as an Individual factor of Student Attrition	37
2.4 Home Factors and Student Attrition	38
2.4.1 Relationship between parental education levels and student attrition.....	39
2.4.2 Relationship between students’ perception of parental support and attrition...	43
2.4.3 Students’ perception of financial support and student attrition	46
2.5 University Environmental Factors and Student Attrition.....	47
2.5.1 Student faculty interaction and student attrition	48
2.5.2 Adequacy of facilities and attrition	52
2.6 Summary of Reviewed Literature and Research Gap.....	54
2.7 Conceptual framework	55

CHAPTER THREE - RESEARCH METHODOLOGY	58
3.1 Introduction	58
3.2 Research Philosophy	58
3.3 Research Methodology and Design	61
3.5 Population of the Study	65
3.6 Sample	67
3.6.1 Sample size determination	67
3.7 Description of the Research Instruments	69
3.8 Validity and Reliability of the Research Instruments	70
3.8.1 Instrument reliability	70
3.8.2 Instrument validity.....	72
3.9 Data Collection Procedure.....	75
3.10 Data Processing and Analysis.....	76
3.11 Structural Equation Models.....	77
3.12 Structural Equation Model Specification	78
3.13 Ethical Issues	83
CHAPTER FOUR - PRESENTATION OF FINDINGS.....	85
4.1 Introduction	85
4.2 Response rate	85

4.3	Demographic Empirical Results.....	87
4.3.1	Gender distribution.....	88
4.3.2	Age distribution.....	89
4.4	Structural Equation Modeling Analysis.....	90
4.4.1	Normality test.....	91
4.4.2	Confirmatory factor analysis test.....	93
4.4.3	Structural equation model fit test.....	100
4.5	Relationship between latent exogenous variables and latent endogenous variables	103
4.6	Findings on effect of Individuals factors on levels of student attrition.....	104
4.6.1	Age.....	106
4.6.2	Gender.....	107
4.6.3	Self-efficacy.....	108
4.6.4	Ability to cope with stress.....	109
4.6.5	Peer support.....	110
4.6.6	Choice of right program.....	112
4.7	Findings on Home Factors.....	114
4.7.1	Relationship between parental education level and students attrition.....	115
4.7.2	Relationship between parental support and student attrition.....	118

4.7.3 Relationship between parental income and student attrition	120
4.8 Relationship between university environmental factors and students attrition.	122
4.8.1 Adequacy of facilities.....	122
4.8.2 Student/faculty interaction and levels of student attrition	125
4.8.3 Adequacy of facilities.....	126
4.8.4 Involvement in non-academic activities	126
4.9 Current level of Student Attrition in Private Universities in Nairobi County...	127
4.10 Other causes of Student Attrition in Private Universities in Nairobi County ...	133
4.11 Rank Order Analysis of Reasons for Attrition	139
4.12 Comparative Analysis of Results.....	141
4.13 Summary of Findings.....	142
CHAPTER FIVE - DISCUSSION OF RESULTS.....	144
5.1 Introduction	144
5.2 Attrition Levels in Private Universities.....	145
5.3 Effect of Individual Factors and Student attrition	146
5.4 Effect of Home Factors on Student Attrition	151
5.5 Effect of University Environmental Factors	156
CHAPTER SIX - CONCLUSION AND RECOMMENDATIONS	158
6.1 Introduction	158

6.2	Contribution of this investigation to the body Knowledge	159
6.3	Conclusions	160
6.4	Recommendations.....	162
6.4.1	Recommendations on research findings	162
6.4.2	Recommendations for further research.....	166
6.5	Study Limitations.....	168
	REFERENCES	170
	LIST OF APPENDICES.....	187
	Appendix A: Letter of introduction	187
	Appendix B: Students self-report questionnaire	188
	Appendix C: Key informants -IDI schedule	198
	Appendix D: Key informants -IDI schedule	199
	Appendix E: Structured interview schedule-for faculty members	200
	Appendix F: Telephonic interview guide (Dropouts).....	202
	Appendix G: Participating universities.....	203
	Appendix H: Interview Schedule-Faculty	204
	Appendix I: Interview Schedule-Dropouts	207
	Appendix J: Pilot Study Findings Report	210

LIST OF FIGURES

Figure 4.1: Distribution of Respondents by Gender.....	88
Figure 4.2: Distribution of Respondents by Age.....	89
Figure 4.3: Ability to Cope With Stress	109
Figure 4.4: Distribution Curve for Individual Characteristics and Choice of Right Program.....	113
Figure 4.5: Comparative levels of parental education	115
Figure 4.6: Comparative levels of Parental Support and Attrition.....	119
Figure 4.7: Percentage of students who have retaken examinations by gender.....	129
Figure 4.8: Deferment of Semester as Shown by Gender.....	130
Figure 4.9: Distribution Showing Level of Students Attrition.....	131

LIST OF TABLES

Table 3.1: Distribution of Second Year Students	67
Table 3.2: Sample distribution	70
Table 3.3: Reliability test	73
Table 3.4: Notation for the LISREL model	80
Table 4.1: Return Rate by University	87
Table 4.2: Demographic Data	88
Table 4.3: Tests of Normality	93
Table 4.4: Covariance and Variance for CFA	94
Table 4.5: Latent Exogenous Measurement Model Fit	96
Table 4.6: Latent Endogenous Measurement Model Fit	97
Table 4.7: Correlations	98
Table 4.8: Regression weights for measurement model	99
Table 4.9: Squared Multiple Correlations	100
Table 4.10: Structural Equation Model Fit Tests	102
Table 4.11: Square Multiple Correlation	104
Table 4.12: Regression weights	104
Table 4.13: Test of Correlations between Individual Factors and Attrition	105
Table 4.14: Individual factors and attrition	107
Table 4.15: Distribution of Retakes by Age	108
Table 4.16: Role of peer support in attrition	112
Table 4.17: Role of peer advice in attrition	113
Table 4.18: Chi-Square Test for Parental Support and Students' Attrition	116
Table 4.19: Role of Parent Education Levels	119
Table 4.20: Adequacy of facilities and student Attrition	124
Table 4.21: Test of Frequency of Retaken Examinations	129
Table 4.22: Deferment of Semesters	143
Table 4.23: Descriptive Scores of Attrition	132
Table 4.24: Categorization of Attrition Reasons	140
Table 4.25: Rank Order of Reasons for Attrition from University Dropouts	141
Table 4.26: Rank Order of Attrition Elements from Continuing Students	142
Table 4.27: Comparative Ranking	143

ABBREVIATIONS AND ACRONYMS

AGFI	Goodness-of-Fit (GFI), Adjusted Goodness-of-Fit statistic
ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CUE	Commission for University Education
GLM	General Linear Modeling
HERI	Higher Education Research Institute
IFI	Incremental Fit Index
MMR	Moderated Multiple Regression model
NACOSTI	National Council for Science, Technology and Innovation
PPMCC	Pearson Product Moment Correlation Coefficient
RMSEA	Root Mean Square Error of Approximation
RMSR	Root Mean Square Residual
SEM	Structural Equation Model
SIM	Student Integration Model
SRMR	Standardized Root Mean Square Residual

ACKNOWLEDGEMENT

This work required more than I was capable of doing on my own. I am greatly indebted to my supervisors Prof. Christine Gichure and Dr. Tabitha Wang'eri for their valuable guidance, help and tireless contributions. I appreciate in particular their graciousness in accepting to supervise this piece of work, their insightful comments and the intellectual support and guidance which they have offered which has made this thesis possible.

I wish to acknowledge with deep gratitude and appreciation the students and staff members of the universities where data was collected. Their willingness to share and talk about their experiences has made this dissertation a reality.

I am especially thankful to Nicholas Muraguri who has 'demystified' field work for me. You have made this work possible through your encouragement and enthusiasm throughout our field trips and visits.

I am grateful to all my friends and relatives who have upheld me in prayer. Your constant support in prayers has sustained me so far.

My deepest appreciation goes to my children Sandra Wairimu, Timothy Njoroge and Geoffrey Gikonyo who were consistently supportive and understanding throughout this time. Your prayers, enthusiasm and belief in the success of this work made all the hours a bearable.

Finally, I owe gratitude to my husband Stephen Njoroge who has been a strong pillar of support. You have given me unconditional love and support. I am very grateful because you have demonstrated great faith in me.

DEDICATION

I dedicate this work to the memory of my mother Kathleen Wangui who loved me unreservedly and who showed me perseverance. I cannot forget my father Stephen Gikonyo who has comforted and encouraged me through all my endeavours, especially this one, showing love and acceptance.

I would also like to dedicate this to my husband, Stephen and my three children Wairimu, Timothy and Geoffrey who have supported and motivated me throughout this journey.

DEFINITION OF TERMS

Student Attrition: The practice of deferment of semesters, repeating and re-taking examinations that may lead to a degree program taking longer than stipulated time. The term also includes students who have dropped out of university altogether.

Home Factors: The selected factors in this study are; parental education levels, parental support and the social economic status of the student assessed from parental income levels.

Individual Factors: The factors looked at in this study include age, gender, and self-efficacy, ability to cope with stress and faculty support.

University Environmental Factors: These are the physical factors of a university such as classrooms library and other factors such as university faculty and support.

Self-Efficacy: Taken from Bandura's definition as one's belief in one's ability to succeed in specific situations or accomplish a task or deal with the challenges of life (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003)

Chartered University: Institution of higher learning which has undergone and passed the quality assessment by Commission of University Education (CUE) (CUE, 2016)

Private University: Institution of higher learning that does not get funding from the government (Gudo, 2014)

Retention: The ability of a university to keep students on their academic courses and graduate them within the stipulated time of their degree completion (Hagedorn, 2005)

CHAPTER ONE

INTRODUCTION

1.1. Introduction

The study aimed at investigating home, individual and university environmental factors as correlates of student attrition within private universities in Nairobi Kenya. This chapter presented the introduction and background to attrition, followed by the research problem area that was investigated. The research purpose was discussed and was followed by defining of the objectives from which the research hypotheses were developed. Finally, the chapter discussed the significance and scope of the study and the assumptions made throughout the study.

1.2. Background to the Study

Timely completion of university education by students worldwide is of critical importance and has far reaching implications. University education, a process of preparing individuals to assume their respective positions in society, has been considered to be a critical factor in human development. University education is inevitably more than the next level in the knowledge process (Mouton 2011). It is a critical element of human development as it supplies additional learning which leads to 'transformation of knowledge into behavior' (Hagedorn, 2005). Learning at university provides training essential for teachers, doctors, nurses, civil servants, engineers, humanists, entrepreneurs, scientists, social scientists and a myriad of other personnel in addition to providing the high level skills necessary for the labor market (Paul, 2014). While being admitted into a university is a remarkable accomplishment for some students, acquiring a degree is what really matters in higher education. Frustrated academic goals often result in unmet career wishes such as lesser paying jobs, less prestige, absence of career security, and sometimes fewer work opportunities (Hagedorn, 2005). Studies have also established that those who believe in the value of university education, especially in the current times of high unemployment and low growth economy, have proven that the average person with a university degree earns

more over a lifetime than the average high school graduate (Smith, MacGregor, Mathews & Gabelnick, 2004).

In order to successfully get a university degree, several factors may need to be considered. A system could start by identifying the individual-level psychological attributes, assets, and competencies, then look into the family, community, cultural, and school/institutional factors that lead to positive academic engagement, pro-social behaviors, as well as social and psychological well-being among students and youth (Smith, et al, 2004).

However, several studies have identified that there are many students who often do not finish a degree program and/or delay in finishing one (Breckner, 2012; Tinto 2012; Jiranek, 2010). The delay is manifested in students' inability to complete university programs within set schedules on the one hand, while on the other hand, students fail to complete university studies and drop out entirely.

Students joining universities are usually in their early adulthood developmental stage of 18 to 30 years (Havighurst, 1975). It is a stage marked by a person's yearning for independence from parents and family. During this period, a person is expected to move out of home, get a job after acquiring the desired education level and often start a family. Havighurst (1975) asserts that developmental stages are driven by biological milestones which present an individual with new opportunities, needs and expectations of the society. This transition through the life cycle comes with tasks that must be achieved within a certain time frame to ensure the proper developmental progression of the individual. The developmental tasks are time bound as an individual has teachable moments when the body is ready and when society requires successful completion of the task (De Angelo, Frank, Hurtado, Pryor & Tron, 2011). Effective accomplishment of developmental tasks leads to happiness and to clear attainments of later tasks of life. Non fulfillment of developmental tasks leads to unhappiness in the individual, dissatisfaction within society and difficulty in later life tasks (De Angelo, et al, 2011).

Delays in completing a degree program may therefore interfere with timely navigation of this early adulthood developmental stage. At the same time, at this stage, students' beliefs, values and goals start aligning to academic performance and may be affected by personal factors like behavior and motivation.

Students' commitment to a final academic goal, such as a university degree, is a key measure of student success and by implication an institution's success. Literature on attrition suggests several definitions. Tinto (1975) defined student attrition as a longitudinal process of interactions between the individual and the academic and social systems of the university during which a person's experiences in those systems continually modify the individual's goals and institutional commitments in ways which lead to persistence and/or to varying forms of dropout (Ascend Learning, 2012). Tinto's definition shows that attrition involves a range of interrelated factors making the study of attrition complex. Hagedorn (2005) was of the view that attrition is best looked at in terms of student retention and drop out, where the two terms see a student as staying in university until completion of a degree or leaving university prematurely. In this line, Hagedorn brought the view of retention by visualising attrition and retention as two sides of the same coin seeing retention as the persistence in a degree program until completion, and attrition as dropping out or inappropriate delay in degree completion (Hagedorn, 2005).

Therefore, students' attrition is a complex phenomenon in its operation and causation. Examination failure results in re-taking of examination thus extension of university studies completion time. Students may defer semesters or whole years of study due to various reasons which again prolongs the students' life at the university beyond the statutory expectations.

The risk factors that predispose students to attrition and the protective factors that give students the support they need to pursue degree programs to completion consist of; students' academic background (Gardner, 2008), integration of social and academic school experiences (Herman, 2011), the student's goals (Church, 2009), preparation for undergraduate studies (Herman, 2011) funding and university entry behavior (Jiranek, 2010). The risk factors related to the protective factors that give students the

support they need to embark on degree programs and pursue them to completion exist on individual and societal levels. Studies have linked attrition to negative consequences on physical, psychological, social and economic wellbeing of the affected students (Pascarella & Terrazini, 2005).

In order to understand student attrition, previous studies reveal that no one factor is sufficient to account for the phenomena fully. Rather, it is an interplay of a range of factors encompassing a student's background, home dynamics, parents' background as well as the environment of the university which the student has enrolled in. Some studies on student attrition have focused on the link between student background, institution and social interaction (Herzog, 2005). Other studies see student attrition as being related to preparation or lack of preparation for higher education (Pascal & Cox, 2005). Research has established that students took long to finish a degree program or dropped out of university for a variety of reasons including loneliness, financial difficulties and inability to blend with other students (Christie, Munro & Fisher, 2004). Whatever the cause, attrition is seen as a manifestation of students' inability to cope with the disquiet and uneasiness which may set in upon entrance into university life (Denovan & Macaskil, 2012). This study addressed this phenomenon due to the recognition as seen by Schneider (2010) that a large number of unfinished degrees lead to high costs for the country, the students and the universities concerned.

Student attrition has posed a major concern due to the negative consequences it has at individual, familial and societal levels. Scholars such as Barnes and Randall (2012), Breckner (2012) and Jiranek (2010) have established that attrition is an issue of major concern internationally. At the personal level, students fail to realize their aspirations of completing degree programs and embarking on careers or other income generating activities (Tinto, 2012). Inability to navigate age-specific developmental tasks with age mates is likely to cause disorientation with negative consequences throughout life. Such dissatisfactions are likely to lead to hopelessness, substance abuse, dependency and general dissatisfaction with life as major adult tasks are underachieved. At the family level, attrition may lead to wasted resources in terms of financial, psychological and material support that families invest in the students' education. This may translate to family unhappiness caused by prolonged dependency of individuals beyond the

psychological, legal and social obligations. The national loss constitutes of the wasted resources and reduced effectiveness of such individuals in national development.

Among the factors which contribute to attrition taken into account in this study are repeated examinations, (also referred to as examination retakes), deferment of semesters and dropping out of university altogether. The three factors combined result in a degree program taking longer than the prescribed time for universities or in non-attainment of the degree.

In the past, there has been little empirical data related to the delay and non-completion of a degree program resulting from examination retakes, university year and semester deferments as well as complete drop out of a university program. This is because studies on student attrition were in the beginning viewed through psychological lenses (Astin, 1985; Pascarella 1980). Student attrition was seen as a reflection of individual attributes, skills and motivation. This view of student attrition later changed to incorporate the role of university environments. Among the contributors to the incorporation of university environment was Tinto (1987). After a longitudinal study among students in colleges, he was able to make the connection between academic and social systems of an institution and the individual student. Although research on attrition has convincingly pointed out issues related to attrition, the studies have not yet sufficiently exposed the relationship between the individual student, background factors and the university environment in Kenyan universities. This study sought to close this gap.

Information on university attrition rates is varied. Most of the available statistics on attrition comes from the United States whereby majority of the studies done on universities agree on a 50% attrition rate across disciplines (Breckner, 2012). Gardner (2008) observed rates of 57% across disciplines, but gave an estimate of 67% in the humanities and social sciences. A 2013 survey of 100 universities in the United Kingdom found that 41% of students were identified as being in the list of 'high risk' attrition. The causes of attrition as captured in studies in the West emanate from students' past academic performance, an individual and program fit as well as a student's social economic status (Braxton, 2000; Johnson 2001). More studies in the

West concentrate on the different populations such as the view of whites, the fit of the African-American as well as the Hispanic populations (Braxton Hirschy & McClendon, 2004). The findings from the aforementioned studies might not accurately articulate the African context more so the Kenyan one thus making this study timely.

Despite the puzzle of academic attrition being an object of inquiry for decades in the Western world, student attrition studies in Africa are fairly few. One such study was done by Pocock (2012) among engineering students in a university in South Africa. The study established the existence of student attrition. It went on to conclude that student attrition was positively related to a student's sense of belonging in a university. In another study, Herman (2011) established a fifty percent (50%) attrition rate among postgraduate students in a South African university giving the indication that attrition is as rampant a problem in South Africa as elsewhere (Mouton, 2011). The South African study was further backed by more investigation done among graduate program leaders in a South African university who were of the opinion that attrition occurred due to: students' personal reasons, students' lack of ability, skills or motivation to do a graduate program, students' lack of financial support, poor supervision and an inflexible policy (Mouton, 2011). More data available from universities in South Africa show that graduations rates are among the lowest in the world at 15% (Letseka & Maile, 2008). The reason for these rates is, among others, feelings of alienation in universities especially among the black students (Herman, 2011). The South African context is not representative of the African one due to its history of apartheid. It does, however, show the timeliness of this study in understanding attrition correlates in universities in Africa. In addition, a study done in Bahur Dar University in Ethiopia confirmed that universities in Africa experience student attrition (Tirunah, 2014). Despite the study being mainly among female students in the university in Ethiopia, the findings confirmed that attrition increased during the period under study and were as a result of social economic factors of the presence of shops and night bars in the areas around university environs. Another study from Ethiopia established that parental attitude towards performance encouraged students to perform better in studies (Sewasew, 2014). Deeper investigations into factors such as a student's individual factors would add light to measures which could be taken to counter attrition. This

study aimed at looking into the relationship between such individual factors and attrition. The knowledge gained would contribute to the understanding of student attrition.

Private education is a remarkably dynamic area in post-secondary education in Kenya. It is evident that private higher education institutions have contributed to the development of higher education in Kenya. Evidence of growth in the number of private institutions and enrolment suggest that higher education is becoming increasingly diversified into two sections; private and public (Gudo, 2014). In the absence of adequate national resources to support an expanding higher education sector, private higher education has witnessed remarkable growth. Growth of private universities has been further fueled by the limited opportunities availed by public universities and the dwindling standards of education in public universities.

Compared to most other African countries, Kenya's private university system is relatively well-developed according to Mwiria and Ngome (1998). With a population growth rate of about four percent (4%) in the 1970s and 1980s, the demand for university education grew to the extent of overwhelming the Kenyan government higher education establishment. The government thus looked at private universities as a means of alleviating public universities' pressure (Gudo, 2014). Since then, the private sector has seen accelerated growth especially over the last 13 years and now boasts of twenty percent (20%) of all students currently enrolled in Kenya's university education (Odhiambo, 2014).

For many parents and students, private universities are the panacea for those who would otherwise be locked out of public university education due to lack of space. This is despite the fact that those who enter private university should be able to afford the tuition fees and related expenses. Another advantage is that young school leavers are able to enroll in private universities earlier than they would be in public universities and thus complete their degree program in a shorter time. Some of the leading private universities are also known to provide the much needed leadership in higher education and to make visible efforts to meet market needs. The University of Eastern Africa, Baraton, for example was among the first institutions in Kenya to offer a community

based health degree on public health (Kiboiy, 2013). This field of study has now been taken by several private universities. Another example is Strathmore University and Daystar University both known for their business related degrees and communication degrees respectively (Kiboiy, 2013).

On another score, private universities have gained popularity due to the prevalence of student unrest in virtually all public universities making private universities appear stable and able to deliver degrees on time (Kiboiy, 2013). For example, it is noted that during the period 1969 - 2000, 69 cases of serious strikes were reported in Kenyan public universities (Republic of Kenya, 2000). Such strikes have led to disruptions of academic programs which result in students taking longer to complete degree programs. Mwiria (2007) notes that private universities, in comparison, were better run due to the efficiency in record keeping. He adds that the leadership aspect in private universities is more visible with regard to relatively more efficient management and planning activities. Consideration of student unrest as a contributor to attrition was out of the scope for this study thus rendering private universities as best fitted for this research.

The Kenyan higher education sector is especially lacking in data on attrition rates even though student attrition is underscored by the inclusion of institutional statistics as key performance indicators in measuring educational quality as required by the National Government through the Ministry of Higher Education, Science and Technology (Ministry Higher Education Science and Technology, 2005). The government's single largest expenditure is education which accounts for about thirty percent (30%) of annual budget. Most of the funds go towards higher education and teacher training (Ministry of Higher Education, Science, and Technology, 2012). By implication, universities are called upon to meet the government's strategic plan budgets by producing an educated work force through degree programs.

In emerging economies such as Kenya, education is seen as one of the pillars for attaining prosperity and eradicating poverty as attested by Okwakol in Bunoti (2011). Since independence, the system of university education in Kenya has undergone considerable expansion. In the year 2009, there were a total of seven traditional public

universities with 12 newly established university colleges and over 22 private universities with varying levels of accreditation. It was estimated that the country had 122,874 university going students in 2008 of which approximately 80 % were in public universities (Kenya National Bureau of Statistics, 2009). This number rose to 177,735 in 2009 marking a 44.7% rise (Kenya Human Development Report, 2010). In 2012, the number of universities rose to 63 universities and university constituent colleges made up of 31 public universities and 32 private universities (Commission for Higher Education, 2012). This is in addition to a number of public middle level colleges that offered diplomas in certain fields including engineering, education, and computer science. The number of universities continued growing and reached 68 in 2014 (CUE, 2016). By 2015, total university enrolment in both public and private universities in Kenya stood at 443,783 up 22.8 per cent from 361,379 recorded in in 2013 (Economic Survey, 2015).

Though studies have been done in Kenya on higher learning, (Tirunah, 2014, Mwiria *et al*, 2007; Teferra & Altbach, 2004) a closer check on major universities' libraries yielded no comprehensive study on student attrition. A recent study on private university expansion in Kenya by Mwebi and Simatwa (2013) found that in private universities the dropout rate in the 2007/2008 cohort was two percent (2%). This reported rate was made up of only those students who dropped out of the program and left without getting a degree. The current study has considered the aspect of delays in getting a degree related to repeated semesters and retakes of examinations. This delay in addition to dropping out of university is a factor undermining achievement of the goal of adding to the educated work force in a country.

Thus a deeper look into expanded home, individual and university environmental factors causing student attrition in academic progress might offer promise for both future attrition research and strategies for effective institutional practice. Other issues surrounding student attrition such as finances, external encouragement, satisfaction with course choice, academic performance shared values and family support have been identified by international studies such as Bennett (2003) and Schneider & Yin, (2011) and are relevant to Kenya. However, locally, Mutula (2002) observed that students withdraw from university studies for a myriad of reasons but even these include both

personal and institutional circumstances. Whereas literature from studies in Western countries is laden with reports on the determinants of attrition, there is little research on the interaction of these factors in private universities in Kenya.

The present study considers home factors as those situations which include parental or guardian level of education, a family economic status measured by monthly income, students perception of parental support, as well as parental or guardian expectations of a university student upon completion of a degree program. Individual factors in this study refer to those factors that an individual brings into a university from previous experiences such as; ability to cope with academic stress, some level of self-efficacy as well as a student academic achievement while at university (Hagedorn, 2005). As for university environmental factors, those in this study include; the frequency of interaction between faculty and students, the availability and suitability of facilities within the university, as well as the levels of peer relationship among students (Flanders, 2013). It is a fact that attrition can be linked to other factors such as poor high school grades, low aspirations, poor study habits (Astin, 1984) but such factors were beyond the scope of this study.

While students who drop out attribute their failure to complete their studies to the institution, faculty members tend to blame such failure on the students (Lovitts, 2001; Graham, 1997). Weiner (2000) and Graham (1997) observe that individual factors that may lead to dropping out and which include student's family background, peer relatedness and study skills leading to academic performance, seem to have high significance. Given the interrelatedness of social and personal factors for success or failure in any given task, there was need for more research to examine the relationship between the family and institutional factors that a student may attribute towards completion or non-completion of a degree.

Literature suggests that home factors may affect attrition. Kuh (2005), in analyzing data from a study of university students in the United Kingdom, came to the conclusion that students whose parents were educated perform better than those students whose parents were less educated. This finding, however, appears not to be accurately applicable to African university populations. This is because other as studies have

shown that in Africa, parental characteristics such as educational levels do not count as much as the parents' attitudes towards their acquiring a university degree in addition to the support that such parents give to the studying children (Sewasew, 2014). A deeper look into home attitudes in relation to a student's desire of a university degree was needed to shed light on the seemingly contradicting findings between the United Kingdom and African findings.

Apart from individual and home contributions to attrition, studies have also established that the academic environment within the university itself poses major concerns in student attrition (Schlosser, Knox, Moskovitz & Hill, 2003; Stallone, 2004). This claim is in line with the earlier findings of Tinto (1975) who is acclaimed as being among the first scholars to define the process of student attrition. In a later model, Tinto (1993) explained that the characteristics of a university or a university program such as its resources, facilities, structural/organizational arrangements and its members can limit or facilitate the development and integration of individuals within the institution which would in turn see a student remain or leave.

There is a growing debate on the importance of engaging students with campus activities as institutions of higher learning respond to increases in student attrition. In a study carried out among students of a middle level university in Mid-Western USA, Demetriou and Schmitz-Sciborsk, (2011) established that students who felt supported by lecturers in the academic journey were more likely to stay on and finish a degree program than those who did not feel the same support. In reference to a study in Illinois, USA by Komarraju, Musulkin and Bhattacharya (2010), the role of students' and lecturers' interaction was found to have positive influences on students' development within the university. The relationship between student and faculty was found to be enhanced when students perceived faculty as approachable and available outside the classroom. Other scholars have supported the role of peer support towards the reduction of student attrition (Swail 2004). The scholars have agreed that the establishment of friendships with peers and the development of proper connections with faculty are important factors for a student's integration within the university with the likelihood that the student will complete a degree within the stipulated time (Swail,

2004). The findings and approach of the studies are valid and well tested. They, however, refer to education experience in the USA. This study is interested in determining factors contributing to student attrition among Kenya's university population and specifically private universities in Kenya. There is also a need to relate individual students' characteristics to the university environment. Interaction with faculty does not always automatically denote that the student will stay at university until completion of a degree (Ascend Learning, 2012). It is upon such premise that this study sought to bring in new emphasis to deal with student attrition, which is a concern for various stakeholders within almost every educational context. Attrition can be costly for all stakeholders and university planning for degree programs needs to not only identify but also address factors that are contributing to attrition. Wells (2007) stated that "...the problem of student attrition should be addressed with new vigor and new commitment" (pp. 230) because it presents serious challenges for academic institutions such as unsteady enrollment figures. Once the percentage rate of attrition becomes high, it poses a challenge for the forecast of class size, leading to closed, cancelled, overcrowded, and/or understaffed classes. Thus, interaction between student and faculty extends not only towards helping students complete their degree programs but also to fulfil commitment to the society at large.

This study has therefore investigated both individual student factors as well as the home factors where the student is coming from, in addition to the university environment, that affect a student's performance at university and are therefore pertinent to the problem of student attrition.

1.3. Statement of the Problem

When a student is not able to complete his education, he is not the only one who is disadvantaged (Pascarella & Terrazini, 2005). To the student, attrition means reduced opportunities to obtain gainful employment, prosperity and social mobility (Hagedorn, 2005 and Herman, 2011). To the university, attrition translates into loss of revenue in addition to perceived failure in increasing of its graduate population. In addition to all this, students who have dropped out may inevitably become a burden to the society by

engaging in extremely destructive behavior (Barnes & Randall, 2012; Breckner, 2012; Jiranek, 2010; Tinto, 2012 and Schneider, 2010).

The study of student attrition in Kenya is still in its early stages. Thus far, scholars who have written on matters of higher education in Kenya have focused mainly on issues of quality of education (Mwiria et al 2007; Otieno, Kiamba & Some, 2008; Odhiambo 2014). The student attrition dilemma is a problem faced by universities worldwide in both public and private universities (Davidson, Beck & Milligan 2009). Studies in the UK and USA have found student attrition rates to be a staggering 50% (Breckner 2012; Gardner 2008). A survey done among universities in UK established an attrition rate of forty five percent (Breckner, 2012; Gardner, 2008). Studies done on the African continent have established attrition rates as high as fifty percent in South Africa and thirty five percent in Nigeria, (Pocock, 2012; Mouton, 2011). A study done in Kenya focusing on private universities established an attrition rate of three point two percent (3.2%) among a 2007/2008 academic year cohort, (Mwebi & Simatwa 2013). This rate from private universities in Kenya is merely indicative. A cursory view of students' individual factors, home factors and university environmental factors in this study shed light on their relationship to levels of attrition.

Majority of studies on attrition have been done among populations in Western countries. The solutions found in these studies are most likely not relevant to the Kenyan context due to far reaching cultural and economic differences. In addition to this, there is a visible lack of investigation into the causes of factors related to attrition such as examination repeats, semester deferment and dropping out in general. Whereas institutional variables, individual variables and students' background variables have been identified as playing a role in university attrition, (Herzog 2005) there is a gap in research because the correlation of these important variables has not been investigated. This quantitative study sought to find out the relationship between home, individual, and university environmental factors, and student attrition in private universities in Nairobi County, Kenya using structural equation modeling.

1.4. Purpose of the Study

This study sought to determine the extent to which university undergraduate students attrition was influenced by factors related to the individual, home, and university environment.

1.5. Objectives of the study

The research sought to:

1. Determine the current attrition levels of undergraduate students in private universities in Nairobi County, Kenya.
2. Determine the relationship between individual factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.
3. Establish the relationship between home factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.
4. Establish the relationship between university environment factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.

1.6. Research Hypotheses and Question

The research study has the following hypotheses:

- H₁: There is a statistically significant relationship between individual factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.
- H₂: There is a statistically significant relationship between home factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.
- H₃: There is a statistically significant relationship between university environmental factors and attrition among undergraduate students in private universities in Nairobi County, Kenya.

The research also sought to answer the research question: ‘What are the current levels of student attrition among undergraduate students in private universities in Kenya?’

1.7. Significance of the Study

This study came up with valuable information which may aid higher education institutions in the formulation of necessary programs and interventions to help students successfully navigate university learning. The study looked at attrition through the lens of examination repeats, semester deferments and dropout. Current attrition rates of 37% were established which serve to inform higher education planners of the need of need to formulate interventions to curb attrition. The information would also enable Kenyan institutions of higher learning to align themselves with national policies and hence contribute to national development through contribution of an education work force. *Kenya Vision 2030* is looking upon the education sector to deliver necessary skills and build adequate human capital to achieve and sustain the country as a middle-income country (Ministry of Education & Ministry of Higher Education, Science and Technology 2012). In their policy framework for education and training 2012, the Ministries of Education and Higher Education, Science Technology share the *Kenya Vision 2030* for the University sub-sector regarding the provision of globally competitive quality education, training, and research for sustainable development (Ministry of Education & Ministry of Higher Education, Science and Technology 2012).

In addition, the study gives new insights that may be valuable in practice for those working with youth in universities and other institutions of higher learning. These include practitioners in the academic field like the Deans, Heads of department and Registrars. To the academic staff, the study reveals the importance of student/faculty engagement in and out of class. The information may also be helpful to those charged with the responsibility of dealing with non-academic matters in universities such as Deans of Students' affairs, Counsellors, Chaplains, Students' Welfare personnel, sports clubs coordinators among others. Students' counsellors may find useful guidance to set up counselling programs suitable to the students. In practice, information generated by this study can also be used by parents to better understand the university climate within which their children are operating. Parental involvement is at times crucial in the education process and universities may be required to engage and collaborate with parents to ensure success.

Finally, data generated in this study would be helpful in further research in the academic field of Educational Psychology and specifically in the area of student attrition. This was based on the notion that, best practices are anchored on research. The non-existence of a reliable Kenyan national dataset with complete individual students' records has posed constraints in the analysis of the Kenyan experience of student attrition. Whereas a reliable data base may be still out of reach, Kenyan universities have started posting data on their websites on enrolment and graduation statistics. These statistics would be made more robust with the additional knowledge from this study. The findings in this study are expected to add value to the existing body of knowledge and to serve as a stepping stone for new research on university student attrition.

1.8. Scope of the Study

1.8.1 Geographical Scope

This study was conducted in Nairobi County. The choice of Nairobi as a study area was based on an established view that Nairobi has the largest concentration of education and research institutions in Kenya and Eastern and Central Africa (Mairura, 2010). Private universities in Kenya are fairly free from a myriad of interfering factors that affect public universities such as campus closures. Kiboiy (2013) opined that private universities appear stable, as they are not affected by student unrest, unlike the public universities. The research therefore assumed that there are few external factors to divert students navigating the four years of undergraduate university education.

1.8.2 Time Scope

The sampled students for this study were second year students enrolled in various programs at the universities. The students in the study were only those in session during the period April –June 2015. The rationale for limiting the study to students in the second year was based on studies that show that most attrition occurs among students in their second year of study (Kift, 2014). It has also been established that if a student can be retained beyond the second year, the probability of success increases each subsequent year (Tinto, 1999).

1.8.3 Content Scope

This study investigates the relationship between student attrition in private universities as evidenced by examination repeats, semester deferments and dropping out from university altogether. It scrutinizes that evidence against the individual, home and university environment factors of the student.

The study further delves into the relationship between student attrition levels and self-efficacy, personal coping ability and peer support as individual factors. Parental education levels, parental support and financial support made up the home factors. Student/ faculty interaction and adequacy of facilities were investigated under university environmental factors.

1.9. Assumptions of the Study

This study assumed that respondents knew and had experiences that enabled them to respond accurately to the questionnaires. The study also assumed that the respondents had no motivation to deceive and that they were honest with their answers.

Consideration was taken to ensure that the instruments utilized in this study had sufficient validity and reliability. Structural equation model (SEM) was used in analysis of data as it has a standard error for independent variable. SEM also allows covariance among errors in addition to also allowing for collective manifestation of variables.

1.10. Summary of Chapter One

This chapter has outlined the study, giving an examination of the purpose of the study, contribution to the knowledge gap and the identification of the study objectives. The purpose of the study was to establish the relationship between student attrition rates and individual, home and university environment factors. The study looked at student attrition as the result of examination retakes, deferment of semesters and dropping out of university. Individual factors were characterized by, self- efficacy, ability to cope with stress, peer support and choice of right program. Home factors were assessed through parental education levels, parental support, financial support and parental expectations. University environment composed of factors of faculty/student interaction, adequacy of facilities and involvement in nonacademic activities.

The study would contribute to the knowledge gap on studies in student attrition.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

The study has investigated individual, home, and university environmental factors as correlates of student attrition within universities in Kenya. This chapter presents the literature reviewed in relation to student attrition in institutions of higher learning especially universities. The literature reviewed was selected according to the objectives of the study; individual, home and university environmental factors as correlates of student attrition in university education. The section includes the theoretical framework on which this study was based as well as the conceptual framework to illustrate how the variables in the current study are interrelated.

2.2 Theoretical Perspective

This section reviews theoretical foundations that discuss and explain student attrition in institutes of higher learning. Two theories have been looked at in this study of student attrition: Tinto's 1975 student integration theory (SIM) and Bean and Eaton's 2000, psychological model of student attrition (SAM). These two were used to inform the current research in the understanding of individual, home and university environment as correlates of university student attrition. Other scholars have suggested theories of attrition. Notably Nora (2002) attempted to combine Tinto's 1985 model and Bean and Metzners's theory of student retention. Another scholar Berger (2002) viewed universities as organizational institutions and suggested organizational processes to explain student attrition. A brief view of other theories is given later in this section.

2.6.1 Student Integration Model (SIM) – Vincent Tinto, 1975

A number of models have been used to explain student attrition. Among the first models to be developed was one by Tinto in 1975. Tinto's model has encouraged a

solid line of investigation which has existed for more than ten years (Braxton 2000; Hermanowicz, 2003; Pascarella & Terenzini, 2005). A significant component of Tinto's model was the two systems he saw as influencing student attrition; the family background of the student and the peer influence the student met at university. This initial model, however, ended at the point where a student made a decision to drop out of university and did thus not explain the action of dropping out. Tinto developed his model further (1993) and included factors such as the commitment of a university to the success of students as factors related to attrition (Whannel, 2012).

Tinto's major theoretic perspective on attrition has arguably enjoyed the most influence in the field of attrition research (Hermanowicz, 2003). According to Tinto (1993), individuals must transition successfully to the role of university students and become socially and academically integrated into the university. The integration process takes place both in day-to-day interactions and through the intellectual sharing of values. In this way, Tinto shifted focus away from only what happens to the student before or outside the university and included the factors of what goes on within the university. Tinto's theory has been said to be near paradigmatic in the status among attrition perspectives (Braxton, Sullivan, & Johnson, 1997) and it is used as a major organizing frame of reference in much attrition work. The model was represented graphically as in figure 2.1.

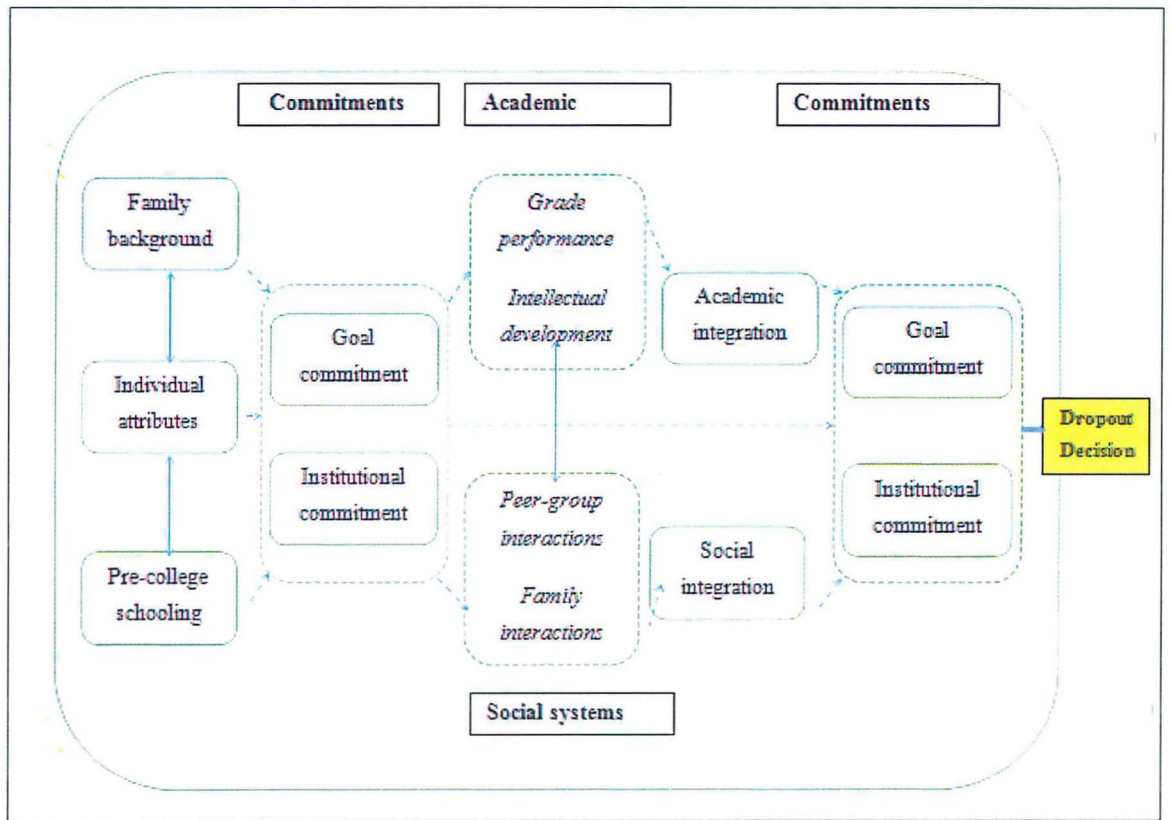


Figure 2.1: Tinto's Model of Student Integration
(Adapted from Tinto, 1975)

Tinto's model posits that persistence in higher learning is primarily a function of the quality of a student's interactions with the academic and social systems of the university. He asserts that university persistence is a function of two key concepts: social integration and academic integration. He argues that there needs to be a match between the student's motivation and academic ability and social characteristics, also known as social integration. The social integration refers to the extent of congruence between individual students and the university social system, which includes both formal and informal (non-classroom) interpersonal relationships and attachments between the student and faculty, as well as interactions among the university students in the university social life (Tinto 1993).

For Tinto, university attrition results from such interactions among students and their educational environments. That is, the more socially integrated, the less likely students are to leave, precisely because of the depth of attachments that keep them in university. The current study borrows from the social integration sentiments in Tinto's model to find out whether or not a student attributed his/her dropping out of college with social interactions in the degree programme that they were pursuing. Tinto's model also guides inquiry into this study in gauging whether or not, formal and informal contact with faculty had any influence on university persistence for those who seemed most likely to withdraw. Academic integration is seen as consisting of rules such as getting a pass mark at the end of a university semester and the academic values of an institution; for instance one would be credited more on math excellence over language excellence in an engineering program. Social integration represents the extent to which a student finds university environment to be in line with student's preferences. The preferences are informed by a student's background, values and aspirations. The integration process takes place both in day-to-day interactions and through the intellectual sharing of values. In this way, Tinto shifted focus away from what happens to the student before university to what goes on within the university.

Tinto's work has been the one most quoted study in research (Braxton, Sullivan, and Johnson 1997; Pascarella & Terenzini, 2005). Tinto's model has created a base from which studies have proliferated in the ensuing years making undergraduate retention one of the most widely studied areas of higher education (Berger and Lyon, 2005;

Tinto, 2007). Among the most acclaimed of Tinto's views is that, he sees student attrition as a process rather than a single isolated incident. Tinto was of the opinion that there is need for an individual to successfully transition to the role of a higher education student and become socially and academically integrated. Tinto elucidates and improves on his foundational theory (1982, 1986) and further details the changes in his book; *'Leaving College; Rethinking the Causes and Cures of Student Attrition'* (1987, 1993). The revision of the 1975 model recognizes the relevance of socio economic status particularly financial influence, external factors and university learning experiences of the student as influence in the pursuance of a degree program.

Tinto's model of student attrition is relevant to the current study as it does not limit the reasons for students' attrition to one factor. The current study was cognizant of the fact that, Tinto's model unlike other models, focuses on circumstances of the educational institution and institutional experience of the student following entry into the university program. Thus the model guided the study in finding out how a student's pre-university experiences and experiences while in university relate to actions seen before attrition.

Tinto's model is not without critics. Braxton and associates faults the view of the theory as a notable theory because the suggestions given may not stand true when tested for different types of universities and student populations (Braxton et al, 2000). Braxton and associates recommended that the feature of how a student fits into the area of study chosen be added to the model. In support of Tinto, Hermanowicz, (2003) was of the view that academic integration in Tinto's model is the extent of congruence between student's intellectual ability, involvement, and performance on the one hand and an institution's intellectual expectations on the other. Thus program fit and the student were brought together. Tinto also faulted himself in that while he supports that the concept of social and academic integration matters in the studies on attrition, such observations do not enlighten an institution on what to do to achieve academic and social integration. He also comments that the information about student's high school experiences and family context influence attrition may be of little use to institutions since the institution has no control over such factors. Whereas such an observations is notable, this study sought to establish the relationship between the factors which a

student brought into the institution both from home as well as the personal attributes to the factors of attrition. Tinto's theory was thus found to be appropriate to the study as it allowed for investigation of factors both out of the university and within the university.

2.2.1 Bean and Eaton's psychological theory of retention

Bean and Eaton (2000) studies on student attrition culminated with suggestions that factors that affect student attrition or that ensure retention have individual basis and thus individual processes inform attrition. The scholars proposed a model of student attrition based on four psychological theories; attitude behaviour theory; coping behaviour theory, self-efficacy theory and the attribution theory that lead to academic assimilation in a university (Bean & Eaton 2000). According to Whannel, (2012) Bean and Eaton argued that Tinto had used only sociological basis to explain attrition but that student departure from university could also be studied on psychological basis. The two scholars laid emphasis on the fact that sociology is the study of groups whereas psychology is the study of the individual. Tinto's model looked at an individual's integration into groups whereas Bean and Eaton's model looked at the individual (Bean & Eaton, 2000). According to Bean and Eaton, the process of attrition is derived from students' behavior and behavior is motivated by psychological processes. The Psychological Model of Student Retention (2000) is a mixture of four psychological models. They are; attitude-behavior theory, coping behavior theory, self-efficacy theory and attribution theory. The attitude behavior theory assumes that behaviour is a choice and thus a student's perseverance in university studies is informed by individual student's characteristics of behaviour at the point of entering university (Bean & Eaton 2000). Coping theory refers to the presence of coping mechanism linked to the past, whereas self-efficacy refers to a student's assessment of own ability to cope with stressful situations. The main tenet of the attributional theory is that behavior is attributed to internal or external causes. The theory is concerned with how individuals interpret events and how this relates to their thinking and behavior. An individual who gives internal causal ascriptions is whose motivation, based on his own decisions and actions without any expectation of an external reward

(Natriello & McDill, 1986). In the context of this study, students with an internal motivation see the need to achieve without any external stimuli. Intrinsically motivated students therefore have a desire to succeed and they pursue their studies to completion with or without support from their peers and faculty.

Bean and Eaton believed that the theory would operate regardless of students' classification by age or gender. When applied to this study the model helps the study hypothesis which sought to assess the relationship between individual factors and levels of student attrition. For example in the search for a relationship between attrition and students individual with indicators of age and gender. The central concept of the theory is that a student enters university with psychological traits which have been formed by past specific experiences, past coping skills and self-appraisals. The model summarized that if a student had a positive attitude towards university, was able to handle difficult situations, believe in success and have belief in self, she/he would then be likely to stay in university until completion of a degree (Bean & Eaton, 2000).

Figure 2.2 shows Bean and Eaton's model of attrition a graphic form.

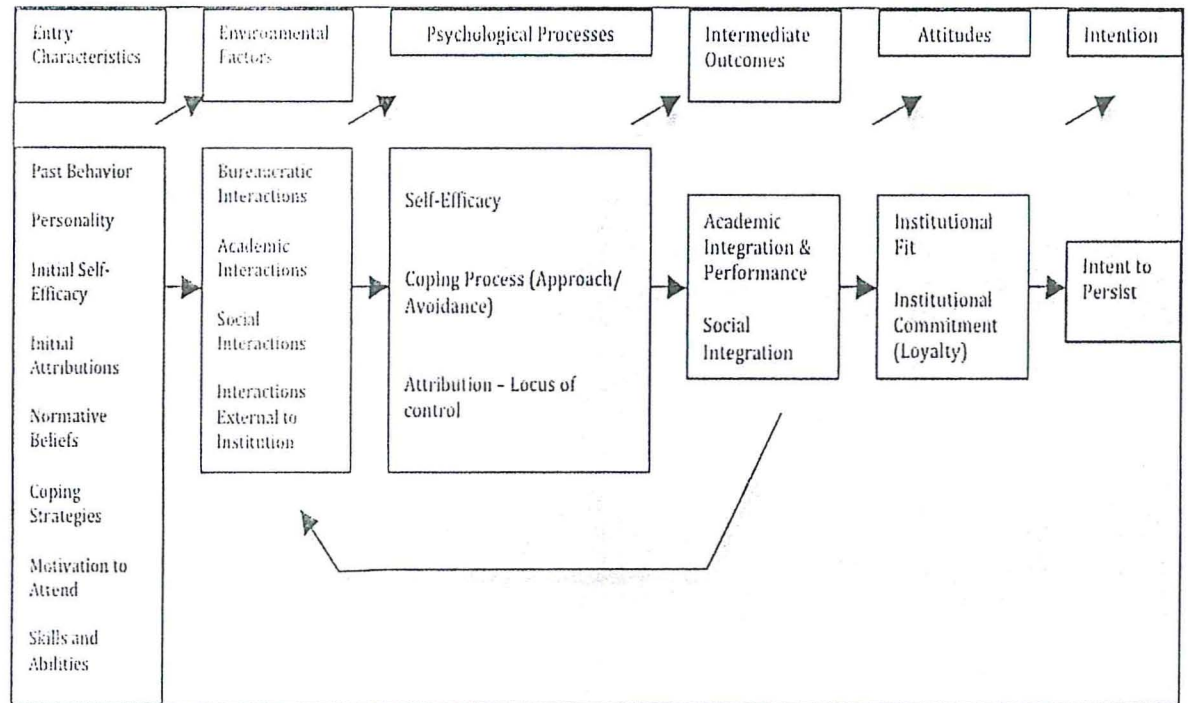


Figure 2.2: Bean and Eaton: Model of Student Attrition [2000]

The model is similar to Tinto's model in that it is complex and longitudinal but differs from Tinto's in the inclusion of environmental variable of the universities and students' intentions. Consistent with this approach, Bean (2000) finds that student satisfaction is influenced by a variety of factors that include academic performance and the students' belief regarding the influence of a university degree on future job prospects. On admission to university, the student is likely to develop networks that include a university's administration and is at the same time subject to environmental factors such as missing family and high school friends, running short of money and longing to engage in previous familiar activities.

A student's interaction with the university leads to development of both personal and institutional attitudes. The attitudes are reflected in academic performance as shown in examination scores, the feeling of fitting in the institution and loyalty to the university, all factors important in determining a student's intentions to remain in the university (Bean 1990). Thus Bean and Eaton's psychological theory of student retention offers cohesive multi-level causes of dropping out of university applicable to the current study. It combines individual features of student attrition such as student background and family support.

The main shortcoming of this model is that it does not cater for specific populations within a university and has not given allowance for individual decisions which may have no bearing on past experiences. Thus, a student who voluntarily decides to drop out of a university or who decides not register for a course unit offered within a cohort year is out of Bean and Eaton's model (Braxton, 2000).

The model however served this study as special populations and student decisions were out of the scope of the study. The Bean model brings together attribution behavior theory, self-efficacy theory and coping behavior. Among them, attribution theory behavior was the most relevant to this study.

2.6. Other Models of Attrition

Nora (2002) tried to develop a model of student attrition which combined Tinto's (1993) and Bean and Eaton (2000) ideas. This model positioned a student's persistence

through university as being influenced by; a student's determination to get a degree; the levels of an institution conduciveness to study and encouragement from family and peers. Other factors such as financial constraints and social integration were found to have low effects on attrition.

In assessing Nora's theory, Wylie (2005) found it similar to Bean and Eaton's 2000 model in that it starts with an entry point of existing demographics of the students and previous academic experience. The difference is that, the model assumes that a student appraisal of the university experiences is influenced by self-concept so that every time a student's self-concept is negatively affected, the student begins to re-appraise whether to stay or leave university. In his model, Nora's was of the opinion that validating a student in the classroom was a significant determinant in whether a student continued with university studies or not. Whereas this model has contributed to the study of student attrition, it may not serve this study as it is lacking in the inclusion of a student's commitment to completion of a degree.

Berger (2002) in another contribution to the study on student attrition, sees universities as organizations and therefore proposes that patterns of organizational behavior be included in the appraisal of the student attrition phenomena. According to Whannel (2012) organizational structures and processes affect student academic performance. This means that when a student enters into university he/she enters into an environment that may have influence in shaping behavior and impacting on academic success. The current study found this theory irrelevant in its application as it uses processes of interaction whereas the study is looking at correlations. The university environment in this study was viewed as composing of those factors such as physical facilities and student faculty interactions.

In all the studies of student attrition, Tinto's model is the most quoted for 'explaining the student departure process and has reached exemplary proportions in the field of higher education' (Tinto, 2007; p. 51). The model has gone through a lot of changes through the appreciation of a deeper understanding of students, inclusion of the differing student backgrounds and an appreciation of how a wider range of perspectives cultural economic and social factors can shape student attrition (Tinto,

2007). The inclusion of special university populations is out of context in this study and thus Tinto's student integrated model of attrition has been found the most suitable for use in interpreting the study data.

2.3 Individual factors leading to student attrition

There are several important individual factors that have been associated with non-completion of university education. Some of the factors established in a study among university students in Scotland include; limited social support, poor choice of course and lack of 'fit' between student and institution (Christie, Munro & Fisher 2004). The findings resonate with research by Rumberger and Lim (2008), in a study conducted in Canada for over 25 years that student attitudes, family and school influences as well as prior academic and learning behaviors are interrelated with attrition rates. The studies give room for exploration of the students' individual factors which each student brings to the university. A deeper understanding of such factors relating to students' eventual drop out from university was required to obtain in-depth information which would help in formulating programs to counter attrition in Kenyan universities.

The correlation between education and individual factors has been studied and analyzed widely in research work. Population dynamics is often considered a key variable in education planning (UNESCO, 2006). The African higher education sector has seen remarkable growth in the recent past. This is because although at times being a university graduate does not guarantee employment, possession of a degree certificate is considered to be critical towards social and career mobility. Sitting governments, although threatened by the rising unemployment of university graduates, support higher education expansion for reasons that higher education would support a country's economic growth (Mwiria, 2003).

Prevalent issues across Africa affecting university education result from increased demand for access to university education, decreased government funding combined with increased costs (Ngome, 2003; Teferra & Altbach 2003). Whereas the government makes initiatives to make higher education accessible, delays in completion of a degree program or dropping out of university make planning difficult

(Ngome 2003). Demographic factors, especially of age and gender, are seen as affecting student attrition. The existing literature on university student attrition identifies socio-economic status (SES) of individual students as a factor of lowered academic success.

In Kenya, the government struggles with education accessibility and is only able to make tertiary education accessible to three percent (3%) of university aged population (Otieno, Kiamba, & Some, 2008). Individual factors affecting attrition are seen as emerging from a gender imbalance and a population pyramid biased towards lower age. Student attrition takes significance as dropping out of university or repeated academic years translate into a waste of resources which would have been available to manage other population challenges. There is also the presence of missed opportunities to students who are qualified but get locked out of a university degree due to a myriad of reasons including higher education planning reasons.

Enrollment in university worldwide is growing at a high rate as a result of a rising global population as well as increasing demand for an educated work force. Accompanying the growth in university education is the increase in the diversity of student population (Metz, 2005). Students who enter university bring with them varying past experiences and personal attributes. Research on attrition has recognized that the diversity in students may also inform attrition levels.

The ability of a student to cope with the transition to university is closely related to the ability to adopt. In addition the student is subject to a catalogue of coping skills that a he has learned from past experiences (Metz, 2005). Coping with transition to the university has been found to be dependent upon the situation, timing and behaviors that are familiar to the student. It is within such diversity of individual factors that relationships of attrition are identified, giving rise to the need to respond to the relationship between attrition and individual coping abilities.

The most profound effects of withdrawal or delay in completion of a degree program is on the students. Students join the university with very different academic and social skills. Individually, they are often diverse in their backgrounds and cultures. To many

of them, this would be the time when they are making big life adjustments such as living away from home for the first time (Davidson *et al.* 2009). Nevertheless, despite these diverse backgrounds, the one thing that all students have in common is a desire for a university degree. Thus for many students, attrition is a painful experience as it represents leaving behind a carefully considered personal and economic plan (Tseng, 2004). Divergent components of evidence from past studies show that the predictions of students' eventual attainment of a degree in university may be more accurate if they were assessed from a variety of individual differences, not just on past academic achievement. The selection procedure in university education adds to this mixture as more often than not, national examination scores are used for selection to universities, (Furnham, Chamorro-Premuzic, & McDougall, 2003).

Additionally, studies of individual factors have found out that universities act as a site of pervasive gender socialization (Pascarella & Terenzini (2005) Wrigley (1995). Wanyoike (2003) for example, argues that students' peer groups can lead, if not guided, to disturbing consequences, such as engagement in drugs and substance abuse or unconventional sexual activity. Such behavior could result in neglect of studies, lack of interest in a university degree and absenteeism from classes. The possibility of this eventually resulting in dropping out of university altogether is high. Peer groups are seen as examples of interpersonal relationship. Studies on attrition demonstrate that students' interpersonal relationships within the university have the greatest effect on students changing academic goals and objectives (Nora, 2001; Chepchieng, 2004 Mwinzi, 2002).

Studies on student attrition appear to focus on individual factors that promote continuation of university studies until attainment of a degree. However, key components of individual factors such as ability to cope with stress, peers support, choice of program and the questions of gender and age as correlates of students' attrition need deeper investigation. This quantitative study may shed light on such a relationship, thus contributing to knowledge on student attrition.

2.3.1 Gender, age as individual factors for student attrition

Studies carried out in several countries show that an individual's gender and age affect student attrition. In the U.S.A., studies show that since 1988, more women than men attend university (Cahill & Hamilton, 2006). Further studies reveal that of these, men compared to women were more likely to repeat academic years (McIntosh, Wilson, & Lipinski, 2012). This is corroborated by Bunoti (2011) who found that females were more likely to graduate than males. Attrition gender differences have been noted widely by other scholars with scale balances depending on the population of study (Pascarella & Terenzini (2005); Wrigley (1995). This mention is significant for Kenya as a country because the government has made concerted efforts to make education inclusive at all levels but sometimes women still remain disadvantaged with opportunities for educational and social advancement being fewer than those of men (Pritchard and Wilson 2003; Maina, 2008). After entry into university, it is significant that besides other personal factors, pregnancies may contribute to attrition as the woman takes time off to give birth (Ministry of Education, Science and Technology 2008).

The case of women under-representation in higher education in sub Saharan African is echoed in Kenya (CUE, 2016). Despite rapid expansion in higher education, female enrolment statistics in secondary and post-secondary education continue to be lower than that of boys (Bunoti, 2011). Gender inequality in institutes of higher education is rife. There are, however, considerable variations between institutions in the enrolment of women. Private universities, for example show female enrolment figures exceeding fifty percent (50%) (Mwebi & Simatwa 2013). The explanation for this difference may arise from the fact that private universities have been found to offer more secure learning environment when compared to public universities (Mwiria *et. al* 2007). This higher representation in private universities has increased women enrollment in higher education to thirty five percent (35% as at June 2013 (Kenya National Bureau of Statistics, 2013)

Studies have established that there is little difference between males and females in terms of average age of university entrance. In the U.K, students usually enter

university at the age of nineteen (McIntosh, Wilson, & Lipinski, 2012). When the students are over 21, they are known as mature students (McIntosh, Wilson, & Lipinski, 2012). The case in Australia is slightly different where a student is considered mature after reaching the age of 25 (Reason, 2009). The USA student age terminology differs with Australia and UK in that students who are above 22 are considered 'non-traditional' students or adult students (Berger & Lyon 2005). The USA terminology is also adopted for Canadian students. In Kenya, however, the student terminology has not been applied along age divisions. However, the terms full time students and part time students have been used to distinguish university students who may have other occupations apart from being students (part time) and those whose occupation is only being students (full time) (Chege & Sifuna, 2006).

Most students in Kenya go to university directly after secondary school education, but these do not represent the whole number of students who attend university. Some students delay going to university due to possible non availability of university space. Others may start with work and return later to pursue a degree program. In 2013, over 446,000 students were enrolled in university education in Kenya (CUE, 2016). The students ranged in age from 20 to 60 with a high concentration being between 21 and 50 years. The offering of education through different alternate methods makes it possible for adults of all ages to pursue university education and at the same time continue to work. Age composition of university students may also be affected by a number of factors. For example, an increase in demand for high skills for professional careers may result in older students seeking a university education (CUE, 2016)

While assessing age and student attrition, McIntosh, Wilson and Lipinski, 2012, found out that in Australia, students aged 25 years and over are more likely to finish a degree program in time than students aged 19 years and under. The factors leading to non-completion of a degree may be unique for mature students. For example, McIntosh et al (2012) reported that older students tended to have different problems than students who had just finished secondary school. One consequence of admitting mature students in university programs is an increasing concern about how they fit into the university environment (McIntosh et al 2012). The question of maturity is at times

linked to gender as shown in the study above indicating that women mature students are more likely to finish a degree program than men.

In fact there has been research specifically exploring the influence of age and gender on university studies (McIntosh et al 2012). The elements of age and gender are demographic factors that comprise of individual factors that relate to student attrition in private universities. They were thus essential to the discussion of the correlations of the current study and the relationship to levels of student attrition.

2.3.2 Self-Efficacy as an Individual Factor for Student Attrition

Self-efficacy is recognized in students who set up their own goals and make plans on how to accomplish them. The term self- efficacy has been recognized to be at times specific to certain areas. For example, in academia, self-efficacy is at times measured as academic self-efficacy (Isaacson & Fujita 2007). This refers to a student's confidence in his/her ability to carry out academic tasks. The academic tasks include appropriate study and examination skills. Literature affords rich data supporting that self-regulation of behavior influences self-efficacy among university going students (Komarraju, Musuklin, and Battacharya 2010). The studies show that self-efficacy has a high effect on students continued studies at university by being a critical motivation factor (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003).

The concept of self-efficacy proposed by Carbonaro (2005); Denovan and Macaskil (2012) and Guest and Schneider (2003) was seen as a component of other processes which individuals use in order to realize goals. These are; self-observation, self-evaluation and self-reaction. Self-observation has been seen by Denovan and Macaskil (2012) as being the skill responsible for self-study. The skill allows students to view own habits objectively and make evaluations. Carbonaro (2005) argues that self-evaluation is the list which students use to make self-judgment. It is further viewed as a skill that is important in helping students develop more involvement and responsibility in their university studies. Self-reaction on the other hand is related to stress as observed by Guest and Scheinder (2003). The researchers observed that being

at university provided student with stressful situation as they were confronted with the need to learn how to cope with changed social and academic life.

Self-efficacy has been defined as a self-evaluation of one's capability to effectively accomplish a course of action necessary to reach a desired goal (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003).

The sources of self-efficacy can be past experiences, mediate (vicarious) experiences and verbal persuasion. Students may gain information from observing their friends or relatives succeed and fail. They then compare the observations to their own performance. Watching failure lowers levels of self-efficacy (Neck & Manz 2010). Verbal persuasion on the other hand comes by suggestions and encouragement from others and from lecturers (Neck & Manz 2010). If such suggestions are not given in an honest open manner, they may negatively affect students.

In studies of human behavior, self-efficacy has been found to be central in overcoming challenges such as those found among university students. Self-efficacy has been singled out as a strong predictor of student attrition. Neck and Manz (2010) in their book on '*leadership*' are of the view that people impact and are impacted by the environment they live in. To endorse this assertion, Neck and Manz (2010) carried out a prospective study among students in an Australian university to find out why some students were able to complete a degree and others were not. The study established that students who reported high self-efficacy also reported high average marks in examination reports as compared to those who reported low self-efficacy. Similarly, high examination reports as result of high self-efficacy were positively related to high rates of degree completion.

In addition, studies have also established that university students who manifest high self-efficacy are also known to employ more self-confidence and skills such as time management (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003). These skills may be expected to relate to success at university by 'increasing motivation and fostering efficient use of acquired knowledge and skills' (Guest & Schneider 2003 p.5).

In reviewing further literature, researchers appear to agree that self-efficacy influences order, determination and fortitude needed to cope with the demands that led to persistence in university (Komarraju, Musuklin, & Hattacharya 2010).

Going with Carbonaro (2005); Denovan and Macaskil (2012) and Guest and Schneider (2003) definition of self-efficacy, viewed as a self-evaluation of one's competence to exercise control over events that affect their lives. When self-efficacy is applied to education, there is an indication that students who believe they would succeed are more likely to do so than those who do not believe. The present study sought to establish the relationship between such a belief and student attrition as seen through examination re-takes, semester deferment and dropping out of university.

2.3.3 Peer Support as an Individual factor for Student Attrition

While students may look within themselves for resilience needed to stay on university and finish a degree program, it is also usual for the students to look for social support among their peers. Studies have established that students who on entry into university orientate towards other students who reflect a culture similar to their culture of origin are more likely to succeed at university than those who do not (Freeman, Hall & Brescian 2007).

According to Cook and Rushton (2006) peer pressure is often implicated in study habits at university. The two aspects which make university an ideal place to study peer pressure include a pronounced shift in influence from parents to peers and the need to adopt to the relatively new environments. Students who do not become socially included within the university by their peers may experience emotional problems as a result of failure to adjust to the new life at university. They may find it difficult making friends, may experience homesickness, disorientation, isolation and feelings of being lost.

Peer influences have thus been identified as effective program ingredients in guiding students while at university. A study among nursing students in Florida, United States found that when peer mentoring was introduced to a study group, attrition rates fell by as much as seven percent (Braxton & Lee, 2005). The findings are in agreement with a common held belief that the student peer environment facilitates and/or inhibits the process of social integration which has been empirically linked to students' commitment to studies, which may lead to staying on a degree program until completion (Braxton & Lee, 2005). Described as the system of dominant and normative values, beliefs, attitudes, and expectations that characterize a campus' student body, the student peer environment affects an individual's ability to become integrated into the institution and/or the extent to which a student feels a sense of belonging there (Reason, 2009).

This view is shared by other scholars, for example, Black (2011) agreed that peer support helps in student engagement with an institution through increased motivation because peers provide a wide range of support and help each other to develop skills required for university life. Understanding the nature of peer friendships may also help unravel the nature of the relationships to student attrition. Whereas many students, especially those in private universities, are fulltime students, there is the added problem of not being able to fully adjust to university life, and hence continue with home attitudes (Cook & Rushton, 2009). The role played by peers in attrition studies thus offered a rich area for investigation especially for Kenya.

Students from different social backgrounds face the challenge of non-acceptance by peers. Lewin (2011) suggests that childhood experiences such as interpersonal relationship skills may have a bearing on peer interaction. Social networks within a university greatly influence academic success by allowing for peer support (Freeman, Hall, & Bresciani, 2007). It is on such a premise that this research sought to understand the relationship between peer support and the incidence of attrition. This subtopic sheds light on the role played by peer pressure and peer support. This links to the research problem and research questions by evaluating the impact of peer pressure and peer support on student attrition.

2.3.4 Academic Performance as an Individual factor of Student Attrition

One of the strongest correlates of delay in completing university studies is lack of academic achievement. Studies show that students who score low in examinations or fail subjects necessitating the need to repeat a year, or repeat an examination, are more likely to drop out of university (Okwilagwe, 2002; Braxton, 2000). Academic success is essential if university students are to graduate. Research by Tinto (1993) and Carbonaro (2005) show that rarely are students dismissed from a university due to violation of institutional rules and regulations. Students' effort towards educational achievement or attainment is characterized by the level of institution attachment, involvement and commitment exhibited. A number of researchers have shown that the amount of effort that students put into their education, affects their academic outcomes (Johnson, Crosnoe, & Elder, 2001; Marks, 2000; Natriello & McDill, 1986 and Smerdon, 1999). In addition, studies have demonstrated an association between students' involvement with extracurricular activities and scores in university examinations (Broh, 2002; Fejgin, 1994; Guest & Schneider, 2003; Marsh, 1992 and McNeal, 1995). In a study among university students' extracurricular involvement, Guest and Schneider (2003) found that participation in extracurricular activities, such as sports, drama and community outreach programs, was associated with increased levels of academic achievement.

Whereas it is almost given that academic performance is a great factor in attrition, little research in Kenya has been done on private university students with a view to relating performance to attrition. The majority of undergraduate students in Kenya are young adults within the age limit of 18 to 24 years who progressively become independent and take responsibility for their own lives. Informal investigations among university students in Nairobi county reveals that for some students, poor performance in an examination may trigger a change in lifestyle, from being nonchalant in examinations to one of being concerned and hard working. Some students according to reports from friends, give up pursuing a degree and look for other options (Tumuti, 2014). This finding is in line with the findings of Cizek and Burg (2006) among Nigerian students where a variety of emotions including tension and anxiety were found to be crucial

factors influencing students' academic achievement such as passing exams. It is on this premise that the present study delved into how academic achievement relates to individual factors in contributing to attrition.

Studies have been done on university populations in Britain and America which are different from those of Kenya. Informal research carried out among university students in Nairobi, while not academically significant, gives indications that examination failure is among the most common reasons why students give up on a university degree. For instance, University of Nairobi shows examination failure rates as high as twenty five percent (25%) in faculties such as school of Business Management and the School of Arts (Registrar report, UoN, 2012). This study hoped to elucidate university students' academic performance more so on examination performance as individual factor in attrition correlation, effectively adding to the current literature on university student attrition in Kenya.

2.4 Home Factors and Student Attrition

On entry into university students arrive from different backgrounds and culture. University students come from diverse families and backgrounds (Allen, 1992, Alderson & Morrow 2006). Literature has also identified several background (home) factors as predictors of students' academic success or lack of it. For example, past studies on student attrition, focusing at students from disadvantaged backgrounds have found that at times the students find it difficult to continue with studies arising from lack of financial resources (Christie, Munro & Fisher, 2004). In addition, studies have established that home backgrounds may dictate whether a student possesses the cultural mastery required to negotiate the university environment and whether parents are able to give the required support by sharing information about university life (Christie et al 2004). Parental education levels, social economic status of parents and students' perception of support from parents have been selected in this study as the home factors.

2.4.1 Relationship between parental education levels and student attrition

A variety of studies have demonstrated that parental education levels have a correlation with students' educational outcomes. In a quantitative study among student in Glasgow city, Christie et al (2004) established that parental education levels were among the causes of non-completion of a degree program where students cited lack of encouragement from parents. Other studies by Davis-Kean, (2005) found that parental education levels as a social economic factor had bearing on students' continuing education at university. This study carried out among Hispanic and African American student in the USA linked low levels of parental education to non-completion of university degrees. Pascarella and Chapman, (1983) had in an earlier study noted the tendency of attrition among students who were the first in their families to go to university. Qualitative studies by Ishitani and DesJardins (2002) confirmed high student attrition rate. The population group is commonly known as first generation students.

Ishitani and DesJardins (2002) carried out a study that established attrition rates among first generation students to be as high as fifty one percent (51%). This percentage included both those students who dropped and those who were unable to complete their degrees within the stipulated time. In-depth inquiry among this first generation students studies by Lee, Sax, Kim and Hagedorn (2004) reveal that students are unlikely to have been prepared for university education thus putting them at a disadvantage when compared to the students whose parents have a degree/college education. Although there is no comprehensive study conducted in relation to the attrition rates in universities in Kenya, reports from academic registrars in both public and private universities show a big discrepancy between admission figures and graduation figures with the graduation figure being far lower than the admission figure (CUE, 2016). The current study thus serves to establish the extent to which parental education levels is related to attrition rates.

Attrition models such as the one by Tinto (1975) have cited that parents' education levels can provide a unique advantage to student academic attainment. For instance,

using Tinto's model of student attrition, Bui (2002) and Chen (2005) suggested that parents with a university degree may have familiarized the students with university life thus demystifying it whereas parents with no degree may be unfamiliar and even condescending to university education expectations. Studies in Australia have shown that among students whose parents had an undergraduate degree, a ten percent (10%) attrition rate was recorded, whereas among students whose parents had high school diplomas or lower, twenty three percent (23%) attrition rate was recorded (McCarron & Inkelas, 2006). Such a significant impact on attrition emanating from parental education levels gives a compelling case for investment in university education and therefore calls for further investigation within a Kenyan context.

In a four-year longitudinal study of 6,660 high academic aptitude students in a University in the USA, Astin (1985) found that the father's education, the mother's education, and the father's occupation, each had significant direct and positive effects on challenging students' persistence at university over a four year period. By contrast, Reitzes and Mutran (2004) using a larger set of variables and more statistical controls, reported that father's education and family income had no direct effects on the educational plans of undergraduates, although parental characteristics exerted some indirect effects through students' past academic performance. Additional support for claims about the indirect effects of family background came from Aitken (2004) who noted that the academic performance of university freshmen was significantly increased if parents had college degrees and that the students' academic performance, in turn, had positive effects on remaining at the university. Such divergent findings especially from large scale longitudinal studies are questionable and may not be applicable to the Kenyan situation where generations of the population who have attained a university degree are still in their infancy.

According to McLaughlin and Randolph (2012), the relation of parents' education to children's academic performance in India has been found to be dependent upon certain behaviors and practices. Competence in language was also found to have significant influence on how parents communicate with children. Consequently, parental education levels appear to have a major influence on children's academic performance. Researchers concerned with student attrition tend to combine parental occupation,

education and income into a merged measure of social status (Azhar, Nadeem, Naz, Perveen & Sameen, 2013). Other studies combine the social status and individual characteristics of students, such as sex, age, ability, and past performance, into even more complex theoretical and operational constructs given the name "background" (Aslam, Younis, Maher & Abbasi, 2012). There would be inevitable problems in measuring findings based on these composite measures of background. Parents have crucial effects on the academic success of children at different levels of education. To be successful in higher education and life, adolescents and young adults need trusting, supporting, and caring relationships with families, especially with parents. This is the reason some researchers have suggested that the family support adolescents receive from parents is an important defense in life, particularly during the transition to university.

Within Africa, studies on higher education differ in background and historical information from those done in the West. Nonetheless, they appear to have many similarities despite the background. For example, studies done in Ghana's higher education institutions, show that parents are likely to be more engaged with university student learning when their educational level exceeds the student's current level of education (Chowa, Ansong, & Osei-Akoto, 2012). However, in what appears to be a paradox, the Ghanaian study revealed that parents who are less educated than their children take greater interest on what goes within the university environment than parents who have a level of education equivalent to or greater than that of their children. Less educated parents are more involved perhaps because many would like to see their children attain higher education (Nyarko, 2011). The same studies affirm that there is the relationship between the interest parents take in their children's education and the levels of academic success. Nyarko (2011) is also of the opinion that the level of parental interest is limited to what a parent can understand. Consequently those students whose parents have a level of education equal or higher than others have an advantage. Still in Ghana, another study claims that students whose parents' level of education was lower than theirs were able to get 'moral' support, maybe to encourage such students to attain a higher education level than that of their parents (Oseguera & Rhee 2009). Although low parental education may predict attrition, it is

important to investigate the extent to which parental education levels lead to student attrition, taking into account the extent to which the student perceive it as important especially in the Kenyan academic system.

World Bank (2009) acknowledges that in developing countries in Africa, there are socio-cultural norms which permeate institutions of higher learning. Among the cultural factors, young people hold their elders in high esteem, respecting them and the opinions they may express. It is expected that the extended family system, made up of people who are usually older than the student, would be able to provide guidance and support through whatever the student is going through in life, including the challenges of university education. Parents with less than a university/college level of education would concentrate on encouraging their children to attain a degree so that they may be able to enter a competitive labour market and act as a vehicle for economic growth for their families and the country (Kigotho, 2001).

Studies for Kenya's tertiary education, have tried to focus on family relationships by looking at the family size and the intent of a child staying in school. Parents in Kenya tie the investment in a child's education to the direct income returns likely to be made from the educational investment outlays. Literature shows that parents in Kenya are likely to support education of children in such a way as to favor those most likely to stay in higher education (Chege & Sifuna, 2006). Studies elsewhere assert that schools and homes socialize children through inputs such as opportunities, demands and rewards that they provide as well as the intimate and more persistent environment offered by the family (Hong & Ho, 2005). In Kenya, higher education is considered to be exclusive by virtue of the idea of higher education itself. A review by Henderson and Berla (2004) of sixty-six studies on the subject of parental involvement concluded that parents social income and social status, are not good predictors of university student outcome, rather, it is the extent to which families are able to create a home environment that supports learning; communicate high and reasonable expectations for their children's achievement; and become involved in children's academic work. It is with this in mind that this study investigated the correlation between home factors especially parental involvement and attrition in universities. This subtopic sheds light on the role played by parental academic level on student attrition. This links to the

research problem and research questions by evaluating the impact of parental academic level on student attrition.

Attrition research has identified three types of persons who may have a relation in students' actions leading to attrition: peers, faculty, and parents. Past studies have paid a lot of attention to this, implying that decisions to drop out of university are influenced by acceptance by peers or the degree to which a student participates in peer relationships and forms close friendships (Bean 1980; Pascarella & Terenzini 1979, Spady 1971; Tinto 1975). Contrary to the attention given by studies on peer influence, home, and thus parental influences on students' attrition are rarely measured by the amount of contact time students have with parents or by the student satisfaction with such contacts. Instead, the studies have evaluated the status characteristics of parents. Under such conditions, the lessons from studies on impact of parental contact are not adequate.

2.4.2 Relationship between students' perception of parental support and attrition

Student's perception of parental involvement can exert additional influences on the educational attitudes, achievements and consequent resilience to university related stress. This can in turn contribute to persistence of students throughout their university years, hence decreased likelihood of attrition. For example, borrowing from high school studies, parental involvement was found to be positively related to high school students' academic achievement, time spent on homework, favorable attitudes toward school, and reduced levels of high school dropout (Rumberger & Palardy 2005). Variables such as time spent on homework, school retention, and educational aspirations are all indicative of how much students value education and how motivated they are to succeed academically. This high school example may hold for university education because it is from the high schools that universities are populated. Students joining university are usually in the developmental stage of emerging adulthood (Arnett & Tanner, 2006). During this life stage, university and work opportunities are principle to developing career paths en route to attaining financial independence plus a possible support to family (Hamilton, 2006). The transition from high school to

higher education, such as the university, is a highly stressful time for many young people. This transition period is associated with various stressors, including social isolation, academic pressure, financial difficulties and homesickness (Hicks & Heastie, 2008). The psychological pain related with the move to university usually has a negative effect on the academic achievement and attainment of a university degree especially during the first two years of university (Hysenbegasi, Hass & Rowland, 2005). It is often assumed that perceived parental support would act as a buffer against such stressors.

Thus a positive home environment as dictated by parent's warmth encourages the development of academic self-efficacy and enhances motivation in children. Parents' aspirations for success in school are positive predictors of their children's aspirations. In a study conducted by Garg, Kauppi, Lewko, and Urajnik (2002) among Canadian university students, parental education levels were found to be strong predictors of academic performance among university students. This study found out that parental influence accounted for a significant amount of the variance in educational ability and the instilling of the perspective that education was rewarding (Garg et al 2002). However, the discussion of students' perception of the value of the parents' involvement is largely absent in studies done in Kenyan universities. The current study offers this discussion through data analyzed through structural equation model.

In the past three decades, a great deal of education research in Britain and America has focused on the role of family background and school effects on educational attainment and achievement. The reason for this research in Britain and America came from the findings of two major projects, the Coleman Report (Coleman et al, 1966) in the United States and the Plowden Report (Peaker, 1971) in Great Britain. The reports concluded that family background was more important than school factors in determining children's educational achievement. Whereas the Coleman report was done mainly on schools and not universities, the generalization of the study was enough to spark off debates on the effect of family background on parents' academic levels and students' academic commitment which may lead to achievement or non-achievement of a university degree.

A growing body of research has also shown that students perform better academically when parents show interest in the students' academic work (Catsambis & Beveridge, 2001; Christenson, Rounds, & Gorney, 1992; Feuerstein, 2000; Jeynes, 2003; Rumberger & Palardy, 2005). For example Catsambis and Beveridge (2001) in their study in higher education in USA analyzed several aspects of students' lives and found that parental interest in students' university studies was positively linked to better performance. In another study evaluating the effects of family and school facilities on students' achievement in a United States High School, Parcel and Dufur (2001) found that parental involvement in school activities had a positive impact on children's mathematics achievement. Whereas this current study has been done on university students, there is a parallel between high school students and university students. It is high school students who transit into university undergraduates bringing on board previous experiences gained from high schools (Conley, 2007).

Models of student attrition have identified variables which have been found to be related to attrition. Psychological and socio psychological approaches to student attrition have informed most of the literature on such studies (Berger & Lyon, 2005), concentrating mainly on assessing how individuals perceive themselves in an educational context. Among the environmental factors within which students assess whether to stay at university or leave, is parental support.

However, students who enter university come with a variety of attributes prior to university entry. The attributes include socio economic status, parents' educational background, family encouragement and financial support (Muckert, 2002). These attributes add to the complexity of addressing the attrition problem. This is especially true for Kenya where studies on attrition have largely been done in primary and high school leaving university studies mostly under- studied (Nyarko & Vorgelegt, 2007; Topor, Keane, Shelton, & Calkins, 2010). The factors contributing to student attrition may occur in different combinations, thus making an investigation into the correlates mentioned before useful and adding to the knowledge of student attrition in universities.

The result of these studies establish that different countries have different attrition rates based on varying influences, yet conclusions drawn from them assume universality of attrition. This study thus investigates variables in different combinations as contributors to student attrition in private universities.

2.4.3 Students' perception of financial support and student attrition

Lack of financial support plays a key role in continued studies for university students. The link between parental education and social economic status has been loosely applied to relate students whose parents have attained a degree at higher education level to a lower risk of attrition, compared to those students whose parents have not attained such a degree (Cabrera & LaNasa, 2001; Hossler Schmit & Vesper, 1999). Research has equated education levels to social economic status arguing that the higher an individual is in education level, the higher the income on employment (Johnson 2001). In a descriptive study among female students in Ethiopia, Atinaf and Petros (2016) found that students whose parents' came from low economic status found that economic constrictions seriously interfered with university studies. The effect of economic constraints was visible from the inability to purchase necessary education material, even reaching as far as lack of finances to feed properly (Atinaf & Petros 2016).

The study in Ethiopia was of the opinion that students' view of the extent to which parental financial support is related to university experience may be a result of an indirect effect of parents' accomplishment-fostering behavior through the effect of parents' educational expectations (Atinaf & Petros 2016). It is however of import to note that financial burden may add stress to a university student resulting in delay in completion of a degree program (Isaacson & Fujita 2006). Lack of financial support is often seen among those students whose parents are unable to offer them financial support and have to rely on grants or scholarships (Davis-Kean 2005). Financial aid in any form is targeted on the students from low social economic status to provide them with education opportunities which those students from high social economic status have. Further studies on attrition have argued that financial constraints pose a bigger

challenge for university students than do other factors related to attrition (Atinaf & Petros, 2016)

Past studies have investigated parental social economic status but students' view of financial support while at university has received rare support. This study aimed at investigating the relationship of students' perception of financial support especially from their parents. The study takes into account that support received from parents' may be influenced by family interactions patterns and may be linked to students developing academic success and achievement oriented attitude (Guerra & Huesmann 2007)

2.5 University Environmental Factors and Student Attrition

The importance of the student-teacher relationship has been agreed upon for a long time. Greek philosopher, Plato, some 400 years before Christ, advocated for a good relationship between teacher and student so that learning can take place. Other notable educational philosophers and researchers like Pascarella and Terenzini (2005) offer support for the importance of positive relations between student and lecturer. The university environment is a complex combination of different interaction and process. The university environment has an impact on students' achievement, wellbeing as well as on completion or non-completion of degree programs (Hutt 2012). Literature on university environment in relation to student attrition indicates that the environment has a direct relation on attrition rates (Hutt 2012).

Two kinds of factors which affect the university environment have been identified by studies such as have been done by Zepke and Leach (2005). The first are the external factors such as enrolment patterns, government funding of institutions and increase in the number of both public and private universities. The second are the internal factors such as students' relationship with faculty and perceptions of adequacy of resources that aid learning. This section reviews literature related to internal factors found in universities which have a relationship to student attrition. Among the internal factors examined are student faculty interaction and student faculty support. The literature

related to the adequacy of facilities and its effect on student attrition has also been examined.

2.5.1 Student faculty interaction and student attrition

In the last few decades, numerous empirical studies have explored the effect of student-faculty interaction on students' university experience (Kim & Sam, 2009). It is commonly acknowledged that student/faculty interaction would have benefit for the university student degree pursuance (Pascarella & Terenzini, 2005). The importance of appropriate social relationships within a university has been recognized by Pascarella and Terenzini, 2005. Faculty has a role to play in student attrition through the pedagogy of teaching. Kim and Sam, (2000) argued that lecturers can make students transition from high school to university a lot easier by showing the value of social transition and integrating academic transition into curriculum design of a program. A study among students in Central Queensland university in Australia established that student attrition can be reduced through the use of faculty strategies which use 'explicit teacher talking, reflection on learning, shared experiences and positive feedback' (Huntley & Denovan 2009, p.6). This view is reinforced by Pascarella and Terenzini (2005) who found that high levels of student-faculty interactions have an effect in the reduction of attrition. The current study reinforces this view and has found that a positive relationship exists between student attrition and low attrition rates. Thus the more students interact with faculty the lower the attrition rates.

In literature review relating to university student attrition, Zepke and Leach (2005) observed that among 20 studies, student attrition rates were lower in situations where students had regular and meaningful interactions with their lecturers. The roles which lecturers play are to nurture and mentor. The role of nurturing has been found to be especially important among students who are slow in adopting an institution's environment. Lau (2003) in a study among students in Canada had earlier found that frequent interactions among students and faculty members increased the chance of students' stay at university. However, Taylor and Bedford (2004) in another study among university students in Britain, suggested that it may not be right to assume that all interactions between faculty and students have a positive effect. In spite of the

generally positive relationship between student-faculty interaction and education outcomes in university education, fresh researchers have found student faculty interactions may have different kinds impact on student academic outcomes (Lambert, Rocconi, Ribera, Miller & Dong, 2008). For example, sometimes interaction with faculty was found to be beneficial to a student only when it was academically oriented. Social interactions were found to be of no effect (Pascarella & Terenzini, 2005) as the students were unable to relate to university environment outside of studies. Crisp (2009) identified different aspects of student-faculty interaction such as; emotional support, career support and degree progression; knowledge of program units and offered support and the availability of lecturers to be viewed as exemplary examples. Previous studies have been done on populations in Western Countries (Lambert et.al, 2008; Pascarella & Terenzini, 2005) where the underlying culture maybe different while assessing student faculty interaction. While there is a general agreement that faculty-student interaction impacts academic effort of students positively, the relationship with attrition needed deeper investigation in assessing the relation to student attrition.

While Tinto's theory of student integration (1995) supports the role of student contribution in attaining a degree, Berger and Milem (1999) found that students whose values, norms and behavior corresponded with those prevailing on campus were most likely to graduate. The mere knowledge of the integration of student and faculty may not shed sufficient light on the question of student attrition. For example, Bean and Eaton (2000) used attitude-behavior theory to underscore the status of student characteristics to success in higher education. In their study among students in an Amityville university in New York, conclusions showed a positive link between student engagement and desirable learning outcomes such as critical thinking and grades. Student engagement is found at the interaction between student behavior and university environment as other factors such as pre-university characteristics that are beyond the control of the student or the university.

Kuh, Cruce, Shoup, and Kinzie (2008) have confirmed this through a research study to determine the connection between student engagement, student success and college

student persistence. The research results pointed to two conclusions: first, their results corroborated previous work conducted by Kuh (2005) indicating a relationship between student engagement and positive academic outcomes such as grades and persistence between the first and second year of university. Second, the conclusion posited that student engagement had more significant effects on lower ability students to persist to a second year of higher learning at the same institution.

Studies on attrition have often relied on both sociological and psychological theories to explain the phenomena. Pascarella and Terenzini (2005), in a study among university students in Southern United States, found that students were more likely to finish their degree or diploma programs when they felt integrated into the institution's academic and social community. More recent studies, notably those of Saklofske and Austin, Mastoras, Beaton and Osborne (2012) agree with the argument and conclude that, students' assessment and adoption to the university environment is influenced by students' choice of behavior in coping with stressful situations. Daily stressors while in university include studying for examinations, writing projects, weighing between social and academic activities and are hypothesised to function as important determinants of how the students handle attrition related questions (Seiffge-Krenke et al., 2010). The importance of faculty support is further enhanced by the view that joining university is recognized as a transition period. Students' separation from family and previous friends and changes in everyday patterns cause acclimatization challenges in some students and result in early withdrawal from university. University students are generally expected to be responsible young adults (Appleby 2005). Thus, Appleby sees the transition period from high school to university as a time when students learn and adopt effective ways of learning which are not necessarily, even if important, based on easy availability of teachers and physical features (Cobb et al., 2003; Appleby 2005 & Isaacson & Fujita 2006).

Studies among university students in California by Rumberger and Lim (2008) found that individual as well as institutional factors interact and contribute to the predictors of whether a student would finish a degree program or not. This assertion had earlier been made in attrition studies by Tinto (1975), whose student attrition model includes

characteristics that pertain to the student and characteristics that pertain to university programs (Braxton & Hirshy, 2004). Research has shown that some of the most powerful predictors that students will complete their degree program include faculty support related actions such as course performance and class attendance (Allensworth & Easton, 2007). This claim is exemplified in a study among nursing students who were found to stay on the nursing degree course when faculty took interest to integrate students into the program (Wells, 2007; Fleming, Howard, Perkins & Pesta, 2005; and Engstrom & Tinto, 2001).

A psychological sense of community also appears to be a key factor in student attrition in universities. Schuetz, (2002) reviewed 25 studies on attrition done among several universities in Britain and found that student perseverance in and eventual completion of a degree are affected and may be hindered based upon poor relations with faculty especially among those students who fail to initiate contact with faculty outside the classroom. While it may be useful for universities to know that academic and social integration among students matter, research has offered little insight into the actual relation between a student's decision to persevere at university and the role of university faculty to achieve this.

Additionally, studies have been done to contextualize academic and social integration in ways that can be measured and thus be used by institutions (Pace 1980; Astin, 1984; 1993) and more recently Kuh (2003). This is especially true of universities in Africa, especially Kenya, where programs addressing interactions between students and faculty are still in their infancy. Accountability demands from state legislatures and accreditation bodies such as Commission for University Education (CUE) in Kenya have increased substantially over the past decade. The current trend in the performance-based approach to student outcome assessment focuses on student persistence and degree completion (Ryan & Glenn, 2004). This subtopic sheds light on the role played by faculty support. This links to the research problem and research questions by evaluating the impact of faculty support on student attrition.

Besides that, studies have explored the effect of student-faculty interaction on students' university experience with similar positive influences (Kim & Sam, 2009; Pascarella & Terenzini, 2005; Lau, 2003), while other studies revealed that different interactions have various impacts on student outcomes (Lambert, Rocconi, Ribera, Miller & Dong, 2008; Kuh, Cruce, Shoup, and Kinzie, 2008). Tinto (2003) acknowledges that economic and psychological experiences of a student may have bearing on a student, either staying or leaving a university, but he adds, as shown by the model of student integration, that a student's experience within campus may be more relevant than the experience before campus. This view is supported by findings that 4.39% of students in the 2007/2008 cohort, who dropped out of private universities in Kenya, did so because of differences with lecturers (Mwebi & Simatwa, 2013).

2.5.2 Adequacy of facilities and attrition

It is generally accepted that good facilities are needed for sustainable degree programs. Physical facilities provide one of the university environmental factors that influence students' academic progress. Students use the classroom, libraries and laboratories to carry out research work, write assignment, and carry out seminars and workshops as well as other practical academic assignments. The students are encouraged to carry out their work if the university facilities are adequate. The Commission of University Education (CUE) has set guidelines for what is considered to be adequate facilities. For example, among the minimum facilities expected for a university to be allowed to operate should be adequate lecture theatres, a library with sufficient books for each of the university program expected to be taught, and a student common room with indoor games (CUE 2016). Studies on student attrition corroborate with the observation that a university fashions and upholds an environment conducive to learning and scholarship through physical facilities (Broh 2002; Cao & Gabb 2006). Studies show that adequacy of facilities and proper upkeep help a university to provide 'an environment conducive to academic development' (Broh 2002 p. 88). In a mixed method study among students and staff in forty universities in the USA, Dufresne (2005) found that academic buildings, halls of residence and libraries were among the most highly rated facilities in the contribution to the academic studies. The study

established that the adequacy of the facilities contributed to student retention until degree completion by thirty five percent (35%).

Ndirangu and Udoto (2011) established that overcrowded lecture theatres and inadequate teaching and learning facilities are likely to impact negatively on students staying on at university. This was an exploratory survey which focused on one of the main physical facilities of a university, the library, and represents one of the studies done in Kenyan universities investigating students' views on the importance of adequate facilities. The study established that effective cultural, intellectual, and technical development of students is only achieved when adequate library and information resources are provided (Ndirangu & Udoto 2011). Despite the study addressing public universities in Kenya, the findings are relevant for private universities where adequacy of facilities is one the attraction, when compared to public universities. Whereas such a comparison is outside the scope of this study, the information reinforces the relevance of adequate facilities to student attrition.

A growing body of research has found that the university facilities can have an intense bearing on students on their academic journey. Gudo (2014), in an ex post facto study and survey in four universities in Kenya, examined the relevance of adequate facilities such as laboratories and lecture rooms. The satisfaction levels in private universities were established at thirty five (35%). That meant that students did not perceive facilities in university to be adequate to support studies and thus felt unsupported in the academic pursuit. In the circumstances that universities experience shortage in learning and physical facilities, inquiry is then needed on whether inadequacy of such facilities is related to delays in completion of a degree program or for dropping out.

Whereas there exists large studies on adequacy of facilities, a more thorough investigation is required to show the correlation between adequate university facilities and student attrition.

2.6 Summary of Reviewed Literature and Research Gap

The literature reviewed shows that individual factors, home factors and university environmental factors are related to the problem of attrition among university students. The literature reviewed intended to position the envisioned study within the relevant literature on university student attrition studies worldwide as well as show the link between university students' backgrounds (home factors), the university environment, as well as the individual characteristics students bring on board when they join the university.

The reviewed literature showed that student attrition is usually a result of more than a single factor and the studies establishing this finding date as far back as 1975 with the contribution of Vincent Tinto. Furthermore, reviewed literature shows that a students' disposition while at the university is a determinant on whether the student would complete a degree program in time or not. Inclusion of the environment within which a student operates while at the university has been found to be significant in contributing to attrition as have family backgrounds and the educational status of parents and or guardians. Such studies have however not been done exhaustively in Kenya with the Kenyan universities population. Thus, the study objective of investigating the manner in which these factors, identified in the literature review, affect students in Kenyan universities appears to be timely. It is on this premise that a deeper look into the interplay, between individual, home and institution environment factors was suggested in this study with a view to addressing the student attrition phenomena.

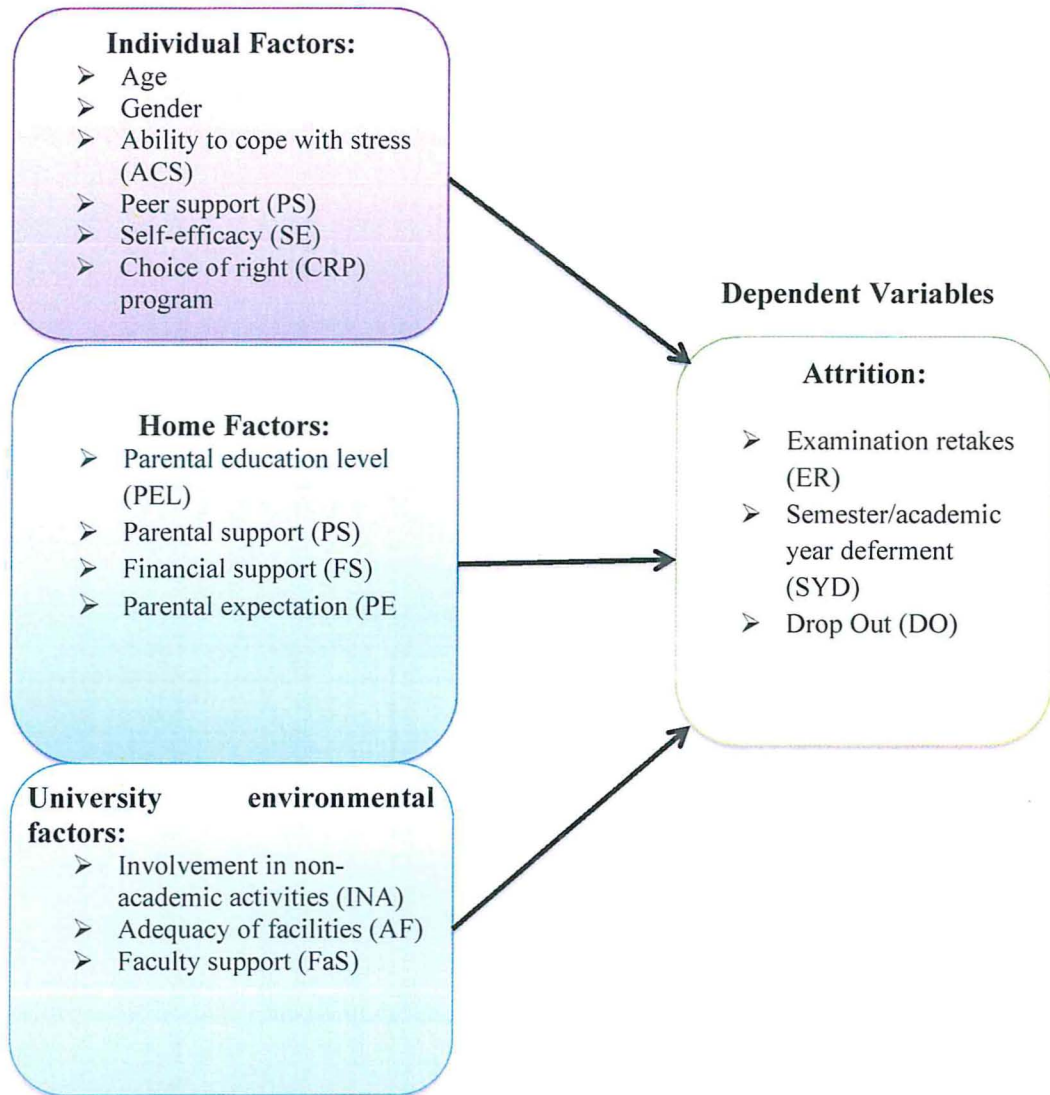
However, there are gaps within the reviewed studies which demanded exploration of relationship between student attrition and factors of home, individual and university environment within private universities in Kenya. While majority of the reviewed studies confirmed that attrition is as a result of a variety of factors, literature on attrition in Kenya is scanty. Even among the existing literature done on higher education in Kenya (Mwiria, 2007) the question of attrition as interplay of home, individual and university environmental factors had not been particularly addressed. Research in higher education in Kenya concentrated more on quality and adequacy of education

opportunities, largely leaving out the question on attrition. It was this research gap that this study filled.

2.7 Conceptual framework

The conceptual framework of this study is based on a combination of Tinto's Student Integration Model (1975) and Bean and Eaton's 2000 Psychological Theory of retention. Tinto's model suggests that attrition is influenced by the degree to which students, integrates both socially and academically on entry into university. Central to this model is the degree to which each individual is integrated into the social and academic aspects of a university (Kelly, 2008). According to Tinto, students bring with them into the university experiences from the family they come from as well as characteristics of the high schools they had attended. Bean's theory incorporates the psychological element combining factors both within and outside of the university. Whereas Tinto looks at an individual integration into a group, Bean looks at the effect on the individual success in integrating into the group. Thus the conceptual framework posits a central role of student interactions with home, individual and university factors as correlates of student university attrition. Following entry into university the question of whether a student would attain a degree within the stipulated university degree program or not may not be related to one factor but interplay of the variables as depicted in the following figurative representation Fig. 2.3. The conceptualization of this study is that individual factors take into account a student's age, gender ability to cope with stress peer support and self-efficacy. Home factors are seen as students' parents' level of education, parental support, financial support and parental expectations. University in this study have been limited to involvement in non-academic activities, adequacy of facilities and the faculty support as evidence by student /faculty interaction.

Independent Variables



Source: Modified by researcher from Tinto (1975)

Figure 2.3 Conceptual Framework

The use of this model allows the incorporation of the aspects that form the specific factors allowing for a broader reach. From the literature review, the author has demonstrated that the impact of these variables has not been studied in the Kenyan context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The current study attempted to determine the nature of the relationship between individual, home and university environmental factors and student attrition levels using a quantitative research design. Allowing for the importance of completing a degree within stipulated time, an increased understanding about this continually changing phenomenon would serve to identify possible answers and interventions.

This section covers the research philosophy guiding this study. It looks at the location of the study, the population, instrumentation, data collection procedure, data analysis, validity and reliability of the instruments of the study and the measures taken to protect the privacy and rights of the participants.

3.2 Research Philosophy

Research philosophy is seen as the development of the research background, research knowledge and its nature (Saunders & Thornhill, 2007). Research philosophy can also be defined with the help of research paradigms. A research paradigm is the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Kuhn, 1962). Research paradigms can be characterized through their ontology (what is reality), epistemology (how to know something) and methodology (how to go about finding out). Cohen, Manion and Morrison (2008) were of the view that research paradigm is the broad framework which comprises perceptions, beliefs and understanding of several practices used to conduct research. Derived from the research paradigm, a research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used (Saunders et al 2007).

The research philosophy in a study underpins research strategies and methods. The main influence is likely to be the researcher's view of the relationship between knowledge and the process by which it is developed. In research there are two ways of looking at the world. One view sees the world as objective, meaning that there is only a limited number of universal truths and that the truths are numerically measurable (Stevens et al. (2006). The other view as given by Kasi (2009) is that the world is subjective and therefore truth is relative and open to several interpretations. Numeric measurement is not always possible. The question of what is real is answered through the concept of ontology and epistemology. Ontology is the nature of reality (Cooper & Schindler, 2006) and the epistemology can be defined as the relationship between the researcher and the reality (Casarson et al., 2001). The two main dominant ontological and epistemological traditions are positivism and interpretivism with pragmatism warranting a mention due to the nature of its balancing between the two. Pragmatists believe that reality is constantly renegotiated, debated, interpreted, and therefore the best method to use is the one that solves the problem.

The interpretivists view is that reality is relative and can only be understood through subjective interpretation and intervention. This research philosophy adopts more flexible structures which are able to capture human meaning. The goal of the interpretivist in research is to understand and interpret the meaning of behavior. For this researcher motives, meanings and reasons are important (Neuman, 2000). The main disadvantage associated with interpretivism is in the subjective nature of the approach. Data generated by this approach is usually impacted by a researcher's views and values. However, the interpretivist approach has been found to be appropriate in the studies involving cross cultural differences, leadership and ethics. The foresaid subjects can be studied in depth.

According to Bryman and Bell (2003), positivism is an epistemological position which studies social reality and social reasons/motives for behaviour by employing natural sciences' methods. The positivist approach requires the use of the scientific method. The researcher makes an observation about a social behavior, constructs a hypothesis as to the outcome of the observations, and tests the hypothesis and then analyses the results. Positivist belief that this removes the researcher's biases.

In this study the positivist approach was found to be the most suitable. Positivist philosophy premises that knowledge is based on facts and that no abstractions or subjective status of individuals is considered. Positivism thus derives a quantitative perspective which holds that there is an objective reality that can be expressed numerically, with explanatory and predictive power (Neuman, 2006; Creswell 2014). Under this paradigm, knowledge is valid only if it is based on values of reason and facts, gathered through direct observations and experience, measured empirically using quantitative methods and statistical analysis. At the same time, theoretical models can be developed that are generalizable to explain cause and affect relationships (Saunders, et al., 2013). Consequently, problem solving under this approach follows a pattern of formulating hypotheses in which assumptions of social reality are made and hypotheses tested often using quantitative techniques (Stile, 2003; Neuman 2006; Creswell, 2009).

The purpose of this study was to examine the correlation between individual, home and university environmental factors and student attrition levels in private universities in Nairobi, Kenya. Under the positivistic philosophical approach, the researcher set up the hypotheses on the basis of the existing relevant theories. These hypotheses were then tested and confirmed or disapproved by quantitative and statistical methods in order to address the research objectives and meet the research purposes. Thus this research, while appreciating other research philosophies, has leaned towards positivists due to the research objectives and hypothesis as set in chapter one. The research topic required that scientific processes be followed in hypothesizing fundamental laws then deducing the observations so as to determine the truth or falsify the said hypotheses. According to Cacioppo et al. (2004), positivism is suitable in studies involving assessment of phenomena based on conceptual model and application of inferential statistics to test hypotheses. The current study satisfied these requirements.

3.3 Research Methodology and Design

A research methodology is a structure that governs how research is carried out in the context of the adopted research paradigm. There are three widely accepted methodologies according to Creswell and Plano (2007); the qualitative method, the quantitative and the method mixed methods. This research uses the quantitative method. All research methods available have merits, de-merits and their own limitations (Neuman 2006). A research design on the other hand is the plan that is prepared using the research method chosen. It delineates the steps needed to be taken. This section outlines the method the design chosen for the current study.

3.3.1 Quantitative method

Quantitative research approach makes use of hypotheses and detailed variables to form a basis for carrying out surveys, experiments and other kinds of research (Creswell, 2014). Answers to the research queries are usually answered through numerical data. Among the advantages of a quantitative method is that data can be easily collected or is readily available (Onwuegbuzie & Leech 2005). The data analysis process is fairly fast and due to the scientific nature of data collection it is possible to generalize results to the entire population (Creswell, 2014). The current study has used quantitative research approach as the most appropriate for data gathering and interpretation. The aspect of being able to quantify the research problem and objectives through numerical data that can be transformed into usable statistics has made this approach the most suitable for this study. This approach is also the most commonly used method to investigate student attrition. The criticism that the quantitative approach is usually given is that the coverage of study instruments may be too narrow and thus fail to encourage evolving and continuous investigation. This drawback was mitigated by use of appropriate research questions and objectives. This study has supported statistical findings with narratives which have come from the research process.

3.3.2 Qualitative Method

The qualitative method of research is usually used for giving insight into respondents experience (Neuman, 2006). The emphasis on qualitative research process and meaning uses such techniques as, in-depth interviews and participant observation. This method is used when research is interested in variables that are not easy to measure statistically such as human personality characteristics, and other aspects of human behavior such as emotions. The sample used in qualitative research is usually small but dense in data description. Data analysis requires that a researcher look for trends and themes. Thus qualitative approaches include knowledge assertions to gather and develop themes from data (Creswell, 2014). The researcher tries to appreciate some larger reality by examining it in a comprehensive way. The main advantage of qualitative method is that it allows a researcher to examine phenomena in depth and is not limited to rigidly definable variables (Creswell, 2014). This approach has been faulted in that data collection may take a long time as the interview process is often involving. It has been found that respondents may at times need to reorganize information on the questions raised and cases of respondents' memory loss are common. Another weakness of qualitative research is that it may be associated with a researcher's bias, hence reducing the extent to which people may believe the findings of a study (Creswell, 2005). It is also difficult to replicate qualitative studies.

3.3.3 Mixed methods

Mixed methods in research allow for mixing both qualitative and quantitative methods. The basis for using mixed methods are varied but are mainly explained as being a need to expand the study scope and offset weaknesses of using one method alone. The main advantage of using mixed methods is that it can provide practical advantage when working with complex research questions. However, the mixed method can be expensive and time consuming due to the process required to analyze both the qualitative and quantitative parts.

Whereas this study was not a mixed method study it used elements of qualitative findings to support the quantitative data results. In this study data triangulation entailed

the comparison of qualitative data which was gathered from in-depth interviews among the faculty and administrative staff in the private universities and the quantitative data collected from the students. According to O'Donoghue and Punch (2003) triangulation is used when a verification of data is needed from various data sources. In the current study the data sources were from students, university faculty and administrative staff.

3.3.4 Research Design

The study used a researcher developed questionnaire as the data collection instrument. The data was used to assess the relationship between student attrition and factors of individuals, home and university environment. An exploratory design study allowed the determination of the degree of association between the independent and dependent variables. The exploratory design was preferred as it allowed for investigation for the relationship between the variables as well as assessing whether the two variables have a significant statistical relationship (Creswell, 2009). The exploratory design was found appropriate for this study as it offered valuable means of finding out what was happening to the question of student attrition in private universities as well as giving new insight into the problem. There are three ways of conducting an exploratory research. There is searching in literature, talking to experts in their specialized areas and collecting data from groups (O'Donoghue & Punch 2003). The exploratory research intends to explore the research objectives with varying levels of depth but does not intend to offer conclusions. This research design is the most useful in addressing research topics and subjects which have been studied extensively.

Current review of literature shows that the area of student attrition is relatively understudied in Kenya thus making an exploratory design the most appropriate (Verbeek, 2004). The main goal of an exploratory study is to identify the confines of the environment in which the problem's opportunity of interest is likely to be and to find out the salient variables that may be found to be of relevance to the study. The current study used the design by way of using well defined theories and applying them in the area of student attrition in private universities. The main advantage of an exploratory design for this study is that it allowed for cross-sectional study. The design

also allowed for flexibility in the use of telephonic interviews thus adding to the richness of collected data.

The limitation of the exploratory design is that a study is only able to state that there is a relationship between variables but does not conclusively indicate why there is a relationship. At the same time the design is unable to reveal which variable influences the other. Exploration does not give conclusive answers but gives indications of what the answers could be and may ask for a deeper or wider research to be done. It determines whether there is a relationship between the variables but it does not explicitly say whether a change in one variable causes a change in the other variable. This study overcame this limitation by being specific in the study objectives which was to find out the correlation between the independent factors of individual, home and university environment and the depend factor of student attrition. The finding may allow for future studies to build on the study results

3.4. Research Location

The study was conducted among private universities in Nairobi County, Kenya. Private universities in Kenya operate either with a full charter or with interim charter as they await full charter. The universities offer both graduate and undergraduate and programs. The choice of Nairobi as study location is that rural urban migration allows for a heterogeneous population representative of student culture under this study. In addition the study findings in this location can be generalized to other private universities in Kenya. Mairura (2010) observed that Nairobi has the largest concentration of education and research institutions in Kenya and Eastern and Central Africa thus making the study area a suitable choice.

The choice of private universities was also based on the fact that public universities in Kenya are prone to frequent disruptions mainly due to students' unrest. The disruptions admittedly affect and may at times cause delays in students attaining a university degree. However, such disruptions and their consequences do not affect private universities and therefore other factors that result to attrition are likely to emerge with the private university population. Private universities also have large concentration in

and around Nairobi thus offering apt study population. In addition, the choice of private universities included only those universities which were chartered. According to Commission of Higher Education Handbook (2008) every university has to go through a process by which a government or a quality assurance agency evaluates the quality of a higher education institution. The result of this process is usually the awarding of a status of recognition and sometimes a license to operate within a time-limited validity, called accreditation. In Kenya, accreditation means public acceptance and confirmation as evidenced by award of a Charter. This study thus used the premise that chartered private universities would offer continues programs which have been authorized and acceptable to the governing bodies.

3.5 Population of the Study

The population of the study comprised of all private university students in Nairobi County. Nairobi County is the commercial and administrative capital of Kenya and the economic hub for the East African region. The county has the highest concentration of 13 out of the 17 private chartered universities in Kenya (CUE, 2016). The study was therefore carried out in these 13 universities located in Nairobi County.

The population can be defined as the entire set of persons who have been selected to meet inclusion benchmarks as defined by the researcher. Constraints of time and cost may not make it feasible to access all the people in the research population. According to Kothari (2004), a population refers to all items in any field of inquiry and is also known as the 'universe'. Newing (2011) describes a population as the set of sampling units or cases that the researcher is interested in while Burns and Grove (2003) describe population as all the elements that meet the criteria for inclusion in a study. According to Borg and Gall, 2007, population consists of all members of a real or hypothetical set of people events or objects from which a researcher wishes to generalize the results of their research while accessible population consists of all the individuals who realistically could be included in the sample.

The target population comprised of second year students in private universities in Nairobi. The choice of private students was considered appropriate as studies show that most attrition occurs among students in their second year of study (Kift, 2014) when students start spending less time in their academic pursuits as compared to the time spent on studies during the first and third and subsequent years (Schaller 2005; Ellis 2010) and another study showing that if a student can be retained beyond the second year, the probability of success increases in each subsequent year (Tinto, 1999). According to the Commission for University Education there were 23,240 second year students in Nairobi County as shown in Table 3.1. This formed the population in this study.

Table 3.1

Population of Second Year Students in Private Universities in Nairobi County

Private Universities in Nairobi	Male	Female	Total
University of Eastern Africa, Baraton	125	105	230
Catholic University of Eastern Africa	352	331	683
Daystar University	591	421	1012
United States International University	1403	711	2114
Africa Nazarene University	151	168	319
Kenya Methodist University	1862	1241	3103
St. Paul's University	1211	934	2145
Pan Africa Christian University	237	209	446
Strathmore University	324	305	629
Mount Kenya University	4350	2996	7346
Zetech University	345	209	554
Kenya Institute of Professional Studies	120	131	251
KCA University	2230	2178	4408
Total	13301	9939	23240

Source: *Commission for University Education, 2015*

3.6 Sample

Sampling is the selection of a subset of individuals from within a population to yield some knowledge about the whole population, especially for the purposes of making predictions based on statistical inference (Black, 2011). The main advantages of sampling are cost, speed, accuracy and quality of the data (Ader, Mellenbergh & Hand, 2008). A deliberate selection of particular units of the universe constituting a sample which represents the universe is supported by scholars such as Yang & Lu (2001) and Kothari (2004). The sampling process comprises of defining the population, sampling frame, sampling method, sample size and sample plan.

3.6.1 Sample size determination

The sample was drawn from the population of second year students from 13 private universities in Nairobi County. Based on the 23,240 private second year students student, the study used Nassiuma (2000) as a guide of estimating the right sample size among these. Nassiuma (2000) asserts that in most surveys or experiments, a coefficient of variation of at most 30% is usually acceptable while the error margin should be less than or equal to 5%. This study used a coefficient of variation of 20% and a standard error of 1% due to the relatively large size of the target population. The sample size for this study was calculated using the formula as proposed by Nassiuma (2000).

$$S = \frac{NC^2}{C^2+(N-1)e^2} \dots \dots \dots \text{formula (i)}$$

Where;

N- Population size (Population of students)

S- Sample size

C- Coefficient of Variation

e- Error margin

Therefore, based on the information in table 3.1, the appropriate sample size was calculated as:

$$S = \frac{24901(0.2)^2}{0.2^2 + 24900(0.01)^2} \approx 400$$

The above sample size was validated by considering the sample size formula developed by Jackson (2003). In his view, a sufficient number of responses concerning applicable model parameters has to have an empirical support of N:q rule. This rule is applicable when the estimation method results to maximum likelihood. In maximum likelihood estimation, Jackson (2003) suggested that researchers think about minimum sample size in terms of the ratio of cases (N) to the number of model parameters that require statistical estimates (q). An ideal sample size-to-parameters ratio would be an N:q ratio of 20:1. Less ideal would be an N:q ratio of 10:1. As the N:q ratio decreases below 10:1 (such as 5:1), so does the credibility of the results. Therefore, on the basis of this method, the sample size was 380. This was because the number of parameters estimated was 38. This implied that the ratio of the number of responses (sample size)-to-parameters was 10:1. This guaranteed that there was adequate sample size for this study to address the research objectives using SEM analysis. The sample size calculated using the above two formulas were adequate for SEM sample size requirement.

After the sample size was determined using the above formulas, the sampling procedure was done using proportion and stratified sampling. The proportion was applied due to varying numbers of population among the private universities. Besides, stratified sampling was used given that gender could be an important distinguishing factor that needed to be accounted for across universities. In addition sixty students who had dropped out of university were sampled through a referral system. The students were interviewed telephonically. Six members of the university staff comprising both administration and academic were also interviewed. The proportion and stratified sampling procedure are as provided in the Table 3.2.

Table 3.2

Sample distribution

Private Universities in Nairobi	Stratified Sampling		
	Total	Male	Female
	Sample		
University of Eastern Africa, Baraton	4	2	2
Catholic University of Eastern Africa	12	6	6
Daystar University	17	9	8
United States International University	36	18	18
Africa Nazarene University	5	2	3
Kenya Methodist University	53	33	20
St. Paul's University	37	20	17
Pan Africa Christian University	8	5	3
Strathmore University	12	7	5
Mount Kenya University	126	75	51
Zetech University	10	6	4
Kenya Institute of Professional Studies	4	3	1
KCA University	76	40	36
Sample of students	400	226	174
Sample of dropouts	60		
Sample of university Staff	6		
Total Sample	466		

Source: *Compiled by Researcher 2015*

3.7 Description of the Research Instruments

Development of research instruments with which to collect the necessary information to address the research problem is central to research. In social science research the most commonly used research instruments are questionnaires, interview guide, observational form, and standardized tests (Mugenda & Mugenda, 2003). The research

instruments that were used to collect the most important data to test the hypotheses of this study was questionnaire and interview schedule. Questionnaires are commonly used to obtain important information about the population. The items in the questionnaire were developed to test the hypotheses of the study. The questionnaires had both close-ended and open-ended questions. The questionnaire was easy to administer, analyze and allowed for efficient use of time and money.

The interview guide had open-ended questions. The interview was about the faculty perception of the cause of attrition within their environment. It was mainly focused on the faculty view of student satisfaction and attrition levels. The advantages of interview questions was to give respondents freedom of responses and to permit a greater depth of responses and to understand the feeling, hidden motivation, interests, and decisions of the students and managers. The questionnaire was self-administered while the interview guide was researcher administered.

3.8 Validity and Reliability of the Research Instruments

Validity and reliability of instrument in a research study offer a basis for credible research findings. The literature review in this study provided a framework for understanding background, theories and concepts on university student attrition. The research looked at attrition from the standpoint of examination retakes, semester deferment and dropping out. The instruments used were thus developed from existing student attrition theories and literature. The use of researcher constructed instruments dictates that validity and reliability be assessed before commencing credible research (Neuman 2006). Three methods were used in this study to evaluate the validity and reliability of the instruments. Factor analysis and content validity helped develop a valid instrument while Cronbach's alpha assessed the reliability of the instrument

3.8.1 Instrument reliability

Reliability is the measure of the degree an instrument used in research would yield the same results or data after repeated trials (Mugenda, 2008). It means that the scores of an instrument are stable and consistent (Creswell, 2005). Reliability can be more easily

understood by identifying the testing methods for stability and consistency, (Orodho, 2003). Instrument reliability is the level of internal consistency or stability of the measuring device.

The most frequently reported internal consistency estimates are the K-R20 and Cronbach alpha. However, the K-R20 can only be applied if the test items are scored dichotomously (yes or no). Cronbach alpha can also be applied when test items are scored dichotomously, but alpha has the advantage over K-R20 of being applicable when items are weighted (as in an item scored 1 points for a Strongly disagree, 2 point for a Disagree, 3 points for a Neutral, 4 points for a Agree, and 5 points for a strongly agree). Hence, Cronbach alpha is more flexible than K-R20 and is often the appropriate reliability estimate for the perception or attitude testing of this research. Indeed, when scoring of the items is not dichotomous, then the appropriate method of estimating reliability is Cronbach-alpha. Moreover, Ary, Jacobs, and Razavieh (2002) emphasize that if the test items on an instrument are heterogeneous and measuring more than one trait or attitudes, then reliability index is best computed using Cronbach-alpha. Therefore, this study applied Cronbach Alpha.

The cut-off criterion for Cronbach Alpha is suggested by many scholars. Based on Berthoud (2000) view a considered Cronbach Alpha of 0.6 is “good”. Moreover, Nunnally (1974) suggested ≥ 0.7 indicates reliable research instrument while Cohen et al. (2008) suggest that the instrument is acceptable if it is ≥ 0.67 . In this study, reliabilities less than 0.6 were considered poor and improved, but reliability ≥ 0.7 was considered acceptable. Therefore, the recommended alpha coefficient level of ≥ 0.7 was used as a cut-off for this instrument reliability test.

Table 3.3 showed that the result of the reliability test of the research instrument before the data collection was 0.864. This implied that the questionnaire had high reliability. Subsequently, the researcher proceeded to data collection in section 3.8.

Table 3.3

Reliability test

Reliability Statistics		
	Cronbach's Alpha	N of Items
Cronbach's Alpha Based on Standardized Items	.874	20
Cronbach's Alpha Based on attrition items	.725	7
Cronbach's Alpha Based on Individual factor items	.710	13
Cronbach's Alpha Based on University factor items	.713	8
Cronbach's Alpha Based on Home factor items	.702	11

3.8.2 Instrument validity

Validity is the meaningfulness of inferences based on the data obtained (Mugenda, 2008). The validity of the instrument in this study was measured using content validity, construct validity, convergent and discriminant validity. These tests were applied once the model fit tests were done using confirmatory factor analysis. Each of the validity tests instruments is scientifically discussed below.

Content validity is a theoretical concept which focuses on the extent to which the instrument of measurement shows evidence of fairly and comprehensive coverage of the items that it purports to cover (James, 2012). The content validity for this study was assessed using ratings of experts from different universities. These were professionals or experts in education from two private universities namely Strathmore

University and Mount Kenya University as well as one public university, Kenyatta University. The experts were asked whether each item on the survey was important, beneficial but not important and not necessary. The feedback was used to determine which items the experts considered not necessary and these were excluded from the survey instrument. Feedback included also an evaluation of whether the concepts the instrument was trying to measure accurately represented the concept under study. Thereafter, Pearson correlation test was used to evaluate the content validity from the three experts; a correlation coefficient greater than 0.80 indicated that the content validity was acceptable.

Construct validity on the other hand was used to evaluate validity of operationalization of the variables under study. Construct validity refers to whether the operational definition of the variables reflects the theoretical meanings of a concept. The operationalization of the variables of this study was derived from the theories under study. The questionnaire was developed from the concepts of the theories and model(s) used in this study. Therefore, this study may have high validity because Mugenda and Mugenda (2003) opine that if the measurements are consistent with the theoretical expectation, then the data have construct validity.

In addition to the theories, the construct validity was tested using confirmatory factor analysis. Confirmatory Factor Analysis (CFA) is a form of factor analysis, most commonly used in social research. CFA analysis require the researcher to hypothesize, in advance, the number of factors, whether or not these factors are correlated, and which items load onto and reflect these factors. The hypothesized model was based on theory and/or previous analytic research. Therefore, CFA was used to test the construct validity of this study using Lamda, critical ratio and coefficient of termination. To be valid, Lamda should be greater than 0.4, critical ratio should be greater than 1.96 or less than -1.96, while the coefficient of determination should be greater than 0.25 (Kline, 2011). The above tests were applied when the measurement model fit test was done using absolute, incremental and parsimony fit indices indicated earlier in the chapter.

Additionally, Zikmund et al. (2010) opine that internal validity exists when the variance in the dependent variable is only due to the experimental variables. Stringer (2008) posits that internal validity can be verified by statistical techniques. Likewise, Gujarati (1995) suggests that internal validity can be assessed using pairwise correlation, auxiliary regression, variance inflation factors, Goldfeld-quandt test, and Durbin Watson statistics. However, these internal validity tests are not important for structural equation modeling validity test except the tools for heteroscedasticity, autocorrelation tests, and overall model fit indices.

The heteroscedasticity and autocorrelation were controlled using the modification indices in AMOS 21 statistical package. However, the overall model fit were tested using absolute fit indices, incremental fit indices and parsimony fit indices. The statistical techniques that can evaluate overall model fit in SEM are the chi-square test, Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit (GFI), Adjusted Goodness-of-Fit statistic (AGFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Root Mean Square Residual (RMSR), Standardized Root Mean Square Residual (SRMR) among others.

With regards to which indices should be reported, it was not realistic to include every index included in the program's output as it would burden both a reader and a reviewer. The statistical techniques for overall model fit for this study were selected using those indices which are not sensitive to small sample size.

Adjusted chi-square (χ^2/df) which is developed by Wheaton, Muthen, Alwin, and Summers (1977) minimizes the impact of sample size on the model chi-square fit. The recommended range for adjusted chi-square is from as high as 5 (Wheaton, Muthen, Alwin, & Summers 1977) to as low as 2. Besides, CFI developed by Hu & Bentler (1999) which takes into account the sample size that performs well even when the sample size is small. A cut-off criterion of $CFI \geq 0.90$ was initially advanced but recent studies have shown that a value greater than 0.95 is needed in order to ensure that unspecified models are not accepted (Hu & Bentler, 1999). Moreover, IFI is not sensitive to small sample size. Therefore, CMIN/DF, NFI, RFI, IFI, TLI, CFI and RMSEA were used to test the overall model fit. These indices have been chosen over

the other indices because they are the most insensitive to sample size, model misspecification, and parameter estimates.

External validity was also considered in this study. External validity is the accuracy with which experimental results can be generalized beyond the experimental subjects. Bryman and Bell (2003) posit that it is the issues of how people or organizations are selected to participate in research. External validity is increased when the subjects comprising the sample truly represents the population of interest and when the results extends to other organizations. This study used almost all the population of the private universities. Besides, the study was based on theories and the variables were macro and micro. Therefore, it was valid because of all the above justifications and it is hoped that the results of this study represent all the private universities across different areas due to all the reliability and validity tests discussed above.

3.9 Data Collection Procedure

The actual data collection happened in sequence of steps. The first step was to get the necessary approval from National Commission for Science and Technology Innovation (NACOSTI). Permission was thereafter sought from each university selected for the study. Two of the universities required seeing and interacting with the study questionnaire before permission could be given. There were some delays in getting consent from three other universities. In a bid to save on time, the research on three of the universities was conducted on the oral authority of the Deputy Vice chancellor of two of the universities and from registrar in the other university.

After the necessary approvals different ways were used to reach the various groups of respondents. The study was planned in such a way that, data was collected between April- June 2015 when the sampled university students were in session. With the assistance of the university administration, data collection sessions were organized in a way that they would take place when there were no formal lessons going on. The questionnaires were issued to the respondents through informal self-introduction.

The individual respondents comprising of faculty and university administration staff were identified using internal informants. In-depth interview schedules were used during office hours. Telephone interviews for dropped out students were carried out at different times of the day from 8 a.m. to 6.30 p.m. during the period April –June 2015.

3.10 Data Processing and Analysis

Bryman and Bell (2003) defined data analysis as the process of inspecting, cleaning, transforming, modeling data with the goal of discovering useful information, suggesting conclusion, and supporting decision-making. They further explain that data analysis involves three sub-processes; data reduction, data display and conclusion drawing from interpretation of the findings.

Normally, the raw data collected is extensive and the information from questionnaires and interviews does not easily answer the research questions or meet the research objectives. Zikmund et al. (2010) suggested that data analysis needs to apply reasoning in order to understand the data that has been gathered with the aim of determining consistent patterns and summarizing the relevant details revealed in the investigation. The data in the current study was logically and sequentially analyzed. The data analyzed was presented in appropriate tables, charts and graphs with supported explanatory information. Initially preliminary and descriptive statistical analyses was performed. This included analysis of demographic data and analysis of examination retakes, semester deferments and drop out students. The data in this study were analyzed using maximum likelihood estimates (MLE).

The maximum likelihood estimate is a statistical approach to parameter estimation and inference. The underlying insight in MLE is that the observed sample of observation contains useful information about the likely values of the parameters in the study. According to Green (1994) MLE is useful in that its estimates are attractive in large samples (asymptotic) properties. The properties range from consistency, the ability to facilitate hypothesis testing and constructs and the presence of the minimum variance achievable by a construct estimator. Under the maximum likelihood estimates, data has to be normally distributed.

3.11 Structural Equation Models

Structural Equation Models (SEMs) are multivariate regression models that can address the collective effects of one variable over the other using constructs. Unlike the more traditional multivariate linear model the response variables in one regression equation in SEM may appear as a predictor in another equation. In this study examination retakes was used as both latent exogenous and as exogenous variable. Variables in SEM may influence one-another either directly or through other variables as intermediaries. Lie and Wu (2007) are of the view that SEM is popular among social scientist due to its generalization and flexibility. SEM has thus found its way as a statistical analysis for researchers across disciplines and increasingly.

Researchers such as Hooper et al (2008) express that SEM as a general term has been used to evaluate the validity of substantive theories with empirical data. Statistically, it represents an extension of General Linear Modeling (GLM) procedures, such as the ANOVA and multiple regression analysis. It is also used to evaluate the relationship among the latent constructs and indicators. Some of the main advantages of SEM over GLM are that it can be used to study the relationships among latent constructs that are indicated by multiple measures (Joreskog, Sorbom, Toit, & Toit, 1999). For example in this study three measures were used to measure student attrition as the endogenous latent variable. SEM is also used to evaluate relationship among the latent constructs and indicators.

The constructs or latent variables of this study were ξ_1 for home factors, ξ_2 for individual factors, ξ_3 for university environmental factors and η_1 was for attrition. The indicators for each factor are indicated as follows:

- Parental education level (PEL)
- Parental support (PS)
- Financial support (FS)
- Parental expectation (PE)
- Ability to cope with stress (ACS)
- Self-efficacy (SE)
- Faculty support (FaS)
- Choice of right (CRP) program
- Peer support (PeS)
- Involvement in non-academic activities (INA)
- Adequacy of facilities (AF)
- Examination retakes (ER)
- Semester/academic year deferment (SAD)
- Drop Out (DO)

3.12 Structural Equation Model Specification

Specification of a model can be described either through a series of equations or through a diagram using a set of more less standardized graphical symbols. The depiction of the model in this study was done through both diagram and equations. There are different statistical techniques that are used to develop measurement model (Davis, 1993). The statistical techniques, such as exploratory factor analysis or confirmatory factor analysis have been widely used to examine the number of latent constructs underlying the observed responses and to evaluate the adequacy of the individual variables for the latent constructs they are supposed to measure. In this study, confirmatory factor analysis was used to evaluate the measurement model in the SEM due to the following reasons.

Confirmatory factor analysis differ from exploratory factor analysis in that factor structures are hypothesized a priori and verified empirically rather than derived from data (Byrne, 1998). Exploratory factor analysis often allows all indicators to load on

all factors and does not permit correlated residuals. However, in this study, the constructs are not loaded to all indicators because the study was based on the upper echelon theory. That is why confirmatory factor analysis was done using AMOS. Additionally, measurement and structural models are combined for further analysis. The combination of confirmatory factor analysis models with structural analysis model on the latent constructs represents the general structural equation modeling (Lie & Wu, 2007). General Structural Equation Model (GSEM) includes unobservable exogenous and endogenous variables and it also includes observed variables (indicators). The GSEMs are sometimes called LISREL models, after the first widely available computer program capable of estimating this class of models (Joreskog, 1973). LISREL is acronym for linear structural relations. AMOS was applied to analyze the relation among the indicators and constructs, in the model. AMOS is one of the efficient user friendly software packages to determine the relationships among student attrition, individual factors home factors and university environmental factors.

In figure 3.1 the structural model related latent endogenous variable to latent exogenous variables to one-another. Furthermore, the measurement models related latent variables to their indicators. It also relates the observed variables to their error terms. The following concept associated with Joreskog's (1973) LISREL model for the path diagram was used for this study.

Table 3.4:

Notation for the LISREL model

Symbol	Meaning
N	Number of observation
M	Number of latent endogenous variables
N	Number of latent exogenous variables
P	Number of indicators of latent endogenous variables
Q	Number of indicators of latent exogenous variables
$\eta_i (m \times 1)$	Latent endogenous variables (for observation i)
$\xi_j (n \times 1)$	Latent exogenous variables
$\zeta_i (m \times 1)$	Structural disturbances (errors in equations)
$B_{(m \times m)}$	Structural parameters relating latent endogenous variables
$\Gamma_{(m \times n)}$	Structural parameters relating latent endogenous to exogenous variables
$y_i (p \times 1)$	Indicators of latent endogenous variables
$x_i (q \times 1)$	Indicators of latent exogenous variables
$\epsilon_i (p \times 1)$	Measurement of errors in endogenous indicators
$\delta_i (q \times 1)$	Measurement of errors in exogenous indicators
$\Lambda_y (p \times m)$	Factor loadings relating indicators to latent endogenous variables
$\Lambda_x (q \times n)$	Factor loadings relating indicators to latent exogenous variables
$\Phi_{(n \times n)}$	Covariance among latent exogenous variables
$\Psi_{(m \times m)}$	Covariance among structural disturbances
$\Theta_c (p \times p)$	Covariance among measurement errors
$\Theta_\delta (q \times q)$	Covariance among measurement errors
$\Sigma_{(p+q) \times (p+q)}$	Covariance among observed (indicators) variables

The order of each vector or matrix is shown in parentheses next to its symbol.

From fig. 3.1 below the structural equation models for this study were derived from three equations. The first equation is for the structural model while the second and third equations are for the measurement models.

$$\eta_i(m \times 1) = \Gamma(m \times n) \xi_i(n \times 1) + \zeta_i(m \times 1) \dots\dots\dots 1$$

Where η is a $m \times 1$ vector of endogenous variables and where it is assumed that the $m \times 1$ vector ζ of error terms has zero mean and covariance matrix ψ , and $\text{cov}(\xi, \zeta)$ is zero.

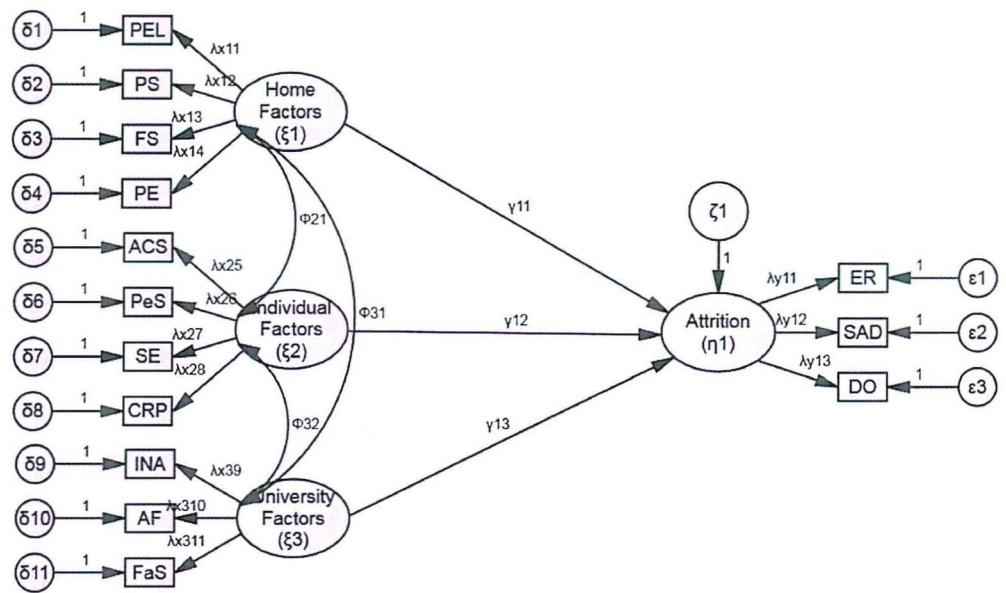


Fig. 3.1 Structural Equation Model (SEM) (adopted from Lie and Wu (2007 and Kline, 2011))

Equation two and three show measurement models for the p endogenous observed variables represented by the vector y , and the exogenous observed variables represented in the vector x . They relate the observed (manifest) variables to the underlying factors (latent variables) and are equated respectively as follows;

$$Y_{i(p \times 1)} = \Lambda_{Y(m \times p)} \eta_{i(m \times 1)} + \epsilon_{i(p \times 1)} \dots\dots\dots 2$$

where $E(\epsilon) = 0$, $Cov(\epsilon) = \Theta$

$$X_{i(m \times 1)} = \Lambda_{X(q \times 1)} \xi_{i(n \times q)} + \delta_{i(q \times 1)} \dots\dots\dots 3$$

Structural disturbances (errors of equations) are represented by ζ 's while the errors of the measurement models of exogenous and endogenous variables are represented by δ and ϵ respectively.

Directly observed variables are enclosed in rectangular box while the unobserved variables are enclosed in ellipses and circles. The unobserved variables are latent endogenous and exogenous variables and disturbances or error terms. The latent variables are enclosed in ellipses while the errors are enclosed in circles. Furthermore, the directed or single-headed arrows represent structural parameters (causal relationship) while the bidirectional or double-headed arrows represent non-causal covariance between latent exogenous variables.

The Greek lambda (λ 's) represent regression coefficients (also called factor loadings) relating observable indicators to latent variables. The subscript Y in λ_Y indicates that the factor loadings in this model pertain to indicator of latent endogenous variables. The subscript X in λ_X indicates that the regression coefficients in this model pertain to indicator of latent exogenous variables.

The Greek gamma (γ 's) are structural parameters relating the latent endogenous variables to latent exogenous variables. The Greek zeta (ζ) is called structural disturbances or errors in equations. They play a role analogous to the error in a single equation regression model. The different disturbances should be independent of one-another to avoid autocorrelation in the regression models.

3.13 Ethical Issues

It is necessary that research be guided by ethical actions always to ensure that participants do not suffer harm in any way. The current research incorporated ethical considerations.

The researcher sought authority to conduct the study from Strathmore University which in turn helped in acquiring a research permit from the National Council of Science, Technology and Innovation followed by consent from the administration of the Universities involved. This was then followed by identification of research participants. In order to draw a sample, consent of the participants was obtained. From there on, data collection commenced using qualified research assistants

Before going into the field the researcher identified strategic people to take charge of data collection and to conduct the necessary interviews. The people identified included a field supervisor and statistician. The researcher sought the help of key administrators within the universities to assist with the identification of second year students.

As the research was non-experimental, the respondents were not exposed to any anticipated harm. However the principle of charity was applied where all participants were treated equally and fairly. The participants were informed that they could get out of the research at any time if they felt uncomfortable while answering the questionnaire without any explanation.

Respect for people was applied by allowing respondents to choose readily whether they wanted to take part in the study or not. Information regarding the research was given and an opportunity to participate or not was availed. All participants were given the information that there would be no payment for taking part in the research. The participants were requested to indicate whether they wished to know the results of the study or not.

Confidentiality for all participants was ensured by attaching numerical codes to the questionnaires. The interview guides were also treated in the same way. The questionnaires were placed in the custody of the researcher to be stored until the expiry of five years when they would be destroyed.

A consent and respondent's rights form were attached to each questionnaire. The forms were explained to all participants before administering the questionnaire. The consent form contained information for the participants about the research and their rights as participants, including their right to privacy and their ability to withdraw from the study at any point.

Safeguarding confidentiality was done by instructing respondents not to put any kind of identifying information on the answer sheets. Consent forms were filed in a detached folder to avoid them being linked to questionnaires. In addition, aliases were used to ensure privacy of participants. The aliases were also used when referring to data collected from participants.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

The main objective of this study was to examine the relationship of individual factors, home factors and university environmental factors and student attrition in private universities in Nairobi county Kenya. The study also evaluated the current levels of student attrition by looking at examination repeats, semester deferments and drop out numbers. In order to meet the study objectives this chapter presents the analyses of data and empirical results based on both descriptive and inferential statistics based on the analysis of Structural Equation Modeling (SEM).

The SEM estimated the relationship between latent exogenous (individual, home and university environmental) factors and latent endogenous (attrition level) factors for the three objectives of the study. SEM was used to analyze the covariance between exogenous variables. In addition it investigated the link between the latent and manifest variables. However, the current level of student attrition was analyzed using descriptive statistics due to the nature of the study data.

This chapter presents the results of the study, interpretation and discussion in line with the stated objectives and the hypothesis. Specifically the chapter is organized into eight parts. The first section presents the response rate, while the second one provides demographics empirical results. The third up to sixth parts presents findings on the determinants of student attrition. The seventh part presents current level of student attrition while the eighth part discusses SEM. The final part is the chapter summary.

4.2 Response rate

The study was carried out in thirteen (13) universities all located in Nairobi County. Most of the respondents were from Zetech University 45 (12%) followed closely by KeMU and Daystar university with eleven percent (11%) each. The distribution of the

university participation is as shown in table 4.1. The figures of the responding universities show a well-distributed sample as shown by the university population figures.

Data was captured through questionnaires administered to the students from April to June 2015. In total 387 questionnaires were completed. From the study sample of 400, the response rate of ninety seven percent (97%) for this survey was considered adequate and the 387 returned questionnaires met the SEM threshold of 380. This (380 survey requirement) was based on Jackson (2003) who suggested a ratio of $n:q$. This guarantees that there was adequate sample size for this study to address the research objectives using SEM analysis. The researcher also interviewed sixty students who had dropped out of university. All sixty interviews from students who had dropped out of university which were carried out on phone were transcribed for analysis.

Table 4.1

Return Rate by University

University	No. of students	Percentage
1. Zetech University	45	12 %
2. Daystar	41	11%
3. Kenya Methodist University	42	11%
4. Kenya College of Accountancy University	39	10%
5. Mount Kenya university	35	9%
6. St. Paul's University	26	7%
7. University of Eastern Africa	19	5%
8. Catholic University of East Africa	20	5%
9. United States International University	21	5%
10. Pan African Christian University	20	5%
11. Strathmore University	19	5%
12. African Nazarene	12	3%
13. Kenya Institute of Professional Studies University	14	3%
Effective Response rate	387	96.75%

A further six interviews were carried among university staff. The staff involved were departmental manager, a dean of students a department administrator and lecturers.

4.3 Demographic Empirical Results

The demographic data was captured for all respondents in the quantitative survey among students who were termed as continuing students and this information is as captured in Table 4.2 below.

Table 4.2

Demographic Data

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	228	59	59	61
	Female	150	39	39	100
	No response	9	2	2	2
Age(Years)	18-20	93	24.0	24.0	24.8
	21-25	227	58.7	58.7	83.5
	26-30	53	13.7	13.7	97.2
	31-35	9	2.3	2.3	99.5
	35+	2	.5	.5	100.0
	No response	3	.8	.8	.8
Mothers Education Level	No Schooling	16	4.1	4.1	5.2
	Primary School	25	6.5	6.5	11.6
	Secondary School	81	20.9	20.9	32.6
	Certificate/ Diploma	139	35.9	35.9	68.5
	University	122	31.5	31.5	100.0
	No response	4	1.0	1.0	1.0
Fathers Education Level	No Schooling	9	2.3	2.3	5.9
	Primary School	13	3.4	3.4	9.3
	Secondary School	49	12.7	12.7	22.0
	Certificate/ Diploma	132	34.1	34.1	56.1
	University	170	43.9	43.9	100.0
	No response	14	3.6	3.6	3.6
Family income (Ksh)	Less 100,000	209	54.0	54.0	54.0
	100000-300000	151	39.0	39.0	93.0
	Above 300,000	27	7.0	7.0	100.0

4.3.1 Gender distribution

The population addressed in this quantitative study comprised of male and female students as shown below. This information that was captured through the first part of the questionnaires and included gender distribution which is presented in figure 4.1 below.

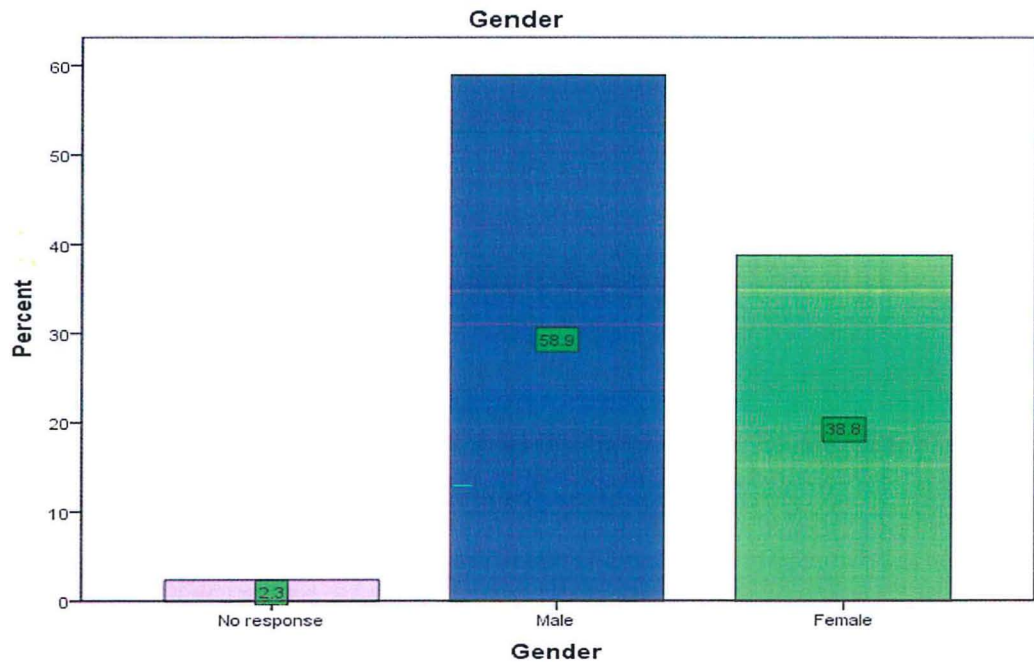


Figure 4.1: Distribution of Respondents by Gender

From the participating respondents fifty nine percent (59%) were male and thirty nine percent (39%) were female. The distribution is deemed as the representative of gender distribution of the target population of university students in private universities in Kenya. This is supported by a survey by the United Nations Education and Cultural Organization (2011) that showed that there were 59% boys transitioning to university as compared to 41% girls. It is these high school statistics which translate into university statistics.

4.3.2 Age distribution

The age of respondents was collected in the first part of the questionnaire. The ages of the students ranged from eighteen (18) to thirty five plus (35 +) years. The age distribution is presented in figure 4.2.

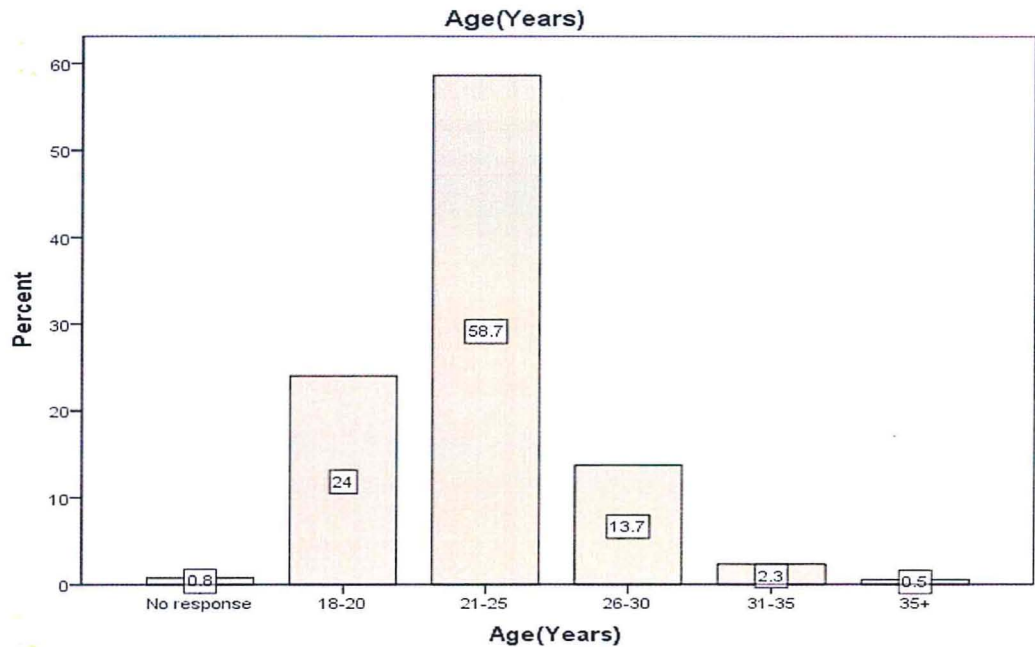


Figure 4.2: Distribution of Respondents by Age

Figure 4.2 shows that the large proportions of the respondents were between twenty one (21) years and twenty five (25) years with percentage frequency of fifty nine (59). Twenty four percent (24%) of the students were between eighteen (18) years and twenty (20) years with fourteen percent (14%) being between twenty six (26) years and thirty (30) years. The rest were aged thirty one and above while 0.8% did not disclose their age.

Further analysis of the results revealed that in the universities under study there were more males between eighteen (18) and thirty years (30) years than females, whereas females were mostly reported in the older age group of thirty five (35) and above.

This distribution of the mean age of students may be explained by the provision of the Kenya schools system. The system provides that a student would more likely be between eighteen (18) and twenty one (21) years by the time he/she joins university. Due to the target population of this study being students in their second year of university study the average age of between twenty one (21) and twenty five (25) years was within the norms. The small number of students (fourteen percent 14%) who were between twenty five (25) and thirty (30) years could be as result of delayed school entrance. The lower and gradually declining number of students older than twenty five years (25) could be explained by the mentioned Kenyan academic system where the predominant age is lower thus allowing for only a small percentage in the older age bracket (United Nations Education and Cultural Organization 2011).

4.4 Structural Equation Modeling Analysis

The current study has investigated variables which are derived from theories and literature. The variables include both observed and unobserved variables. The unobservable variables are known as latent factors. In this study the latent factors are individual factors, home factors and university environment factors. The individual factors are actualized through self-efficacy, peers support, choice of right program and ability to cope with stress. The home factors are assessed by looking at parental education levels, parental support and financial support. University environment factors are seen through faculty student interaction, adequacy of facilities and involvement in non-academic activities. Figure 3.1 of chapter three shows the relationship among the variables to the endogenous factors (student attrition). The endogenous factors was assessed through examination retakes, semester deferment and dropping out of university. The SEM was used to estimate the relationship between latent exogenous factors (home factors, individual factors and university environmental factors) and endogenous factor (attrition).

Before employing the SEM, preliminary analysis was conducted. Preliminary analysis is the initial process that provides a platform for further analysis to address the research objectives under study. Therefore, prior to application of SEM analysis, the data were subjected to diagnostic analysis to ascertain the appropriateness of its underlying

parametric characteristics for this statistical application. This entailed the parametric tests of normality and confirmatory factor analysis.

4.4.1 Normality test

An assessment of the normality of data is a prerequisite for many statistical analyses such as SEM. A normality test uses statistical processes to determine if a sample fits into a normal distribution. This is because normality is an underlying assumption in parametric testing, especially in maximum likelihood estimates. Normality can be tested either graphically (using visual inspection), numerically (using statistical tests) or both. However, statistical tests are better than the visual inspection because they make for objective judgment of normality. As a result, this study used statistical tests to check normality.

In this study Shapiro-Wilk test was used to test normality. The Shapiro-Wilk test employs the null hypothesis principle to check whether a sample came from a normally distributed population (Kline, 2011). Thus if the p value is less than the chosen alpha level the null hypothesis is rejected; the basis of this test in the current study, the calculated P-value as shown in table 4.3 was greater than 0.05. Therefore, on the basis of Shapiro-Wilk test, the data was normally distributed because the P-value above meets the threshold criteria (0.05). The skewness and kurtosis of the data was also analyzed. The importance of showing skewness and *kurtotic* properties is that statistical analysis requires that the characteristics and variability of data be set. Among characteristics of data is skewness and kurtosis. Skewness is the lack of symmetry in a normal distribution set while kurtosis is the measure of whether data are heavy tailed or lightly tailed in a normal distribution. In a normal distribution skewness is zero while kurtosis for a standard normal distribution is 3. In the current study Skewness and Kurtosis lies within -1.96 and 1.96 and hence, the data is a little skewed and kurtotic, for both dependent and independent variable, but it does not differ significantly from normality. Therefore, the data is approximately normally distributed, in terms of skewness and kurtosis.

Table 4.3

Tests of Normality

	Shapiro-Wilk Test		
	Statistic	Df	Significance
PEL	.80	387	.10
PS	.79	387	.10
FS	.81	387	.12
PE	.79	387	.10
ACS	.80	387	.10
PeS	.79	387	.10
SE	.81	387	.10
CRP	.80	387	.10
INA	.91	387	.20
AF	.87	387	.14
FaS	.85	387	.13
ER	.78	387	.09
SAD	.81	387	.11
DO	.85	387	.12

n=387; p>.05

In practice, normality test is not enough for structural equation modeling analysis unless the data is further analyzed for measurement models test using confirmatory factor analysis. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) are similar techniques. However in EFA data simply explored and provides information about the numbers of factors required to replace the data. In EFA all measured variables are related to every latent variable. On the other hand CFA a researcher is able to specify the number of factors required in the data and which measure variable is related to which latent variable. CFA is employed when the study is based on a theory or theories or models and may be used to confirm a theory. The

current study is based on theories and therefor CFA was statistically tested and is critically discussed below.

4.4.2 Confirmatory factor analysis test

Confirmatory Factor Analysis (CFA) is a special form of factor analysis, most commonly used in social research (Kline, 2011). It is a statistical technique used to verify the factor structure of a set of observed variables or it tests the hypothesis that a relationship between observed variables and their underlying latent constructs exists.

The CFA starts by testing whether the data fits a hypothesized measurement model or the opposite. Thereafter, this tool helps to identify which constructs and manifest variables should be retained and removed for further SEM analysis. The CFA tests help to retain the significant indicators and to remove the insignificant manifest variables for further analysis using SEM. Furthermore, the CFA test helps to determine whether the latent exogenous construct or factors are measuring the same thing in the hypothesized exogenous measurement model. The hypothesized measurement model of this study was developed from theories and models used in this study and from previous empirical researches.

Table 4.4

Covariance and Variance for CFA

Covariances and Squared Multiple Correlations (SMC) for the CFA			Estimate	S.E.	C.R.	P
Home_Factors	<-->	Individual_Factors	.51	.04	13.58	***
Home_Factors	<-->	University_Factors	-.03	.02	-1.79	.07
Individual_Factors	<-->	University_Factors	-.02	.02	-1.44	.15
e4	<-->	e8	.58	.04	13.5	***
e6	<-->	e7	.04	.01	3.66	***
e7	<-->	e8	.02	.01	2.98	.00
e3	<-->	e7	.43	.04	11.76	***

e2 <--> e6 .51 .04 12.49 ***

Variances for the CFA

	Estimate	S.E.	C.R.	P	Label
Home_Factors	.43	.22	1.97	.05	
Individual_Factors	.62	.08	8.12	***	
University_Factors	.09	.05	1.82	.07	
e1	.35	.22	1.62	.11	
e2	.66	.05	13.93	***	
e3	.61	.04	13.94	***	
e4	.63	.05	13.91	***	
e5	-.08	.07	-1.28	.20	
e6	.59	.04	14.04	***	
e7	.57	.04	14.14	***	
e8	.61	.04	13.93	***	
e9	1.14	.09	12.80	***	
e10	.57	.14	4.02	***	
e11	.61	.08	7.84	***	

Note- parameter prescribed at e=1 for latent variables (SE –scaler estimates; CR Critical Ratio;

CFA is frequently used as a first step to assess the proposed measurement model in a SEM. Many of the rules of interpretation regarding assessment of model fit and model modification in SEM apply equally to CFA. In some measurement models, modification indices were used to improve the model fit (Table 4.5). Modification indices show the improvement in model fit if a particular coefficient were to become unconstrained. Then, the model fit was tested statistically using absolute fit indices, incremental fit indices and parsimony fit index such as CMIN/DF, GFI, AGFI, NFI, RFI, IFI, TLI, CFI, and RMSEA.

The data fitness to the models are presented below.

Table 4.5

Latent Exogenous Measurement Model Fit

Model	NPAR	CMIN	D	P	CMIN/DF
Default model	54	395.626	98	.000	4.037
Saturated model	152	.000	0		
Independence model	16	4284.577	136	.000	31.504
Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.939	.877	.959	.902	.957
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.023	.115	.132	.000	
Independence model	.277	.270	.284	.000	

n=387, NFI, IFI, TLI and CFI>.90

From the results shown in table 4.5 the adjusted chi-square validated that the data fit the measurement model because CMIN/DF is between 2 and 5. Likewise, the values of NFI, IFI, TLI and CFI are greater than threshold, which is 0.90. Therefore, the data is well fitted to the latent exogenous measurement model. Additionally, the results in Table 4.5 depicted that the adjusted chi-square validated the fact that the data fit the latent endogenous measurement model. Similarly, the values of NFI, RFI, IFI, TLI and CFI are greater than the cut-off criterion of 0.90.

Table 4.6

Latent Endogenous Measurement Model Fit

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	25.000	5	.000	5.00
Saturated model	20	.000	0		
Independence model	10	529.097	10	.000	52.910
Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.953	.905	.962	.923	.961
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.071	.063	.141	.014	
Independence model	.361	.335	.388	.000	

N=387, $p \leq .690$

Further, the correlations among the constructs were analyzed to assess whether the constructs were measuring the same thing. If the correlation between the constructs was $\geq .90$, then the two constructs were deemed to be measuring the same thing in which case the constructs were merged and assessed as one construct. However, if the correlation between the constructs was $\leq .90$, the constructs were deemed to be measuring different things and therefore the constructs were treated individually or differently when utilized to address the research objectives. The association in Table 4.6 revealed that the correlation among the constructs was $\leq .690$. Hence, the four constructs are different and therefore, the constructs were retained as independent for further analysis using SEM.

Table 4.7

Correlations

			Estimate
Home Factor	<-->	Individual Factor	.240
University Factor	<-->	Home Factor	-.249
University Factor	<-->	Individual Factor	-.104

N=387, P<.05

After the analysis of model fit test and correlation tests among the constructs, regression weights for the measurement models were interpreted using the unstandardized regression. This is because the standardized regression does not have its own standard errors rather it uses the standard error of unstandardized regression. As presented in table 4.7, all the manifest variables were significant for the latent exogenous measurement model because the P-values were less than the critical value, which is 0.05. Additionally, the critical ratios were greater than the absolute value of ± 1.96 . Therefore, all the manifest variables were significantly represented within the latent exogenous variables.

Table 4.8

Regression weights for measurement model

Latent Exogenous Measurement Model			Unstandardized Regression				Standard Regression
			Estimate	S.E.	C.R.	P	
PEL	<---	Home_Factors	1.00				.60
PS	<---	Home_Factors	.09	.04	2.27	.04	.06
FS	<---	Home_Factors	.10	.04	2.30	.03	.07
PE	<---	Home_Factors	.05	.02	2.45	.01	.03
ACS	<---	Individual_Factors	1.00				.98
PeS	<---	Individual_Factors	.12	.04	2.80	.01	.12
SE	<---	Individual_Factors	.11	.05	2.43	.02	.12
CRP	<---	Individual_Factors	.06	.03	2.30	.03	.03
INA	<---	University_Factors	1.00				.27
AF	<---	University_Factors	2.12	.78	2.73	.01	.64
FaS	<---	University_Factors	1.45	.46	3.17	.00	.98

Note- parameter prescribed at e=1 for latent variables (SE –scaler estimates; CR Critical Ratio;

Further, square multiple correlations were analyzed to assess the extent to which the dependent variable was explained by the independent variables. The threshold for the square multiple correlations was computed as 20%. This further helped to identify which manifest variables would be retained for further analysis. Table 4.8 showed that

all the manifest variables were statistically significant except Ability to cope with Stress (Y5). Therefore, these manifest variables were set aside during further analysis.

Table 4.9

Squared Multiple Correlations

	Estimate
FaS	.97
AF	.99
INA	.57
CRP	.20
SE	.31
PeS	.42
ACS	.96
PE	.25
FS	.36
PS	.35
PEL	.76

Note- parameter prescribed at $e=1$ for latent variables (SE –scaler estimates; CR Critical Ratio;

After all the above analysis, data was validated for further analysis using structural equation modeling to address the research objectives. Hence, the data was subjected to structural equation model fit before estimating the regression weights between latent exogenous and endogenous variables.

4.4.3 Structural equation model fit test

Evaluation of the model is concerned with the assessment of the overall fit of the model to the data. The goodness of fit to the whole model may be judged by four measures of overall fit; Wheaton et al's (1997) chi-square, normal fit index (NFI), root mean square error of approximation (RMSEA) and comparative fit index (CFI). Chi-square is the customary measure for estimating the overall model fit. It assessed the magnitude of the discrepancy between the sample and the fitted covariance. According to Barret (2007) a good fit would provide in an insignificant result at .05 threshold. Due to the inherent problem of chi-square being sensitive to sample size the current study chose to use Wheaton *et al's* model as it gives the minimum impact on sample size. The model allows for impact of as low as 5 and as high as 7 (Wheaton *et al* 1997). RMSEA is a model fit statistics which shows how well the model with chosen parameter estimates fit with a population covariance. This statistics has been acknowledged as being 'one of the most informative fit indices' (Hu & Bentler, 1999) because it is sensitive to the quantity of estimated parameters in the model. A cut off value of .06 is generally considered good. CFI on the other hand assumes that all latent variables are correlated and compares the sample of covariance. This statistic is usually included in all SEM models because it is one of the measures that is not affected by the sample size (Hooper, Coughan & Mulley 2008). NFI usually appears as the first in SEM analysis models such as LISREL. This statistic assesses the model by comparing calculated test statistics of the model to the value of the null model. The acceptable range for this statistic lies between 0 and 1.

Based on the overall model fit test indices in Table 4.10 the study did not have model fit problem because the CMIN/DF lay between 2 and 5 while the values of NFI, RFI, IFI, TLI and CFI were greater than 0.90 whereas, RMSEA was less than 0.08.

Therefore, the data fit the overall model very well as depicted in table in Table 4.10 below.

Table 4.10
Structural Equation Model Fit Tests

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	70	754.08	160	.000	4.713
Saturated model	230	.000	0		
Independence model	20	5083.468	210	.000	24.207
Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.920	.864	.947	.907	.945
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	.039	.102	.116	.000	
Independence model	.241	.236	.247	.000	

$2 < \text{CMIN/DF} \leq 5$; NFI , RFI , IFI , TLI and $\text{CFI} > 0.90$ whereas; $\text{RMSEA} < 0.08$

In addition to the structural equation model fit test, the square multiple correlations were analyzed. Multiple correlations show how well a given variable can be predicated using a linear function of a set of other variables. In this study the cut-off criterion for square multiple correlations were ≥ 0.20 . The results in Table 4.11 revealed that the square multiple correlations were ≥ 0.20 . These results reveal that that the variation in endogenous variable was significantly accounted by the exogenous variables. This validated that the exogenous variables were the right measure of endogenous variables.

Table 4.4

Square Multiple Correlation

	Estimate
Attrition	.33
DO	.58
SAD	.22
ER	.33
FaS	.30
AF	.33
INA	.26
CRP	.30
SE	.41
PeS	.52
ACS	.96
PE	.24
FS	.50
PS	.40
PEL	.35

N=387, $R^2 \geq 0.20$

The model also requires the researcher to take care of autocorrelations. Autocorrelation takes into consideration the current value of a variable as well as its past values. Autocorrelation relates to statistical tests by reducing the number of independent observations where future values depend on current and past values. The autocorrelation in this study was resolved using the modification indices by drawing a covariance between the disturbances of what is computed under the measurement model fit. As observed previously both the measurement model and structural model were over identified as presented in Chapter three. The study therefore ran SEM analysis in order to clarify the nature of the relationship and to assess the significance between latent endogenous factor and the latent exogenous factors. This was done using the regression model developed in Chapter 3.

4.5 Relationship between latent exogenous variables and latent endogenous variables

In the last step of SEM analysis, relationships between latent exogenous variables and latent endogenous variables were interpreted using unstandardized regression weights at 5% level of significance from Table 4.12. The interpretation is the same as the factor loading in measurement model above except SEM mainly focuses on the relationship between constructs. The results are presented in Table 4.12 below and the effect of attrition on each of the factors under study is presented thereafter.

Table 4.12

Regression weights

			Unstandardized Regression				Standardized Regression
			Estimate	S.E.	C.R.	P	Estimate
Attrition	<---	Home_Factors	.01	.01	.66	.62	.01
Attrition	<---	University_Factors	-.13	.06	-2.08	.03	-.14
Attrition	<---	Individual_Factors	-.04	.02	-2.10	.02	-.03
PEL	<---	Home_Factors	1.00				.59
PS	<---	Home_Factors	.04	.02	2.11	.03	.07
FS	<---	Home_Factors	.05	.04	1.47	.12	.10
PE	<---	Home_Factors	.11	.04	2.49	.01	.02
ACS	<---	Individual_Factors	1.00				.78
PeS	<---	Individual_Factors	.12	.04	2.79	.01	.12
SE	<---	Individual_Factors	.11	.05	2.42	.02	.12
CRP	<---	Individual_Factors	.03	.03	1.07	.22	.03
INA	<---	University_Factors	1.00				.24
ΔF	<---	University_Factors	2.17	.75	2.91	.00	.58
FaS	<---	University_Factors	1.88	.64	2.93	.00	.85
ER	<---	Attrition	1.00				.88
SAD	<---	Attrition	1.03	.52	1.97	.05	.93
DO	<---	Attrition	.27	.14	1.96	.05	.26

Note- parameter prescribed at $e=1$ for latent variables (*SE* – scalar estimates; *CR* Critical Ratio;

4.6 Findings on effect of Individuals factors on levels of student attrition

In this section, the influence of the individual factors on student attrition is discussed based on the results presented in Table 4.15. The results showed that there was a statistically significant inverse relationship between the individual factors and student attrition level ($p = .02$). This result supports the alternative hypothesis which stated that there was a significant relationship between individual factors and attrition of undergraduate students in private universities. This means that as the self-efficacy, peer support, ability to cope with stress, and choice of right program increases, the student attrition rate decreases. The study presumed that presence of such individual factors were related to an individual's likelihood of dropping out of university, deferring semesters or repeating examinations. The present findings demonstrated the existence of a relationship of such characteristics among the study respondents and student attrition. The relationship was tested using Pearson Product Moment Correlation Coefficient.

Individual factors as indicated by self-efficacy, peer support, ability to cope with stress and choice of right program was reported among undergraduate students but the exact nature of relationships needed to be established. This was done using the Pearson Product Moment Correlation Coefficient (r) as shown on Table 4.13.

Table 4.13

Test of Correlations between Individual Factors and Attrition

		ATTRITION	INDIVIDUAL FACTORS
ATTRITION	Pearson Correlation	1	.375**
	Sig. (2-tailed)		.000
	N	361	349
INDIVIDUAL FACTORS	Pearson Correlation	.375**	1
	Sig. (2-tailed)	.000	
	N	349	371

Note **. Correlation is significant

Significant predictors $p < \alpha = .01/7 = .001$, are in boldface.

There findings overall is that the correlation between individual factors and student attrition was strong at .375. However the relationship was not the same across all indicators of individual factors. The relationship between peer support and attrition was found to be of a greater significance. A positive relationship which is above zero is recommended for such relationships to be termed as positive. The findings imply that when predisposing individual factors increased, there was expected to be an increase in attrition of undergraduate students implying a direct relationship. The study thus hypothesized that there was a relationship between peer support and student attrition in private universities in Nairobi County Kenya as the correlation level was significant at 0.01.

Based on the confirmation of directionality shown after application of the Pearson Correlation, there was sufficient evidence to accept H1, which states that there is a significant relationship between peer support and undergraduate student attrition in private universities. Findings confirmed that attrition was positively associated with the support received from peers at a confidence level of ($p=.00<.01$). Based on this evidence there was sufficient evidence to reject hypothesis H0. The current findings indicate a strong and positive relationship between peer support and attrition at $r=.587$. This implies that the role played by peer support in completion of the undergraduate degree program is very important. It is notable that so far, the role of peer support surpasses all other indicators under individual factors.

These findings agreed with earlier studies done in this area that showed personal effort has affirmative connection between attitude, self-efficacy and academic persistence (Li, 2012). The positive relationship between attrition and individual factors is supported by other studies such as a study by Zajacora, Lynch and Espeneshade (2005) among students of City University of New York, which found out that academic self-efficacy, is a more powerful predictor of persistence in degree attainment than stress.

In order to test this first hypothesis that stated that there was a significant relationship between students' individual factors and attrition, students responded to items on questionnaires which assessed personal characteristics that would affect their studies at the universities. Individual characteristics which were looked at included self-

efficacy, peer support, ability to cope with stress and choice of right program and these were tested on 5-point Likert scales, ranging from strongly agree to strongly disagree are as shown in Table 4.14.

Table 4.14

Individual factors and attrition

No	Statement	S. D.	D.	N.	A.	S. A.	M.	S. Dev.	S.E. M.
a	I can always manage to solve difficult problems if I try.	2%	0	20%	40%	29%	3.9	0.9	0.05
b	If someone opposes me, I can find the means and ways to get what I want.	2%	10%	30%	50%	17%	3.7	0.9	0.04
c	Advice from my peers in the university can sway students into wrong decisions	4%	20%	20%	30%	24%	3.6	1.1	0.06
d	It is easy to stick to my aims and accomplish goals.	3%	0	30%	40%	31%	3.9	1	0.05
e	I have the feeling that studying is difficult and I may become a drop out	43%	40%	10%	10%	2%	1.9	1	0.05
f	I am confident that I could deal with unexpected events.	2%	10%	30%	40%	17%	3.7	0.9	0.04
g	I can solve most problems if I invest the necessary effort.	1%	0	10%	50%	40%	4.3	0.8	0.04
h	I can remain calm when facing difficulties	8%	10%	20%	40%	12%	3.4	1.1	0.06
i	When I am confronted with a problem, I can find solutions.	0	0	20%	50%	20%	3.9	0.7	0.04
j	I can usually handle whatever comes my way.	1%	10%	40%	40%	17%	3.7	0.9	0.04

n=387 Note: SD=strongly disagree; D= disagree; N=neutral; A=agree; SA=strongly agree; M=mean; St. Dv=standard deviation, SEM=standard error of mean.

4.6.1 Age

The distribution of age as already been given in this study (see Figure 4.2) is considered reflective of the age distribution of private universities. The number of retakes increased as the age of the students increased indicating a correlation between age and attrition. This was tabulated in table 4.15.

Table 4.15

Distribution of Retakes by Age

			No		Yes	
Age Group	18-20 years	92	74	80%	18	20%
	21-25 years	229	188	82%	41	18%
	26-30 years	53	41	77%	12	23%
	31-55 years	9	6	67%	3	33%
	>35 years	2	1	50%	1	50%
Total		385	310	81%	75	19%

Passing examinations at the end of a semester was seen to indicate academic achievement. The academic achievement was also tied to deferment of semesters where end of semester examination scores were generally used as an indicator of whether a student would proceed to the next academic year. More precisely examination grades tend to be “both a reflection of the person’s ability and the institution’s preferences for particular styles of academic behavior” (Tinto, 1975, p. 104).

In this study academic achievement, was assessed by the level of examination repeats as self-reported by students. Heads of departments, lecturers and deans of students were also interviewed and gave their perceptions of the relationship between academic performance and attrition rates

The measure of student attrition encompassing semester deferments, examination retakes and dropping out of the university shown that a student would experience delays in completing a degree program. The delay has physical, fiscal as well as psychological repercussions for all stakeholders in university education.

4.6.2 Gender

The results show that in the universities under study more male students had retaken exams than females: Eighty three percent of the male students as well as 86% of female students sampled had never retaken an exam. Twelve percent of the male students and 9% of the female students sampled had retaken an exam once with 3% of males and 4% of females having retaken an exam twice. While this finding shows that the

majority of the students are managing the university examinations rigor, the overall results show a small discrepancy by gender. Male students are shown to perform less well than the female students. The findings contradicts other studies especially those done among students in national examinations. Notwithstanding that the data was not collected among students in secondary school, it is the same population which transits to university with the probably that they bring with them the same characteristics. The same survey also found out that students from private secondary schools did not show much disparity between sexes in the performance of examination. This study was done among private universities which are likely to have the same characteristics of fewer numbers as the secondary schools.

4.6.3 Self-efficacy

Self-efficacy is seen as an individual's perceived capability in performing necessary tasks to achieve goals (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003). The items on the scale measuring individual factors were used to identify how respondents viewed individual ability to solve problems, as a measure of self-efficacy. The self-report from the respondents was further analyzed to look at the four different indicators of individual factors starting with self-efficacy as a latent variable of individual factors.

The highest score recorded was eighty six percent (86%) for male and eighty four percent (84%) for female students who cited that they could solve most problems if they invested the necessary effort. Eighty percent (80%) of male and seventy seven percent (77%) of female students were of the view that they were able to find several solutions for problems when confronted. Past studies on university student attrition indicate that perceived self-efficacy predicts persistence in studies (Carbonaro 2005; Denovan & Macaskil 2012; Guest & Schneider 2003). For example, the responses to the statement in the questionnaire which stated '*It is easy for me to stick to my aims and accomplish my goals*' showed the same level of self-efficacy in the male and female respondents. The levels were seventy eight percent (78%) for females and seventy nine percent (79%) for males. This finding was corroborated by the statement,

'I can solve most problems if I invest the necessary effort' where the highest level of agreement was recorded for both males and females at eighty six percent (86%) for males and eighty four percent (84%) for females. According to Bandura (1993) the presence of positive self-efficacy in a student is likely to influence behavior which may lead to production of a desired outcome.

4.6.4 Ability to cope with stress

The item on the scale which asked students to rate the statement, *'I have the feeling that studying is difficult and I may become a drop out'* served to measure ability to cope with stress as an attribute of individual factors in relation to student attrition. On the Likert scale thirty eight percent (38%) of male and thirty seven percent (37%) of female students perceived university studies to be difficult and that they may drop out. This is shown in Figure 4.3.

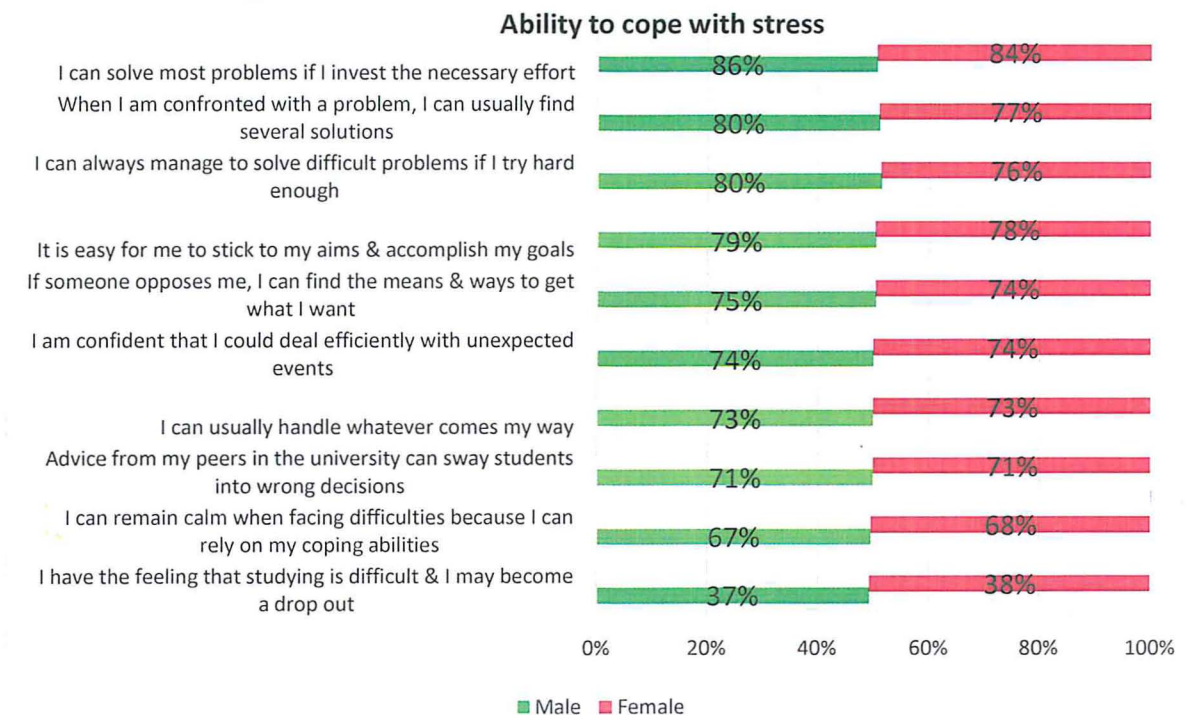


Figure 4.3: Ability to Cope With Stress

The highest score recorded for ability to cope with stress was 86% for male and 84% for female students who indicated that they could solve most problems if they invested the necessary effort. Additionally 80% of male and 77% of female students were of the view that they were able to find a solution when confronted with a problem. Majority of students portrayed confidence in ability of coping with the demands of university education. This view would appear to contradict the students' self-report that 'advice from peers in the university can sway students into wrong decisions'. Fifty four percent of the students were in consensus with this statement. The findings in this study would appear to echo Lazarus's (1966) explanation of coping behavior. He asserts that individuals adopt coping mechanism either by approaching a stressor or moving away from it. In this study the majority of the students would appear to have adopted the approach coping strategy. This observation was supported by previous findings especially that of Luke II (2009) among students in a Tennessee university where he found that when faced with a university challenge students were not afraid to try resolving the problem on their own before looking for help elsewhere.

4.6.5 Peer support

In order to assess the relationship of peer support and student attrition as reported by students, a Likert scale was used with scores of items ranging from 'Strongly agree to strongly disagree'. Table 4.16 shows a summary of distribution of responses on peer support items from participants on their responses.

Table 4.16

Role of Peer Support in Attrition

Peer support attributes	Frequency
Disagree	90(.25)
Neutral	114 (.30)
Agree	178(.47)
n=387	

As shown in Table 4.16 twenty five percent of the respondents disagreed with statements indicating that their peers would contribute to completion of their study programs. One hundred and fourteen students making up 30% were not sure if their peers played any role at all in completion of their degree programs. The present findings also indicated that 178 which translate to 47% agreed to statements showing that their peers played a significant role in their completion of the studies, and their peers offer the highest amounts of support that would help them complete their degree programs at the university.

Table 4.17 displays mean scores on Likert scale questions regarding advice from peers on the question used to assess self-reported peer influence of the respondents from the specific statement ‘*Advice from my peers in the university can sway students into making wrong decisions.*’

Table 4.17

Role of peer advice in attrition

Advice from my peers in the university can sway students into wrong decisions	TOTAL	Male	Female
N=	387	234	153
Disagree	79 (.21)	44 (.19)	35 (.23)
Neutral	93 (.24)	60 (.26)	33 (.22)
Agree	215 (.56)	130 (.55)	85 (.55)

n=387

The findings show that the level of views regarding peer influence was the same for both male and females. Fifty five percent (55%) men and fifty five percent (55%) of women ‘agreed’ with the statement. The findings also show that more female students as opposed to male students disagreed on the impact of peer advice on attrition.

The findings here are in tandem with other studies in the area of attrition which agree that for most students, time at universities provides a critical adjustment period in

which they adopt certain norms and behaviors as part of the integration process (Swail, 2004). Many students are anxious to form friendships. However, in the process the students may adopt peer behaviors that are not supportive of education endeavors and may result to non-completion of a degree program (Swail, 2004). More studies have further found that peer support maybe extremely important for academic adjustment of university students (Astin 1993). Rodriguez (2003) in a study among Latino university students noted that peer support is more strongly related to general psychological adjustment of students and that peers are able to provide resources required for specific challenges such as formation of a study group. Whereas Rodriguez's (2003) study and finding is from a group normally viewed as marginalized in the USA, it may stand true for Kenyan universities where the student age group established in this study is between eighteen and twenty five years. At this age, relationships among peers hold center stage. This observation is supported by studies done which confirm that there is a relationship between the levels of support that friends and peers give to each other and the likelihood of completing studies within the expected time. There is existing evidence as well from research in higher education that suggests that peer support maybe extremely important for academic adjustment to university students and is crucial in determining whether a student stays on in a degree program or not (Astin 1993, 1990, Rodriguez, 2003).

There is support from studies indicating that peers offer a buffer for each other by virtue of the special position of a peer. A peer is a person who is an equal and who has most probably gone through the experiences one is going through, or who is going through the experiences at the same time. Paul (2014), in a study among students in the Institute of higher learning, Oxford found that student reports of peer support were significantly positively linked to academic performance (p. 66). Academic performance is an acceptable measure of attrition in universities.

4.6.6 Choice of right program

Individual attribute scores were weighted and a histogram developed from the weighted scores to graphically present the distribution of students' perception of the

suitability of the degree program that they were undertaking. Figure 4.4 below shows a summary of distribution of responses from participants on their individual characteristics with each bar representing the weighted responses under each item of the rating scale.

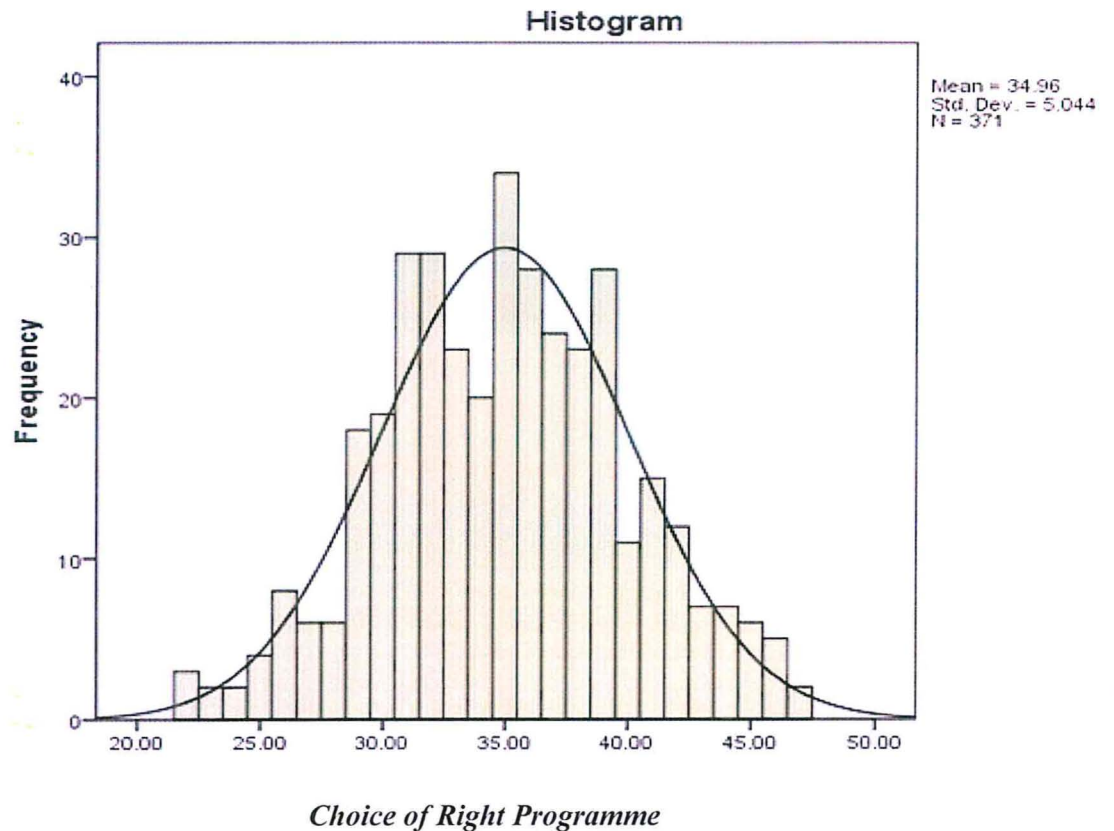


Figure 4.4: Distribution Curve for Individual Characteristics and Choice of Right Program

Based on the findings in Figure 4.4 above, responses of students were scattered around the mean (34.96); an indication that choice of right program was an important factor for students while entering university.

4.7 Findings on Home Factors

The second hypothesis to be tested in this study stated that there a statistically significant relationship between home factors (parental education level, parental support, financial support and parental expectation) and student attrition among undergraduate students in private universities in Nairobi County, Kenya. In this section, the influence of the home factors on student attrition was discussed the positive insignificant direct relationship between the latent variables (home factors and student attrition $p = .62$). This means that as parental education level, parental support, parental expectation and financial support increases, the student attrition rate increases at an insignificant rate. This finding supports the null hypothesis (H_{01}) which states that there is no statistically significant relationship between home factors and student attrition rate.

However, some of the home factors indicators (parental education level and financial support ($p = .12$)) were found to be significant individually. The implication is that as financial support and parental education levels increased levels of student attrition decreased. Chi square test was used to test the relationship between home support and student attrition. Table 4.17 shows the Chi-Square results.

Table 4.17

Chi-Square Test for Parental Support and Students' Attrition

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.674	58	0.637
Likelihood Ratio	58.726	58	0.449
Linear-by-Linear Association	1.989	1	0.158

n=387

Table 4.17 shows that the chi-square statistics testing the relationship between parental support and students attrition is $\chi^2 = 53.674$ with p-value of $\alpha = .637$. Given that $\alpha > 0.05$, the null hypothesis was not rejected at 5 % significant level. This means that there was no relationship between parental support and student attrition. In order to

measure the strength and direction of parental education levels the Pearson Product Moment Correlation Coefficient (PPMCC) (r) was applied.

4.7.1 Relationship between parental education level and students attrition

In order to meet this sub-objective, students responded to items on the questionnaire indicating their parents' level of education under several categories namely: no schooling, primary school, secondary school, certificate/diploma, university and post graduate. The findings are presented in Figure 4.5.

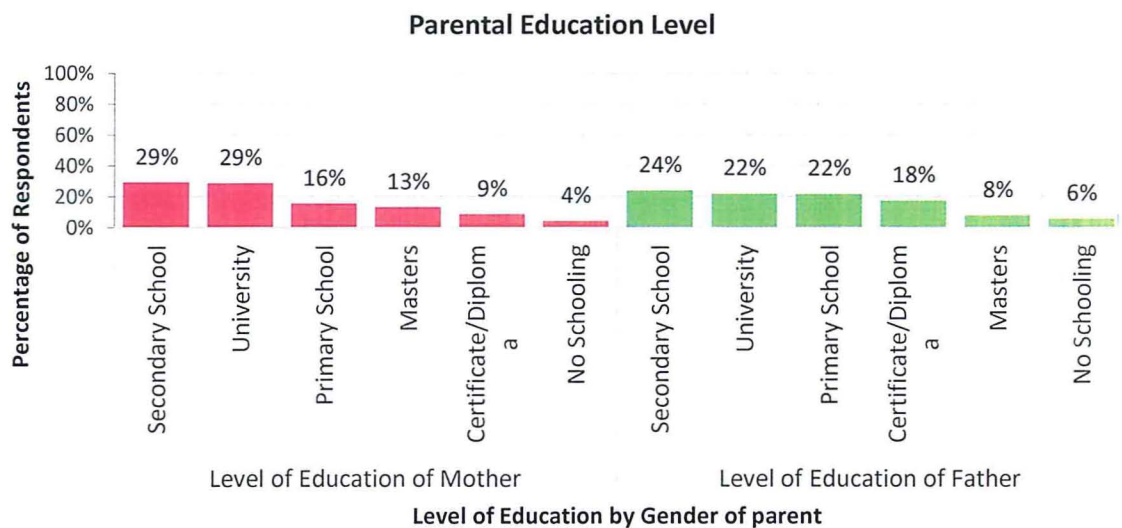


Figure 4.5: Comparative levels of parental education

Figure 4.5 shows that majority of parents (both mothers and fathers) had some secondary school education or above. Twenty nine percent, 9% and 29% of respondents' mothers had secondary, certificate/diploma and university education respectively. On the other hand 24% and 18% and 22% of respondents' fathers attained secondary, certificate/diploma and university education respectively. Comparison across parents' gender shows that respondents' fathers are likely to be more educated than the respondents' mothers. Further results of the survey showed that 35% of mothers and 43% of fathers had a university degree. The education levels noted in this

study correspond to the national averages as given by the UNESCO Institute of Statistics (2013). A 2013 study by the institute established a school going trend which shows that eight five percent (85%) of children in Kenya enroll in primary school. Out of these, only seventy five percent (75%) go on to secondary school and only sixty percent (60%) of these children in secondary school go on to enroll in institutes of higher learning including universities. Thus the trend translates to the fact that only thirty eight percent (38.4%) of school-going people in Kenya make it to the university. The comparison with the current study findings show a near match with an average of thirty nine percent (39%) of respondents' parents having a university education. The choice of the study site, that is Nairobi County, may have had a bearing on this finding. The population in Nairobi is generally better educated than the population in rural areas where access to education is more difficult.

Responses from the opened ended part of the questionnaire which asked students to state their views on the extent to which parents' educational levels impacted on the academic experience and whether parental educational levels had any bearing on a student staying or leaving university before getting a degree were summarized and reported in Table 4.19.

Table 4.19

Role of Parent Education Levels

	Male	Female
Parents education level does not determine academic achievement and has no relation	.16	.15
Paying school fees on time and visiting students boosts their morale towards academic achievement	.15	.14
Educated parents will want their children as role models	.13	.14
University students make independent choices that depends on attitude, peers, hard work	.12	.09
Highest contribution performances is relayed on parents academic advice as a motivation	.08	.16
How one is raised determines how he or she will behave and perform at school	.06	.03
Some students would want to go further than their parents	.05	.03
Enlightens and motivates the student to work hard	.05	.04
To an extent literate parents have influence on their children's academic performance	.05	.01
Parents should be able to provide counselling on academic matters	.04	.06
Parents who have gone to university know the kind of challenges their children face	.03	.01

n=387

From the responses 16% of male students and 15% of female students stated that parents' education levels were not related to whether students stayed or left university and/or how they performed academically. The students stated that educational levels did not matter to them but what did was whether a parent paid school fees in time or not. The opinion that parents' payment of school fees on time mattered in fact was cited by 15% of male students and 14% of female students. In addition, a significant number of students 12% felt that parents' educational level was not important, as the parents looked upon the students to become role models for others in the family and

the community at large. The same percentage of students, 12%, felt that university age students usually made independent choices and it did not matter what level of education the parents had. It is significant to note that in this category the male students, 12%, were more than the women students, 9%. Perhaps the differences in gender come to play here where boys are apt to wish to show more independence than girls of the same age.

It is only a small percentage of, 5% male and 4% female who felt that parents who have a university degree are likely to understand the challenges students go through in university. Female students were of the opinion that parents are happy when one graduated with a degree and that parents ignored anything to do with education when students join university assuming that they were mature. However, the participants were also of the opinion that parental advice reduced students' frustrations in colleges. This corroborates findings from another study done in Africa, which found that parental characteristics such as educational levels did not count as much towards attrition as do parents' attitudes towards academic excellence in addition to the support that such parents gave to the studying children (Sewasew, 2014).

As a finding of this study parental education levels were not found to have significant relationship with students' attrition in private universities in Kenya. There was only a small minority 3% who were of the view that parents with high level of education were in a position to help their university going students and thus help them in the academic journey, offering guidance and help in academic matters.

4.7.2 Relationship between parental support and student attrition

The current study sought to establish the relationship between the perceived level of parental support, as an indicator of home factors and student attrition among undergraduate students in private universities in Nairobi County, Kenya. Parental support was measured through eleven attributes using a five-point likert. Other items sought to find out if the parents or guardians helped the students search for attachment and job-related experiences, if parents and guardians expressed the need to be supported during their old age and if the students siblings looked up to the students in

education matters. Additional items sought to establish if parents and guardians expected students to get good jobs, satisfying careers, keep close relationship with guardians or parents and if parents or guardians were able to guide the students through the academic program adequately. The findings were reported in Figure 4.6.

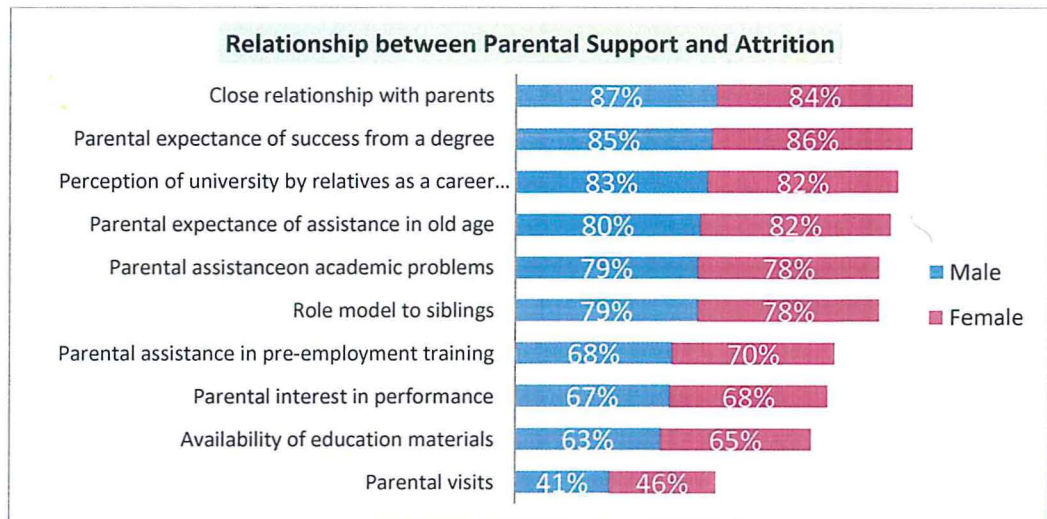


Figure 4.6: Comparative levels of Parental Support and Attrition

Parents, guardians and relatives were seen as an important support factor for continued stay at university. Eighty seven percent (87%) of male students and 84% of female students believed that they had a close relationship with their parents / guardian. This finding was closely followed by 85% of male students and 86% of female students citing that their parents / guardian believed that they would get a good job and become successful in the future because they have a degree. A relatively lower 65% female and 63% of the students reported that their parents supported them with materials such as books. Only 46% of female students and 41% of male students admitted that their parents visited them at school.

When it came to looking for vocational jobs and internships 55% felt that their parents supported them in the search. Majority of the respondents, 82% females and 83% males were of the view that their parents and relatives felt that they would get into good and satisfying careers once they graduated with a university degree.

Looking at responses from the survey in their entirety, there were several items that required further discussions. For example, Item nine on the scale asked the students to rate the extent to which they agree with the statement '*I believe I have a close relationship with my parents/guardian*'. To this statement, 84 % of male students and 87% of female students rated this scale high, indicating that the students believed they had a good relationship with their family more specifically the parents. This finding was in line with the findings shown in Figure 4.6 showing the high level of parental support and low level of attrition. It would thus be logical to state that if the reverse was found, it would mean that perception of a poor relationship between parents and students may result in high attrition levels. Jacobs (2012) in a study among university students in Eastern USA found that students who were able to get feedback and guidance on academic performance from parents were likely to stay on at university. Getting feedback is a factor of support. Jacobs (2012) also affirmed that students who received high levels of verbal support from parents stayed on at university until graduation.

A deeper look into the relevance of parental support was afforded by looking at item number one which "my parents pay visits to university to see how I am doing". Forty six percent of female and 41% of male students agreed with the statement. This finding may have a relationship with the culture within which Kenyan students come from. This culture is a collectivist one, where the needs of the individual are subject to the needs of the community. Parents would therefore feel an obligation to know where and under what circumstances a student spends time. Thus it is not a surprise that in the same scale the response to the statement number five 'my parents expect me to take care of them in old age' had 82% female and 80% males agreeing with it.

4.7.3 Relationship between parental income and student attrition

In looking at the parental levels of income, this study found out that majority of the students' parents had monthly income levels of KES 50,000 and KES 100,000 as shown in figure 4.10. Parents' attitude towards university education is one of the factors most closely associated with attrition, (Chiuri & Kiumi, 2005) thus making

perceived parental support an important variable in a study. Kenyan parents are seen as being among key stakeholders in university student education. It is more likely that in Kenya, parents would encourage and support students at university with the goal that the student would get a well-paying job and be able to support the aging parents (Chiuri & Kiumi, 2005) and thus get upward mobility in society.

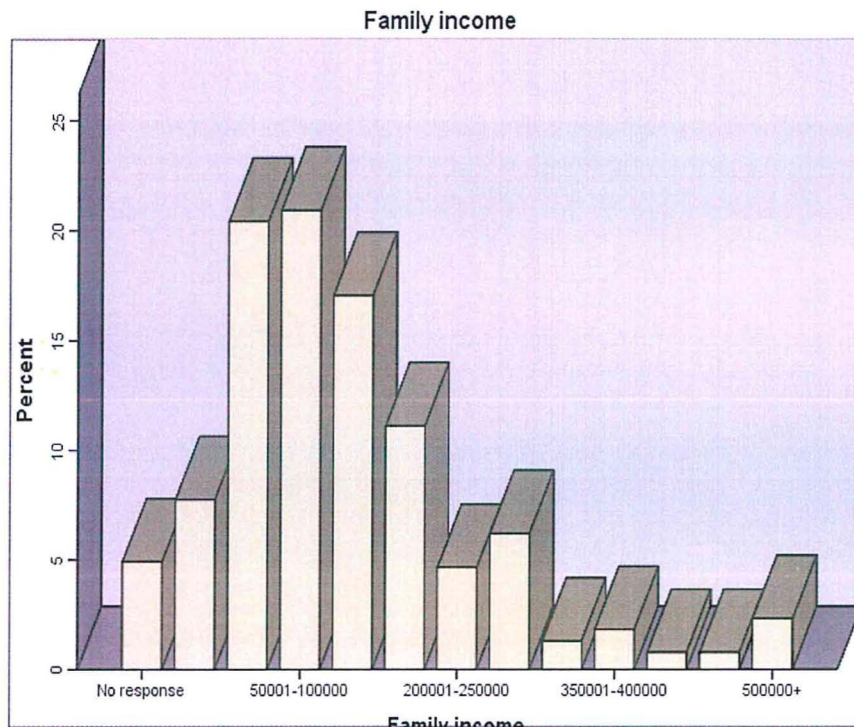


Figure 4.10: Distribution of Respondent's Family Income bracket

Generally, the income distribution was positively skewed towards the left indicating majority of households had lower levels of income compared to the frequency of high income households. For instance, the distribution shows that approximately twenty one percent (21%) of the household's monthly income lies between KES 15,000 and KES 50,000 while approximately 21% of the household's monthly incomes lie between KES 50,001 and KES 100,000. Seventeen percent of the household's monthly incomes lie between KES 100,001 and KES 150,000 while approximately 12% of the household's monthly income lies between KES 150,001 and KES 200,000. These findings echo earlier findings on educational levels where the average education levels

of parents was found to be a high school certificate. Considering that employment opportunities are usually tied to education, income levels of KES 15,000 to KES 100,000 on average are as expected. It may thus be these levels of income that parents wish their children to improve on by acquiring a university degree.

The finding in this study was that there may be no direct relationship between perceived financial support and attrition among university students but there may be a linear relationship between levels of parental support and students' desires and efforts to attain an academic degree. In another interview the university staff observed that there were some students who fully acknowledged that the support they were getting from parents was limited to financial contributions but that the parents did very little else to help them to get a university degree.

4.8 Relationship between university environmental factors and students attrition

4.8.1 Adequacy of facilities

The campus climate of any university is considered a significant influence on students' sense of belonging and eventual desire to complete studies. In the measure of the objective of student-faculty interaction an eleven item questionnaire scale which sought to find out whether students were derived from literature and contain common questions likely to face students while on campus. The students were asked to score on a Likert scale the extent to which they agreed with the statements on the scale. The results are as shown in Fig 4.21

Reading from Figure 4.21, it was seen that the majority of the students, seventy eight percent (78%) female and seventy seven percent (77%) male, indicated that they knew where to seek for help in case of academic problems. Consequently, interaction levels were reported to be high with seventy two percent (72%) female and seventy four percent (74%) male, reporting that lecturers were accessible to students and that there was frequent interaction.

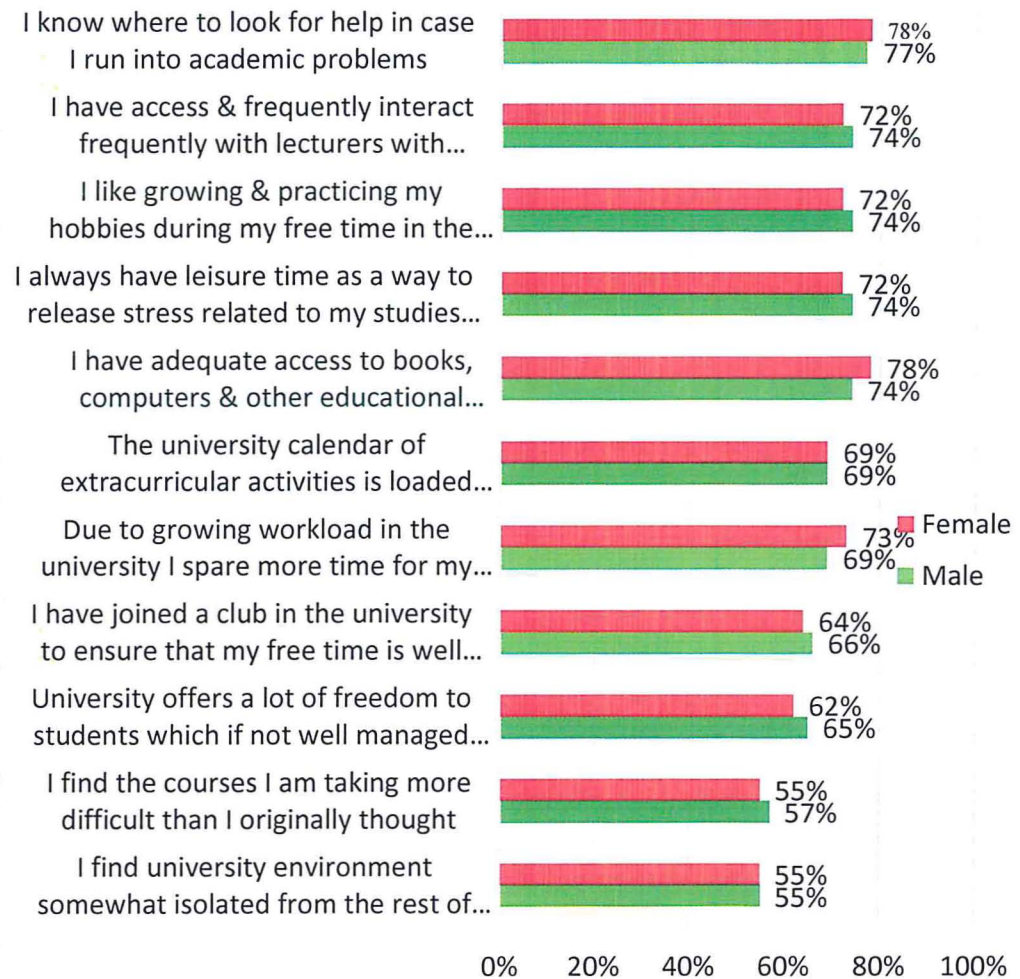


Figure 4.21 Student perception of Interaction with Faculty

This finding is supported by a World Bank Report (2000) which argued that students in private universities saw themselves as the very reason for the existence of the institution. The students would thus, according to the report, like to be involved in the decision making process. Meeting student demands by availing easy access to faculty has major implications on students' attitude towards a university and completion of a degree program.

This was further corroborated by findings from Tinto (2005) who emphasized the value of the interpersonal interaction aspect of university life. He mentioned that lack of social support, especially from faculty was the positive predictor of attrition. Thus the finding that 52 % of male and 54% of female student found university environment isolated was indicative of the challenges students get in fitting into university and may have contributed to the 37% attrition rate already established.

Additionally, students' scores of 62% among the male and 64% among the female students on the statement that said '*university offers a lot of freedom ... which if not managed well can lead to harmful activities*', confirmed that students sometimes find the university environment daunting. Swail (2004) was of the opinion that if a student simply goes to class, then goes home without engaging in campus activities, that student was unlikely to stay on at the university. Thus the agreement with an average of 62% of the students with the statement that they find university environment allowing too much time on their hands may be predictive of attrition.

Equally findings from questionnaires and interviews with the drop out students, university administration staff and lecturers revealed that as well as having lecturers interact with students, universities need adequate facilities. The classroom has been known as the place students first get an opportunity to interact with lecturers. Research findings have proven over time that interactions between faculty and students are positively correlated to students' good academic performance, and the likelihood of finishing a university degree (Astin, 1993). Later studies by Komarraju, Musuklin, and Hattacharya (2010) looking into aspects of student-faculty interaction found that "students who perceive their faculty members as being approachable, respectful and available for frequent interactions outside the classroom are more likely to finish their

degree programs” (p,339). Indeed, students who perceive that their faculty members care about them as proven in student-faculty interactions are more likely to be satisfied with their academic experiences, and thus stay on at university.

Heads of departments known as managers in some universities agreed that adequate facilities in the universities in form of a well-stocked library, sufficient computer laboratories, enough classrooms as well as enough lecturers went a long way to ensuring that students stayed in universities until completion of a degree without too much repetition of semesters.

Other studies support the finding that academic environment, this time university environment, has a relationship with attrition (Demetriou & Schmitz-Scaborsch, 2011; Schlosser, Knox, Moskovitz & Hill, 2003; Stallone, 2004; Tinto, 1993). Classrooms, lecture halls and laboratories provide central meeting spaces for structured faculty-student interaction while fields and halls of residence as well as cafeterias allow for informal interactions.

4.8.2 Student/faculty interaction and levels of student attrition

In establishing the perception of the levels of student-faculty interaction in this study the students were asked in interviews the question ‘*what in your opinion is the role of lecturer student interaction in students completing their degree within the stipulated time*’. The findings in the study showed that an understanding between students and faculty was an added plus in helping in academic performance and eventual completion of a degree program. This view confirms findings of previous studies done that demonstrated that faculty mentoring and supportive role was an important ingredient in the fight against attrition (De Berard et al., 2004). Further views from students saw that a good understanding between faculty and students helps in understanding university course work and was seen as a big ‘plus’ in helping student academic performance. There was agreement in other studies especially those done among university students in Australia which saw that those students who persist in studies cite family, friends and faculty at university as the main reason for persisting in studies. This view resonates with Terenzini, and Nora’s (2001) that the interaction

of students with faculty was demonstrated in students change in their aspirations, values and attitudes.

4.8.3 Adequacy of facilities

The researcher noted that seventy eight percent (78%) of female and seventy four (74%) of male students were able to access and knew of the existence of facilities such as libraries and laboratories. The study also found that students were in agreement that they had access and were able to interact frequently with lecturers in academic matters. Adequacy of facilities in private universities such as libraries, lecture halls/rooms, laboratories and health facilities to mention a few, have been the attractive feature over public universities (Odebero, 2010).

4.8.4 Involvement in non-academic activities

In order to establish the perception of the levels of student-faculty interaction in this study the students were asked in interviews the question '*What, in your opinion, is the role of lecturer-student interaction in students completing their degree within the stipulated time?*' The findings as shown in table 4.18 and 4.19 on student-faculty interaction imply that understanding between students and faculty was an added advantage in helping in academic performance and thus perseverance in studies. This view conforms to findings of previous studies done, that have demonstrated that faculty mentoring and supportive role is an important ingredient in the fight against attrition (De Berard et al., 2004). Views from students in this study saw that a good understanding between faculty and students helps in understanding university course work and boosts academic success.

Table 4.5: Role of Student-Lecturer Interaction

	Male	Female
Offer guidance and counselling in matters of academics in order to perform well in their education	68%	66%
Build a good foundation in the course work for a better understanding	6%	12%
A plus on students' performance/ helps in a major way	6%	3%
Advice on how to look for a job	4%	1%
If it's not efficient this can lead to drop outs	3%	2%

Echoing the view of the differences experienced by students and lectures were the views of an additional, but significant three percent (3%) of female students who think that the interaction between students and faculty ensures that students comply with the set of rules and regulations. Another three percent (3%) of female students stated that students can only do better if lecturers impact them with talks relating to academic matters. The male students were silent on both points. This was not surprising due to the difference between how men and women view situations. The men are likely to feel that rules and regulations and getting talks are not important to mention. It is, however, important to note that the findings in this study to a large degree agree with the findings of Komarraju, Musulkin, and Bhattacharya (2010), who found that the role of students' and lecturers' interaction, when through formal talks or otherwise, has positive influences on students' development within the university.

4.9 Current level of Student Attrition in Private Universities in Nairobi County

This study sought to establish the student attrition rates (examination retakes, semester/academic year deferment and drop out) among students in private universities in Nairobi County. To achieve this, students responded to questionnaire items that required them to state if they had repeated examinations or deferred semesters.

Students also responded to the items that asked them to report if they knew of students who had dropped out from the university. The findings from examination retakes are as presented in Table 4.21.

Table 4.21

Test of Frequency of Retaken Examinations

	Frequency
No response	1 (.3)
Never	326 (84.2)
Once	40 (10.3)
Two times	12 (3.1)
Three times	3 (.8)
Four times	1 (.3)
Five times	1 (.3)
>5 times+	3 (.8)

n=387

From the scores of retake of examinations, eighty four percent (84%) of students reported that they had never repeated examinations, while a total of fifteen percent (15%) of the students reported that they had repeated examinations one or more times. The circumstances behind the retake of an examination were when a student had been unable to score a pass mark in a given end of semester examination, as set by individual universities, or when a student for one reason or another, like sickness or absenteeism, was unable to sit for an examination when it was offered. Retaking an examination has the implication that a student is left behind by a cohort and may need to put in extra time at university to attain a degree.

Retaking of examinations was also investigated from a gender distribution angle which showed eighty three percent (83%) of the male students and eighty six (86%) of the female students had never retaken an examination as shown in figure 4.7.

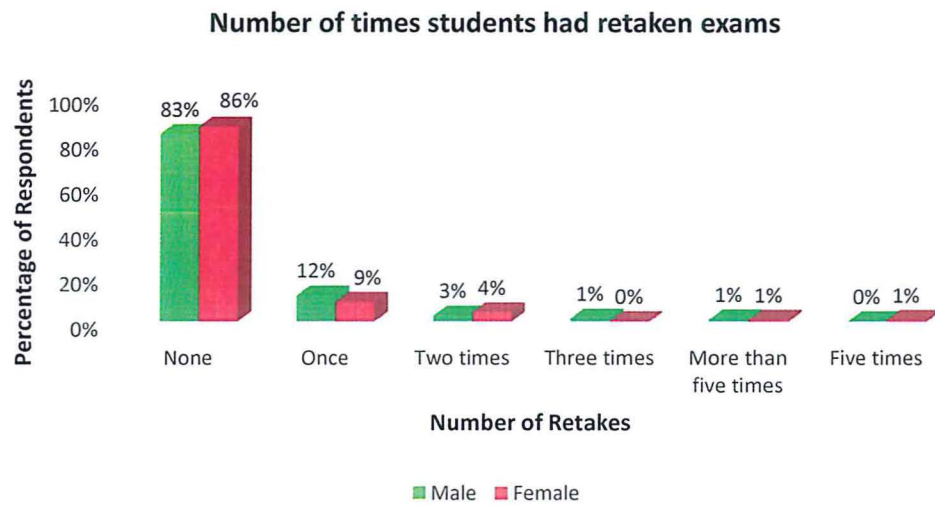


Figure 4.7: Percentage of students who have retaken examinations by gender

However, there was a small percentage of 12% of male students and 9% of female students sampled who reported having retaken an examination once and 3% of males and 4% of females having retaken examinations twice. This gives a total of 15% boys and 13% girls who had retakes in examinations.

As a measure of attrition the students responded to the items on the number of times they had deferred a semester. The results are as shown in Table 4.22.

Table 4.22

Deferment of Semesters

	Frequency
No response	2 (.5)
Never	346 (89.4)
Valid	
Once	30 (7.8)
Two times	6 (1.6)
Three times	2 (.5)
Four times	1 (.3)

$n=346$

Table 4.21 shows that 346 students out of 387 reported that they had never deferred a semester while 39 students reported that they had deferred semesters at least once. Ninety one percent of female students and 89% of male students on the other hand had never deferred semesters while percent 9% of male and 6% of female students had deferred a semester at least once with 2% of female and 1% of males having deferred twice as shown in figure 4.8

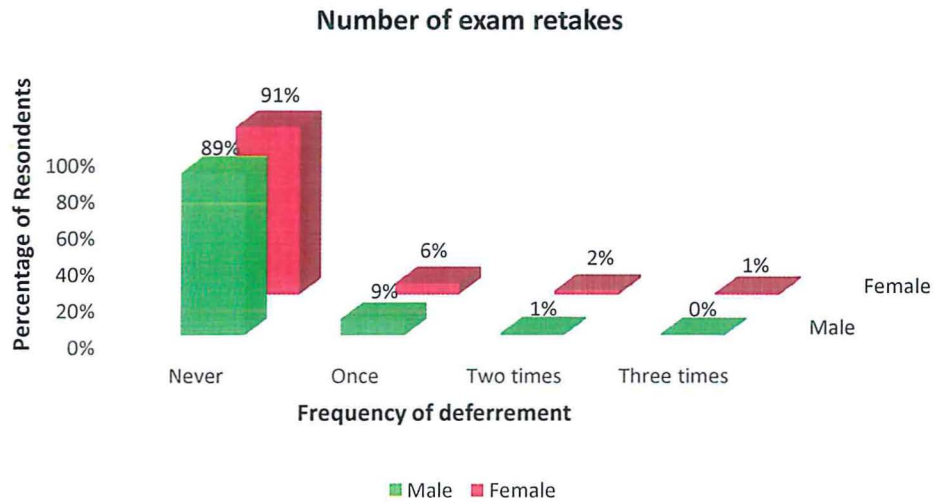


Figure 4.8: Deferment of Semester as Shown by Gender

Deferment of semesters arises when a student is unqualified to continue to a progressive year due to requirements as laid down by individual universities. This could arise out of poor academic performance manifested by failed examinations or by failure to fulfill all requirements of a semester by not attending classes. A student could also voluntarily defer a semester by applying and obtaining academic leave as per regulations of different universities. Deferment of a semester has the implication that a student does not progress with a cohort and may take much longer to finish a degree than the prescribed time in a university.

On the questionnaire item of whether the respondent students knew of someone in their year of study that had ever dropped out of University, fourteen percent (14%) of female and twenty three percent (23%) of male students sampled knew of someone who had

dropped and gave contacts of such students. Sixty (60) respondents were successfully interviewed following this information.

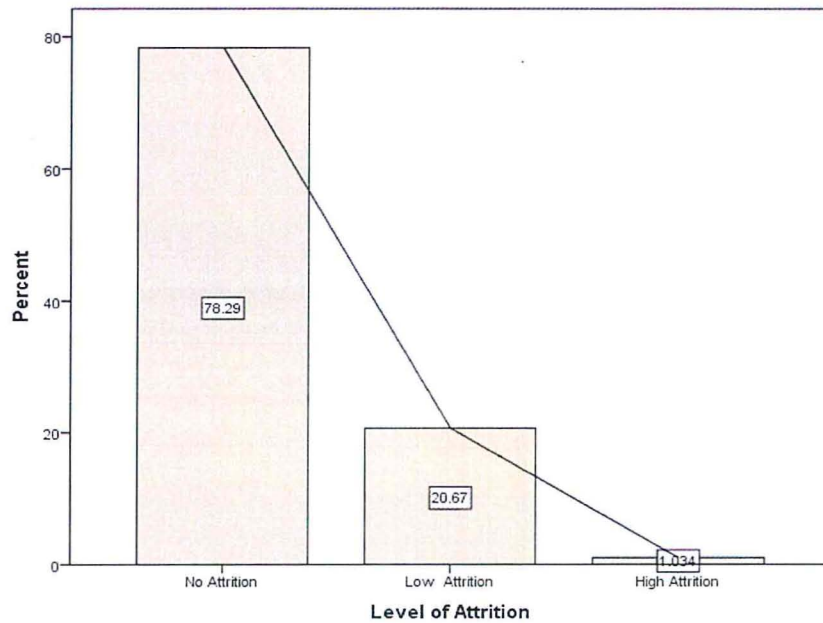


Figure 4.9: Distribution Showing Level of Students Attrition

In Figure 4.9 above, the no attrition mark shows the highest rank followed by low attrition and high attrition levels. Table 4.23 shows the descriptive scores of attrition.

Table 4.23

Descriptive Scores of Attrition

	Score
Mean	2.39
Mode	2.00
Std. Deviation	0.96
Skewness	3.47
Range	6.00
Minimum	2.00
Maximum	8.00

$n=387$

Minimum and maximum scores were two (2) and six (6) respectively. The mean score was 2.39 ($SD = 0.96$). Coefficient of skewness was 3.47 meaning that majority of the respondents had low scores on attrition.

Figure 4.7 shows that up to 79% of students reported having never repeated an examination or deferred a semester and therefore the likelihood of finishing their university education was improved. However, up to 22 % had some level of attrition which means the students reported a measure of examination repeats as well as semester deferment. A further sixty (60) comprising of 15% of the study population had dropped out of university. Thus the finding here was that the attrition rate in this study was a combination of 22% in continuing students and 15% of students who had already dropped out making attrition rate of 37% in private universities in Nairobi County. A study by Mwebi and Simatwa (2013) among private universities in Kenya confirms the existence of student attrition in private universities after establishing dropout rate of three point two percent (3.2%). This rate was, however, made up of small one year cohort who had dropped out of university and did not include those who had deferred a semester or had retaken examination.

Although the findings in this study suggest that most students are managing the academic process successfully, the results also show that there is a substantial minority of students (22 %) who are failing to come to terms with the demands of university rigor. In this study low and high levels of attrition have been compiled and make up the twenty two percent (22%) of attrition. In addition to this figure the students who had dropped out of university (15%) were added as an explicit percentage of attrition. It was this particular total percentage of thirty seven percent (37%) that the study focused on.

Rates of attrition reported elsewhere in the world such as Britain, USA and Canada differ greatly with the rates established in this study. Barnes and Randall (2012) report attrition of as high as fifty percent (50%) in Britain and Canada. USA rates of attrition compare to the Canadian ones at fifty percent (50%) as reported by. Studies from India and the Middle East, however, indicate that completion rates at university fall between 60% -79% and attrition rates are between 20% and 35% which was more or less what

this study showed. Such a dissonance between rates of attrition from the West and those from Middle East would perhaps be explained by the fact that the cultural factors in India and Middle East have more similarities with the Kenyan ones than those found in Britain, USA and Canada.

4.10 Other causes of Student Attrition in Private Universities in Nairobi County

The relevance of choice of a university degree program among such students was also supported by the drop out students who were telephonically interviewed. The telephonic interviews serve to support a deeper understanding of the student attrition phenomena:

I have always known that I want to start my own business and a degree would let me know how to manage it.....I think that some people (students) here do not know what they want they are just wasting time...waiting to see what happens
(Dropouts Interview, student. No. 7)

University studies can be hard....I am not sure that I will finish this degree. It is very lonely here...talking to people is hard. Many people seem to know each other and I do not know people...I am not sure about these studies. *(Dropouts Interview, student no. 13).*

In addition to the drop out students one dean of students supported the view on individual factors by commenting as follows:

I know of many students (not that many..) who are doing a degree of the parent's choice and not of their choice...such students usually take more than four years to complete the degree...they keep on failing and repeating exams and are more likely to ask for study leave.*(Faculty Interview, DOS)*

One head of department made the following comment;

‘...high stress levels are seen when exam results are announced. Those students who fail to get the pass mark ask for all kinds of favors...’ Some students wish for exams to be marked again hoping that an examiner can add them marks in order to pass. (*Faculty Interview no.5*)

A Dean of Students, who had worked with students for more than four years, was of the opinion that the need to pass examination and therefore continue to the next level brought out unacceptable behavior in students such as examination malpractices. He put his comments in the following manner;

‘Students are getting more and more innovative in cheating practices during examinations. These days it is not the old ‘*mwakenya*’ that we have to deal with. All manner of electronic devices are being used in the examination room, including cell phones, some kinds of electronic watches. Even body parts are being used to write notes intended to be used in the exam room. It is unfortunate that we are losing our students to the ‘animal’ of success at whatever cost...’ (*Faculty interview no. 7*).

A student who had dropped out in second year admitted in an interview that he had been at university because it was expected of him. He put his argument in the following manner;

I am in this university because it was expected of me. Everyone seemed to think that I should just go to university after I scored a B+ in my KCSE (Kenya Certificate of Secondary Examination). I was not given a choice.....I am not happy here but I have made up my mind to get this degree and be finished with it... (*Dropouts Interview, student no.. 9*).

Among the telephonic interview responses, the perception of students was that the parents’ level of education had no bearing as to whether they stayed on at university or not as shown in the following response. One student whose mother had a primary school certificate had this to say;

‘Whether parents have gone to school or not does not matter. I know of some of my friends whose parents are big ‘shots’ and have degrees but who keep on failing exams at the end of the term (semester). I have another friend whose mother sells vegetables in a kiosk and did not go to school....my friend passes all exams. She studies very hard and is determined to get a degree. So you see...it is the student who can decide whether to study or not to study’.
(*Dropouts interview, student no. 4*)

Another student who was in second year but had dropped out, had differing views and felt that parents who had university education had more to share with their university going children. He had this to say;

‘I am close to my father but I do not discuss my school work with him because he would not understand. I have tried to teach him how to get information from the internet but he loses his temper when he cannot do it. I sometimes feel very discouraged. I wish my father had gone to school and to university’.
(*Dropouts interview, students. No.23*)

Administration staff from one of the universities had the following to say on the question ‘in your opinion does parental support impact on student attrition. The staff member had worked with students in the Dean of students’ office for four years and had this to say;

The value of parents’ involvement in a student’s academic life cannot be understated. It is easy to notice from far, students whose parents care about what happens to them at university as opposed to those students who are going the journey alone. Yes...parents’ involvement is absolutely necessary’.
(*Faculty interview no. 1*)

Another staff member who had worked as dean of students for more than five years said that most problematic students cite their parents as not being interested in what they were doing. Specifically he said;

‘Students complain that parents do not understand them. They say that parents are unwilling to give guidance on career choice and look upon the students as grown-ups who should make own decisions. An attitude like that from parents is bound to make the students feel lostSuch are the kind of students who were likely to drop out.’(*Faculty interview no. 4*)

When the respondents who had dropped out of university were asked on the phone how they viewed the role of parental support to attrition, the responses did not appear to differ very much from the continuing students views as shown in open ended questionnaires section. The respondents agreed that parents now looked upon university going students to act in such a way that they could be emulated by the community at large. One student who had dropped out of university had this to say;

‘‘My parents would tell me over and over again that I must set an example for everybody in the family (including my cousins). They believe that I have been favored (I don’t know by who) by getting a chance to go to university. This kind of pushing did not help me in my studies...instead I felt too much pressure that I decided to take a break...’ (*Dropouts interview, student no. 44*)

Another student was able to excuse her parents and observed that they would not know how to advise her about university because they have no idea what happens in a university. She had this to say;

My father is more interested in how much milk the cows produce than in what subjects I am taking at university. He says that university education is my business. He says that he was not able to go very far in school as it was not the ‘done’ thing at the time he was growing up. As far as I can see, I am in this alone....’ (*Dropouts interview, student no. 6*)

The questions posed to the university staff was ‘in your view does adequacy of facilities impact on students’ attrition rates?’ The following are some of the views offered;

'It goes without saying that facilities within a university should be sufficient or seen to be sufficient. I have had several students willing to transfer to our university because we are known to have enough computer labs'. Some students do not complain...they just do not come to school anymore. We are trying very hard to give enough room in classes so that too many students do not squeeze in one room'. (*Faculty interview no. 6*)

Another university administrator was of the view that students spend most of their time on campus and should thus be catered for adequately. The library space for example should be such that a student is comfortable spending time there. She was of the view that;

'Our sports fields attract a lot of these young people. I think they have a lot of energy to spend. It is therefore important that universities have adequate facilities to allow students to express themselves and not to be attracted to other things that are too far away from studies'. Places where students can sit during breaks between lessons are a 'must' for universities.' (*Faculty interview no. 9*).

From the telephone interviews with sixty dropouts, more data on reasons for dropping out was obtained. Among the verbatim interviews which were recorded was one former student who cited lack of interest in the degree course she was pursuing as driving her to drop out of her degree program. She added that she did not find the degree necessary for the kind of livelihood that she was interested in. She put her views in the following way;

A degree is not always necessary to make money. I am a 'hustler' by nature and I am making money – I don't need a degree. I find books and exams very boring. The importance of these university degrees is exaggerated. (*Dropouts Interview, student no.38*)

Another dropped out student felt that the university asked for 'too much' especially from second years. He stated his fears in the following way;

'Nobody on campus showed interest in us. We were regarded as 'old' after the first year. Nobody seemed to care. Many of the assignments which we were asked to do were casually introduced to us in class without detail and went onto anybody who dares ask for clarification...we were reminded that ...'you should know this by now'. It was very frustrating and some of us gave up. (*Dropouts Interview, student no.42*)

When respondents on campus were asked what their views were on the reasons why their former friends and/or classmates dropped out of the degree program, the responses were interesting and varied.

The reasons given could be categorized into three groups according to the variables of the study; that is individual, home and university environmental factors. Among the home factors the students said was that some students were unable to continue studies due lack of finances to meet school fees and personal maintenance. Other reasons given were that some students lived too far away from the university and were unable to commute every day and had therefore dropped out of university. There were those students who were reported to have dropped out due to a sickness in the family while others suffered misfortunes such as deaths.

The possible causes of dropout reasons among individual continuing students were drug addiction, depression rising out of academic stress as well as negative influence from peers. Some of the students who had dropped out were seen as balancing between being students and employees. A few of the students were also reported to have had businesses which they were running, making it difficult to concentrate on studies. Other individual factors' reported were that students found the 'going too tough' while others got unexpected pregnancies.

University environmental factors reported by the students as reasons for dropping out included issues such examination referrals, non-attendance of classes, and rules and regulations which the students thought were 'childish' and did not make sense. Table 4.24 shows the summary of categorization of the reasons for dropping out from the point of view of the continuing students.

Table 4.24

Categorization of Attrition Reasons

Individual	Home	University
i. Drug addiction	i. Lack of fees/financial constraints	i. Change of program
ii. Stress/depression		ii. Too many examination referrals
iii. Busy working schedule	ii. Growth of business	
iv. The going is too tough	ii. Lived far from institution	ii. Not attending class
v. Indiscipline due to peer pressure	v. Sickness	v. Childish rules that do not make sense for adults
vi. Unexpected pregnancies	v. Social background challenges	
vii. Death of parents		
viii. Change of mind		

The reasons for attrition shown in the table above corroborate the findings from a previous study among Egerton University students by Kyalo and Chumba (2011) which found that in order to determine whether a student is able to complete a degree program, a student's interpersonal skills, the university environment and the social economic status of the family needs should be considered. Thus the presence of incidents of addictions, financial constraints, and poor academic achievement as reported by the respondents as being reasons for attrition may not allow for isolation as one reason could be the cause of another or one may lead to the other. For example a case of addictions may result in financial constraints or poor academic performance leading a student to drop out of university

4.11 Rank Order Analysis of Reasons for Attrition

Ranking was used to make comparisons between various elements of attrition and sequence them in order of priority on basis of frequency. Table 4.25 gives the rank order of reasons of attrition. The reasons of attrition of the students as revealed through

telephonic interview data analysis of students who had either deferred or dropped are summarized as follows.

The respondents specified career opportunities, competing demands of parents / guardians, suspensions, financial needs and health complications as major reasons of attrition in institutions of higher learning across gender, age group and type of program enrolled in. Some also quoted academic performance, limited university facilities and services, peer influence, transfers and scholarship opportunities elsewhere as other reasons that led to attrition among the university students.

Table 4.25

Rank Order of Reasons for Attrition from University Dropouts

<i>Rank</i>	<i>Reason</i>	<i>Percentage of response</i>
1.	Financial needs	42.8%
2.	Career openings	34.7%
3.	Academic performance	30.2%
4.	Competing parent demands	26.4%
5.	Limited facilities	19.8%
6.	Suspension	12.5%
7.	Transfers	8.7%
8.	Health/medical issues	6.6%
9.	Peer influence	4.1%
10.	Scholarships	2.6%

The reasons of attrition of the students given in the opened ended section of the questionnaire data analysis are as highlighted in Table 4.26 below.

Table 4.26

Rank Order of Attrition Elements from Continuing Students

<i>Face to face interview record</i>	<i>Frequency out of 387</i>	<i>Percentage</i>
<i>Rank</i>		
1. Financial constrains	198	51.2%
2. Academic performance	187	48.3%
3. Peer pressure	175	45.2%
4. Family situations	104	26.9%
5. Job opportunities	86	22.2%
6. Punitive issues	78	20.2%
7. Health & medical issues	65	16.8%
8. Inadequate amenities	46	11.9%
9. Demographic factors	37	9.6%
10. Transfers & scholarships	28	7.2%

4.12 Comparative Analysis of Results

Top five reasons of attrition as evidenced from the telephonic interview data for sixty (60) respondents and three hundred and eighty seven 387 students' open ended question section of questionnaire are presented in table 4.27 as comparative rankings.

Correlation analysis was conducted between the telephonic interview data and open ended questions section data. Spearman's rank correlation coefficient value was 0.905 between the attrition elements of telephonic interview data and attrition elements of open ended question data in questionnaire. The correlation coefficient had a *p*-value of 0.003 indicating significance up to a level of 0.003. Hence, it can be concluded that the open ended section of the questionnaire data validates the telephonic interviews. High correlation confirms that the data sought on the open ended section of the

questionnaire was similar to the data collected by telephonic interview indicating that students had not changed their views about the major factors that contributed to attrition rates in universities they were attending even after dropping out. The respondents in the telephonic interview willingly participated in giving interviews and in taking part in this study.

Table 4.27

Comparative Ranking of Attrition Elements of University Dropouts and Continuing Students

Top most reasons for attrition	<i>Telephonic interview</i>	<i>Face to face interview</i>
1.	Financial issues	Financial constraints
2.	Career openings	Academic performance
3.	Academic performance	Peer pressure
4.	Parental demands	Family situations
5.	Limited facilities	Job openings
6.	Suspensions	Punitive actions

4.13 Summary of Findings

This chapter presented the research findings in this quantitative method research design study. The study posited three null hypothesis derived from the investigation into the correlations of individual, home and university environmental factors and student attrition levels in private universities in Nairobi County. The hypothesis were stated;

H₁: There is a significant relationship between attrition and individual factors among undergraduate students in private universities in Nairobi County, Kenya.

H₂: There is a significant relationship between attrition and home factors among undergraduate students in private universities in Nairobi County, Kenya.

H₃: There is a significant relationship between attrition and university environmental factors among undergraduate students in private universities in Nairobi County, Kenya.

The findings were presented through graphs and bar-charts as well through analysis using SEM. A significant relationship was established between individual factors of self-efficacy, peer support and ability to cope with stress and student attrition. Among the home factors the study found that parental education levels and perceived parental support had a weak relationship to student attrition although parental income levels, and financial support were found to have a significant relationship to student attrition. There was a significant statistical relationship between student attrition and student-faculty interaction, and adequacy of facilities as indicators of university environmental factors. The key findings identified under each hypothesis serve as the context for discussion in Chapter five.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

The overall purpose of this study was to look at the relationship between individual, home and university environmental factors as determinants of student attrition among students in private universities in Nairobi County Kenya. More specifically the study addressed the following objectives. Firstly to establish the relationship between individual factors and levels of student attrition, secondly establish the relationship between home factors and levels of student attrition, thirdly establish the relationship between university environmental factors and levels of student attrition and fourthly and lastly to establish current levels attrition rates in private universities in Nairobi County. This chapter discusses the findings presented in chapter four.

Recognizing the limitations of attrition research in higher education in Kenya and considering the non-existence of models of university student attrition in the Kenyan context, the study used Tinto's model of student integration and Bean's model of psychological theory of retention to analyze and interpret the data. Tinto's view that student's perseverance at university is a process was taken into consideration when looking at the factors that a student brings into university (home and individual factors) and the interaction of these factors with the university environment. Tinto's Student Integration Model (SIM) links a student's attributes before entry to university such as family background and skills and abilities, to the experience at the institute of higher learning and ultimately to academic performance at university (Khuong 2014). Bean's psychological theory of retention helped look at student behavior while at university. Using Bean's psychological theory of retention the study looked at university environment factors such as adequacy of facilities, student faculty/student interaction as well individual factors of extent of peer influence and self-efficacy. According to

Bean, the process of attrition is derived from behavior which is a psychological process (Bean & Eaton, 2000).

5.2 Attrition Levels in Private Universities

The current study sought to establish current levels of undergraduate students' attrition in private universities in Nairobi County, Kenya. Attrition levels of thirty seven percent (37%) in private universities in Nairobi County were established as shown in Table 4.2. Given that the distribution in this study was private universities in Nairobi, the suggestion of these attrition levels was that thirty seven percent of students in private universities are taking longer than the prescribed time to complete their degree program while some of them dropped out altogether. Whereas this rate was lower than attrition rates among similar populations such the USA, Britain and Canada attrition rates appear to be on the increase in private universities in Kenya. Mwebi and Simatwa (2013) in their study on expansion of private universities in Kenya established that 1.70% of students dropped out before completion of their degree program in the 2007/2008 cohort. This figure does not include those students who repeated examinations or deferred semesters, and the trend is worrying as it has implications for the students, parents and the government.

For the students, delay in getting a degree could result in feelings of disappointment, anger and frustration, and a view of oneself as a failure. For the university any situation that results in a student interrupting studies could be viewed as a failure in that institution because the educational goals which were set have not been achieved. The parents are likely to view attrition as a waste of resources and unmet expectations for their children, while for the government the implication is the inability to meet education growth targets.

The established attrition rate of thirty seven (37%) in private universities in Nairobi county Kenya in this study was a result of investigation into three components which determine whether students would continue with studies or not. The components are examination retakes, deferment of semesters and dropping out of university. Universities in Kenya usually have an examination score cut off point without which

a student has to retake an examination in an effort to make the cut off mark. Semester deferment may arise as a result of a student not gaining the required examination passes to go to the next year, or as a personal choice of a wish to take a break. Whatever the case, deferment of a semester has the consequences of a degree program taking longer than the initial stipulated time.

A significant contribution of student's academic performance to the prediction of attrition was identified, which established that in the retake of examinations, as the performance of a student improves, the odds of dropping out of the course decreases by a factor of .80. This finding was also supported by the qualitative findings where, in the interpretation of interview data, academic performance was ranked as the second reason for dropping out of university. It is likely that a student who passes examinations and excels in other academic requirements has confidence and be motivated to persist in university studies until completion. On the other hand, a student who fails in an examination may get demoralized and may be forced to repeat a semester in order to meet university requirements. A number of researchers have shown that the amount of effort that students put into their education, affects their academic outcomes (Johnson, Crosnoe, & Elder, 2001; Marks, 2000; Natriello & McDill, 1986; Smerdon, 1999). This finding was also in line with Cizek and Burg (2006) findings among Nigerian students where performance in examination was linked to a variety of emotions including tension and anxiety.

5.3 Effect of Individual Factors and Student attrition

The first hypothesis stated 'H1: There is a statistically significant relationship between student attrition and individual factors among undergraduate students in private universities in Nairobi, County, Kenya. The results from SEM show a significant relationship between student attrition and individual factors assessed through self-efficacy, ability to cope with stress and choice at right program. The positive correlation between individual factors and student attrition showed that as the levels of self-efficacy, ability to cope with stress and choice of right program increased the levels of student attrition rate decreased at significance levels $P < .02$.

The findings in this study agree with results of previous studies in the reviewed literature which showed that individual factors have been reported as being among the main cause of why students fail and do examinations re-takes, defer semesters or drop out thus leading to attrition. Examples of such studies are Astin (1993); Rodriguez (2003); Pascarella & Terenzini (2005) and Paul (2014). Therefore the findings in this study echo previous findings on the relationship between student attrition and individual factors exemplified in self-efficacy, ability to deal with stress, and choice of right program. However, unlike other studies choice of right program when taken alone showed a statistically insignificant relationship to student attrition. The reason behind this findings could be related to the presence of other factors such as the limited choice of programs in private universities in Kenya. Whereas the students would like to study in private universities they may not be much choice in terms of programs offered in such universities. The choice of programs in private universities in Nairobi is dictated to by the number of programs a university has developed and which the university has on offer. This finding has the implication that attention may need to be paid to career choices and program of study among students in private universities. It is likely that when students pay attention to a choice of program a significantly negative relation may be result. This means that student attrition may reduce.

Descriptive statistics in the study showed that there were no notable differences between males and females in the manner in which ability to deal with stress was reported as a correlate of student attrition. The averages as depicted in Figure 4.3 are more or less the same eighty six percent (86%) male as compared to eighty four percent (84%) female who reported on elements of self-efficacy. The results differed from studies in literature which showed that there were manifest differences between men and women with regard to views on ability to cope with stress for example (Cahill & Hamilton 2006; McIntoshi, Wilson & Lipinski, 2012). The correlation between university education and gender has also been recognized in studies done worldwide However, differences in gender were found in deferment of semesters due to students not attaining the criteria to progress to another year of study.

In the review of literature on individual factors such as age and gender, which may lead to attrition it was established that other works have found that men were more likely to repeat academic years (McIntosh, Wilson, & Lipinski, 2012). Women on the other hand were more likely to graduate despite other perceived gender-based disadvantages (Maina, 2008; Pritchard & Wilson 2003 Aslam, Younis, Maher & Abbasi, 2012). This view was collaborated in this study, where some possibility of students dropping out when older were found (Table 4.14). It was likely that the difference in the male and female at university could corroborate the findings. In their study among students in an Ethiopian university Tiranueh and Petros (2014) found that the female students were more likely to attend seminars and lectures than the male students. The implication was that the female students were more likely to perform better academically and therefore be persistent in pursuit of a university degree. The male students on the other hand may find it necessary to repeat academic years and thus take longer in completion of a degree or sometimes fall out altogether.

The respective relationships of interest were tested using Pearson's product correlation with respect to age parameters. The results showed that there was no significant correlation between the age of the average Kenyan undergraduate student and ratings given on the remark that, '*delay in completion of university degree is a societal problem*'. However, a significant correlation was found between age profile and ratings given on the remark that '*universities conduct talks to students over examination retakes*'. The negative value of Pearson coefficient 0.108 indicated that higher age group students gave low ratings of the need for such talks to students. A significant correlation was also found between age profile and ratings on the remark whether '*to incorporate rehabilitation programs in university curriculum*'. The positive value of Pearson coefficient=.27 indicated that high age group respondents rated this relationship highly.

Bean's and Eaton (2000) psychological theory of student retention underpinned this study and incorporated independent variables of individual, home and university environmental factors. The theory states that a positive relationship between student's attrition and individual factors was an indication that students who are admitted into university are influenced by their background, and some factors such as family

expectation could have an influence on academic performance and ability to cope with stress (Azhar, Nadeem, Naz, Perveen and Sameen, 2013) and other factors such as self-efficacy that can lead to attrition as shown in the conceptual framework in Figure 2.3. In this study self-efficacy was adopted from Bandura's (1994) definition as an individual's belief in own capabilities to achieve some chosen goal. An example for support for the positive relationship between attrition and individual factors is given in other studies done earlier such as a study by Zajacora, Lynch and Espeneshade (2005) among students of City University of New York, which found that academic self-efficacy was a more powerful predictor of persistence in degree attainment than stress.

This study's findings also indicate that the odds of students dropping out of the degree program they are pursuing decreases by a factor of 0.91 for those with higher self-efficacy as compared to those students with low self-efficacy, which was in line with earlier studies (Metz, 2005 & Davidson et al. 2009). Other studies have shown that students are motivated to go to university by factors related to family, society expectations and individual motivations. The individual motivations are based on the desire to get a good job, make a good living, intellectual inquisitiveness and personal development. These individual motivations are directly related to success in University. Mwebi and Simatwa (2013), considered other aspects of individual behavior which lead to students dropping out of private universities in Kenya.

Under the SEM peer support was a significant indicator of individual factors and attrition as well at $P = .01$. This finding was further confirmed by a self-report survey that found that the majority, fifty six percent (56%), of the respondents were in agreement that advice from peers played a role in influencing student decisions such as the decision to stay on until completion of a degree program. Peer pressure was ranked as the third reason for attrition in the open ended part of the survey questionnaire and was ranked as the ninth reason for attrition in the telephonic interviews. Peer pressure occurs when an individual experiences some level of persuasion to adopt values or participate in certain behavior as that which was found in a peer group.

The relationship between peer support and attrition among undergraduate students in private universities in Nairobi County, Kenya was examined as an aspect of individual factors. The findings show a significant statistical relationship with attrition at $R=.58$. This finding was further confirmed by a self-report survey which found that the majority (56%) of the respondents were in consensus that advice from peers played a role in influencing student decisions, such as decisions to stay on until completion of a degree program. Peer pressure was ranked as the third reason for attrition in the self-reports and was ranked as the ninth reason for attrition in the telephonic interviews. Arguably where peer pressure is associated with high levels of academic performance it is also associated with high levels of drug and substance abuse. This finding was in tandem with other attrition studies which show that friendships with peers and development of proper connections with faculty are important factors to a student's integration within the university (Cook & Rushton, 2009; Swail, 2004). The implication of this finding was that the social network in which students find themselves in, may contribute positively or negatively to the study efforts. Students have accepted that there can be 'good' and 'bad' friends at university (Paul, 2014). The friends who are considered good encouraged students to study and attend classes while friends who have negative influence tried to influence students to skip classes and spend time on leisure. This finding was in line with similar studies that argued that success in university was greatly dependent on social network (Cook & Rushton, 2009; Freeman, Hall, & Bresciani, 2007; Metz, 2002). Universities are increasingly using peer interjections for a variety of programs such as use and management of time. The university student, even if expected to have come out of the adolescent age, still carries with him/her the tendencies to be peer influenced (Cook & Rushton, 2009; Freeman, Hall, & Bresciani, 2007; Metz, 2002). Cook and Rushton (2009) have established that students who work with others may increasingly sharpen their thinking and understand better. As university students face hardships arising out complications in relationships and increased academic work load, peer support offers a comfortable atmosphere for seeking and receiving support.

The study agreed with Tinto (1993) and Rodriguez (2003) that there was an important relationship between peer support and student attrition. Among the most plausible

explanation of this result was that peer influence in higher education has been identified as one of the most important factors that influence academic success of university students. This agrees with a study by Rodriguez (2003), which also found that peer influence was even more important than parental support in higher education, as it was strongly related to the general psychological adjustment of university students. Peers provide support which directly impacts life inside the university. This kind of support cannot be provided by parents and family members who obviously do not live or work in campus. This support comes in many ways. For instance by way of formation of study groups, the sharing of notes, advice and experiences. Peers provide a great 'safety net' to land on when the need arises. If this support was negative, attrition was likely to occur. Students who have the support of their peers may not appreciate it as much as those who do not have it and who feel and react to its absence mainly by dropping out. The findings in this study confirm Astin's (1984) findings that many aspects of a students' development cognitive, affective, psychological and behavioral, were affected in some way by peer interactions.

5.4 Effect of Home Factors on Student Attrition

The seconded hypothesis stated that (H₂) there is a statistically significant relationship between attrition and home factors among undergraduate students in private universities in Nairobi County, Kenya.

The result from SEM in Table 4.15 showed that there was no significant relationship between the latent variables (home factors and student attrition) $p=.62$. This means that parental education level, parental support, parental expectation and financial support had no relationship with student attrition. The findings thus support of the null hypothesis (H₀) that there was no statistically significant relationship between home factors and student attrition levels.

While past studies on student attrition have paid attention on the role of parental support and parental expectation on university student attrition differing points of view have been reported. Studies such as those carried out by Jacobs (2012); Lee, Sax, Kim

and Hagedorn (2004); Mouton, (2011), Lovitts, (2001); Gardner (2010); Weiner (2010) and Muckert, (2002) were of the view that parental education levels, parental support and financial support do not have major influence on a student's completion of a degree program. On the other hand studies done by Braxton, (2000), Tseng (2004) and Mwebi and Simatwa,(2013) on parental education and Aitken, (2004), Lee and Krause (2007) on parental financial support show a direct positive relation between parental support financial support, financial expectation and parental education levels and student attrition.

The possible reasons for disagreement with the findings of the related studies could be the varying environments and cultures within which respondents were reacting to the study questionnaire. Another reason was that it was likely that the increase in both primary and secondary education in Kenya following both free primary and free secondary education resulted in both public and social desire for university education (Mwebi & Simatwa 2013). The growing number of university qualifiers and the escalation in the numbers of private universities in Kenya may have led to mismatches between what students wished to do with their lives and what the parents were able and willing to provide. In this study, the average parental level of education was established as being secondary school certificate. As shown in Figure 4.5, thirty one percent (31%) of the parents of students in private universities in Nairobi County had a university degree. It would thus be expected that attrition rates would be lower than thirty one percent 31% due to the encouragement that the parents would give the students.

The finding of the absence of a statistically significant relationship between the collective home factors and student attrition was still more puzzling because it was expected that parents with higher levels of education are likely to have well-paying jobs, thus higher family incomes. Higher incomes are in turn likely to translate to sufficient money to afford school fees. Parents with higher education levels may also have higher education expectation for their children. In addition studies by Lee, Sax, Kim and Hagedorn (2004), among university students in Los Angeles, found that parental education levels were important in determining whether a student was likely to persist at university or not. The dissimilarities in the findings in this study may lie

in the differences in the study population. The findings in this study established that fifty per cent of parents earn more than one hundred thousand shillings per month (Figure 4.7). Thus the students from these families/backgrounds may not be motivated by a desire for a better standard of living since they have it already.

However when financial support was measured alone, it was found to have a positive correlation to student attrition. Thus the more financial support was offered the lower the student attrition rate. This finding was supported by a study of private universities in Kenya which found that twenty one percent (21%) of the students in a 2007/2008 cohort who dropped out of a study program, did so due to lack of tuition fees (Mwebi & Simatwa, 2013).

Similarly when perceived level of parental support was taken alone the SEM results showed a significant positive relationship to student attrition. Parental support in this study was conceptualized by factors drawn from literature of the perception of students on the degree of closeness with parents, the interest parents showed in students' academic journey and availability of facilities such as books to the students at home. Majority of the students said that they had a close relationship with their parents. This finding from students believing that they had a close relationship with their parent/guardian may be attributed to the cultural backgrounds of the students. The cultural tenets of Kenya are largely collective; one where the community and especially the family are concerned about an individual's wellbeing, and in turn, an individual was looked upon to behave in a way that takes the family into consideration. A collective culture is where the needs of an individual are subject to the needs of a community. Taking into consideration that the data collection used a self-report approach while investigating the perception of the respondents, cultural undertones are more likely to manifest. This observation corroborates findings from other studies done in Africa, where parental support of university-going students was found to extend to such a level that graduation of a child was a family celebration, and dropping out of studies was found to be an embarrassment for the whole family (Sewasew, 2014; Lewin, 2011).

There were other home factors which were found to have more bearing towards attrition, for instance twenty-eight (28) of the respondents' students who were telephonically interviewed saw parents as providers of counseling in academic and other matters no matter the level of education. This finding was echoed strongly by a study by Chowa, Amsong, Osei-Akoto (2012), among Ghanaian university students which found that students viewed parents as counseling providers. The Ghanaian study seems to support the findings in this study where eight two percent (82%) of the respondent were of the view that their parents encouraged them to complete a degree program as they would get a better a job and be able to look after them in old age (see Fig. 4.6). To buttress this point, Chowa, Amsong, Osei-Akoto, (2012) observed that students from low economic status and who may have been the first in their family to go to University, did very well and were motivated inter alia by a need to have better lives than their parents. Whereas this observation may serve to support the findings in this study, the nature of parental encouragement may count for the assessment of student as some students are likely to feel more pressurized than encouraged to acquire a university degree. Another explanation for this finding is that parents who do not have a university degree do not have firsthand knowledge of the intricacies of university life. As such, they may be ill equipped to advise their children on what to expect in university (Chowa, Amsong, Osei-Akoto, 2012).

In addition to findings on the relationship between parental support and attrition, other studies show that perceived lack of support and resources is more powerful and indicative of attrition than the actual presence of support (Braxton, 2000). The findings in this study seem to support the view that the level of complaint and blame of failure on parents by students who are not supported emotionally is higher than the appreciation of parental support by those who perceive support. The levels in this study is an average of 67.5 % for those students who believed that their parents showed interest in their studies whereas an average of 43% indicated emotional support through visits. Interaction and support by and with family members has been found to be instrumental in the academic outcomes of young adults (Rodriguez, 2003). This is mainly because this support helps them maintain their psychological well-being (Rodriguez, 2003). However, it has also been found that students from cultures where

there is a great deal of family interdependence may be disadvantaged in that they may be forced to take time out of their studies to fulfill family obligations (Tseng, 2004). This observation corroborates findings that indicate that twelve (12) of the students who had dropped out of university had done so out of family commitments. In corroboration Mwembi and Simatwa (2013) in their study among private universities in Kenya, found four point two percent (4.2%) of the students in the 2007/2008 cohort, who dropped out of private universities in Kenya, did so because of family commitments.

However two of the indicators of home factors endured a statistically significant relationship to student attrition under SEM analysis. These variables were financial support $p=.03$ and parental expectation $p=.01$. The relationship was supported by other studies on literature such Breckner (2012); Davidson and Beck (2009) and Davis-Kean (2005). Financial support contributed significantly to the prediction of attrition rates among students by a factor of 0.99. The nature of parental expectation exhibited by the students further contributed to the prediction of attrition by a factor of 0.89 for every unit increase in perceived parental support. The explanation of the findings may be that such students come to the university from backgrounds where cultures of origin are strong. An example is the collectivist culture which has been manifested in this study. The collectivist culture has the implication that the student's degree does not belong to him alone but to the whole community. It may be that parental expectation may be not only for the attainment of the degree but for the 'honor' the student may bring to the family in the eyes of the community. Additionally financial support has the effect of making the university experience easier when a student does not have to struggle for fees or upkeep.

The above views are supported by respondents' responses when asked how they would feel if they were to stop university education showed the feelings of letting people down and a feeling of shame were cited by twenty four percent (24%) of male students and twenty percent (20%) of female. A further thirteen percent (13%) of male students and fifteen percent (15%) of female students said that they would be filled with feelings of shame and shattered dreams. These feelings of the respondent are in line

with a previous study in private universities in Kenya which established that students who drop out of university often have low self-esteem and are filled with feelings of guilt and shame (Mwebi & Simatwa 2013). These feelings could develop into depression in the long run (Pervin 1996). Further research has also shown that students who drop out of university experience long periods of unemployment and even when they finally find employment, they earn much less than those who went on and graduated (Freeman, 2007).

Tinto's (1975) theoretical model of student attrition model saw that students brought with them home factors into universities and colleges, and interacted with the university environment with those factors. Thus homes socialize children through inputs such as opportunities, demands and rewards, and that is what they take with them to university to interact with other factors (Hong & Ho, 2005; Berla, 2004 and Hicks & Heastie, 2008).

5.5 Effect of University Environmental Factors

The third hypothesis (H₃) stated that there is a statistically significant relationship between attrition and university environmental factors among undergraduate students in private universities in Nairobi County, Kenya. The SEM results showed that there was a negative significant relationship between university factors and student attrition rate ($p = .03$). This implies that as the involvement in non-academic activities, perception of adequacy of facilities and faculty/student interaction improved the student attrition level decreased at five percent (5%) level of significance. Correlation was used in addition to structural equation modeling to assess the relationship of adequacy of facilities, students/faculty interaction and involvement in non-academic activities on levels of student attrition in private universities in Nairobi County Kenya.

SEM results showed that while the latent variable 'university environment' was found to have a strong relationship to student attrition levels, the observable variable of student /faculty interaction was the main contributing factors to this relationship. There is an agreement with other studies, for example those done among university students in Australia, which showed that those students who persisted in studies cited family,

friends and faculty at university as the main reason for persisting in studies (Foster et.al 2011). This view resonates with Terenzini, and Nora's (2001), that the interaction of students with faculty demonstrated in students change in their aspirations, values and attitudes.

The value of student/faculty interaction has been underscored in the current study. The importance of faculty in helping build a better understanding for studies is echoed by Newton (2002) who, while commenting on universities as organizations, was of the opinion that education currently needs to be viewed as a business like enterprise, where the lecturer is seen as a producer of knowledge, skills and competencies. The student on the other hand is the receiver of such products. To this end, the university must ensure that the student feels that faculty have students' interests at heart. The current study established that adequacy of facilities within a university comes among the first ten reason reasons for attrition as given by the 60 drop out students who were telephonically interviewed. The respondents were of the opinion that lack of adequate facilities counted for incidents of attrition which could otherwise be avoided.

The implication is that when students feel that universities do not have sufficient facilities, they get discouraged. The evidence in this study indicates that there is a clear relationship between students' perception on adequacy of facilities within the university, both physical (classrooms, laboratories, and library) and faculty (lecturers and supporting staff). The measure in this objective was the result of a Pearson coefficient of 0.27 which was also related to the demographic factor of age. It showed that the higher age group rated university environment as a factor of attrition. The physical environments of universities which include the layout, room temperatures and noise have been found to have an impact on learning. For example high levels of noise may interfere with concentration leading to lack of interest and absenteeism (Guest & Schneider 2003). Psychologists agree that the layout of the university and the general ambience add to students feeling of safety and contentedness, thus contributing to persistence in studies (Weiner 2000).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The purpose of the current study was to examine individual, home and university environmental factors as correlates of student attrition in private universities in Nairobi county Kenya. This chapter gives brief results of the study, the implications that the study is likely to have on the question of student attrition, the contribution to body of knowledge and the recommendations for futures studies on the issue of student attrition. The various gaps identified in the study that may require further investigation are also indicated. The chapter is divided into three sections; an introduction, contribution to the body of knowledge and recommendations and limitations of the study.

In this study the aim was to assess the relationship between individual, home and university environmental factors and levels of student attrition in private universities in Nairobi County. Individual factors were assessed by looking at self-efficacy, ability to cope with stress and peer support as well as looking at the age and gender of respondents. The home factors investigated included parental education levels, perceived financial support, parental expectations and perceived parental support. The university environmental factors were assessed through investigations of the adequacy of facilities within the university, student/ lecturer interaction and involvement in non-academic activities.

The study hypothesized that: 1. There was a statistically significant relationship between individual factors and levels of student attrition in chartered private universities in Nairobi County Kenya. 2. There was a statistically significant relationship between home factors and levels of student attrition in chartered private universities in Nairobi County Kenya. 3. The study also established current levels of student attrition in private universities in Nairobi County. The findings provided invaluable insights into the question of attrition in higher education.

This study was guided by two theories, Tinto's (1975) student integration theory (SIM) and Bean and Eaton's 2000 student attrition model (SAM). Tinto's SIM although longitudinal in nature looked at the student perseverance in a university program as being an interplay between students' background characteristics and the social function of the university environment. Bean and Eaton's (2000) theory which has a psychological approach is based on behavior. Bean's theory posits that persistence in a degree program is related to students' personality traits which are manifested in behavior. Bean and Eaton's theory contains the attribution aspect which served this study by assessing the extent to which other parties such as parents were described as contributing to student attrition.

6.2 Contribution of this investigation to the body Knowledge

The results of this study provide invaluable insights that would have far-reaching implications on the existing knowledge gap in regard to university student attrition. Policy makers find the information on the relationship between home factors and student attrition to be a proper basis for designing programs for parents to help them create a conducive environment for university students to enable them study seamlessly. Since there is evidence of a relationship between individual factors and attrition, policy makers may also find these results useful in designing curricula that helps individual students gain more resilience and increase their chances of completing their studies in time.

One of the more significant results to emerge from this study was the statistically significant negative correlation between individual factors, exemplified by self-efficacy and self-esteem, and levels of student attrition. Thus as peer support and self-efficacy levels increased the levels of student attrition decreased. As a way of dealing with student attrition, universities may need to put into consideration the significance of peer relationship in university student activities. When parental support and parental education levels were analyzed through the Pearson Product Moment Correlation Coefficient (PPMCC) (r) they were found to be insignificant at a level of .06. Thus, the study established that among the home factors only financial support had a bearing on student attrition levels.

The study contributes further through the development of instruments to measure the student attrition phenomena. The dependent variable in the study was university student attrition which was looked at through three measures; retake of examinations, deferment of semesters and dropping out of studies. This perspective of student attrition has been rarely done in the past. The data collection tools used in the study which were developed by the researcher can be used to replicate this study for different circumstances and subjects, for instance in assessing correlates of individual, home and environment matters in public universities which were outside the scope of this study. It is, however, noted that the study adds to the growing body of literature and confirms previous views that adequacy of facilities in a university, the constant positive interaction between students and lecturers and student's involvement in nonacademic activities play an important part in the students' progress towards the completion of a degree program.

Furthermore, extant studies in this area have relied on either Tinto's or Bean and Eaton's theory to explain the relationship between the variables in focus. This study enriched this area by providing a theoretical framework that blended the two to create a richer picture on the correlation between the variables. This sought to inform further studies that would be conducted on this and similar subjects.

Lastly, the issue of student attrition has been a challenge to parents, students, universities, government and other stakeholders in the higher education sector. Any study, such as this, which provides more knowledge on how the challenge can be stemmed has immense contribution to the body of knowledge. The study established current levels of 37% which adds to the need to address the problem urgently.

6.3 Conclusions

The results of this study point to some key conclusions that are consistent with earlier research on university student attrition. One of the key conclusions in this study is that the interaction between student and lecturers was of great importance in the relationship with student attrition levels. Student faculty interaction was found to weigh heavily on whether students stayed on until completion of a degree or they did not. The value of student-faculty interaction has been agreed upon by previous

research such as Okwilagwe (2002), who found that a strong student-faculty interrelationship is demonstrated in changes of aspirations, values and attitudes. In addition to student-faculty interaction, adequacies of facilities carried the same weight as student-faculty interaction in the relationship with attrition.

Another key conclusion is that peer support play a key role in the determination of attrition levels. Peer support was found to have a better relationship to attrition than parental support. Peer relationship in this study was found to be important factor of how students integrated with the university environment. Taking into account the average age of the students established to be within the range of 21 and 25 years, the developmental age of young adults, where the students are beginning to move into adult roles, this result was to be expected. From the interviews carried out in this research, most of the reasons given by those who had dropped out, deferred studies or retaken exams, were connected to peer pressure; the presence of drug addiction, indiscipline, unexpected pregnancies and not attending classes, which is sometimes a consequence of giving too much importance to fun activities with peers. Peer influence may be the one factor, as compared to the other factors considered in this study that is most responsible for attrition

Unlike other studies in the past the relationship between parental levels of education and student attrition was found to have no statistical significance. Instead parental concern and therefore parental support counted more towards a student staying on at university than did the parental levels of education. Whether a parent was educated or not was not a determinant of completion of university education. There is evidence of students who have parents who are educated dropping out, and students of parents who had no education completing their studies and attaining a university degree (Dennis, 2005).

However, financial support was singled out as having bearing towards timely successful completion of a degree program. The finding was mainly evident among students who had dropped out of university. The reasons for dropping out were given as lack of finances, such as school fees and lack of money for personal maintenance as well as the high cost of transportation for those students who lived far from the

university. All these factors are directly related to financial resources, and would not have occurred if there was money in the family.

The present research along with previous research in the area of student attrition has highlighted the common themes of students' attrition as being related to home, individual and university environmental factors. The study has reinforced the importance of approaching the student attrition problem from multi-dimensions.

The two chosen theoretical foundation which guided this study, Tinto's Student Integration Model and Bean Psychological theory of student retention have been found relevant. Tinto posits that students' successful completion of a degree program is dependent on the degree to which a student becomes unified into a university environment. The unification of the student and university is determined by how well as student is able to relate to both peers and faculty. The relationships of students to peers need not be equal to the relationship between faculty and student but both of them are necessary for the timely completion of a degree program. Bean's theory has leanings on the psychological factors that affect a student at university which is mainly behavior related. Thus as found in this study a student who has confidence in own ability to overcome difficulties is more likely to persevere until completion of a degree program.

6.4 Recommendations

Based on the findings of this study and the related literature review the recommendations of this study are provided with a view to assisting private universities control student attrition rates and contribute to the studies on student attrition in private universities in Kenya.

6.4.1 Recommendations on research findings

The study has established high current student attrition levels within private universities in Nairobi. The present study demonstrated that currently approximately thirty seven percent (37%) of students in private universities in Kenya delay in completing their degree program, or dropped out of university altogether. The study

surveyed deferment of semesters, examination retakes among students and dropping out of university altogether. The combination of the three indicators gave an insight into what contributes to delay in the completion of a degree program or the failure of completion. It is recommended that information needed to calculate student attrition levels be freely made available in private universities. Such availability may help university administration, Commission for University Education (CUE) and other stake holders in identifying early signs of student attrition.

Among the findings on individual factors addressed in this study, peer support was ranked high in the relationship to student attrition. The study established that as peer support increased student attrition reduced at significant levels. In the same cue was the position of self-efficacy which was also inversely related to student attrition levels. It is thus recommend that policy changes may be made towards reducing student attrition levels in private universities in Kenya must include strategies or programs that lead to maintaining positive peer influence. Unfortunately, this is a herculean task for the University because the campaign of peer pressure targets individual decisions. Whereas positive peer pressure is encouraged for continued stay at university, negative peer pressure although not recognized in this study is a reality. The cure against peer pressure is the word 'no'. Only inner strength and self-confidence can help a student stand firm, walk away.

The programs to curb student attrition need to look at the fact that students coming into university bring with them all past experiences from home and other education institutions attended. Multifaceted plans may therefore need to put in place to control attrition in universities. The plans could focus on a holistic program which addresses diverse issues. Students usually face a range of academic, psychological, social and career challenges as they work their way through university. This means that universities and institutes of higher learning need to look at a variety of factors, including individual dispositions and characteristics of the families where the student comes from. The current study showed that less than 30% of parents of students participating in the study had a university degree. The students could thus be the 'first generation' of university under graduates resulting in probable academic non-support at home. Thus universities need to establish early incorporations into institutions.

What commonly happens in many universities is that students are given a one or two day orientation at the beginning of their first year, and after that they are left to struggle on their own and find their way through the challenges of university life. When met with problems, student may know not where to get help for personal issues. Offer of student mentoring services may assist in alleviating this problem. It is highly recommended here that all universities have a very active mentoring department with fully trained and qualified personnel. This department would arrange round activities which could include talks or seminars covering the following topics; the importance of mentoring and/or counseling; life in University; challenges and coping skills; skills for managing academic stress; skills for building and maintaining motivation and skills for managing examination anxiety. A mentoring department may, however, not succeed on its own and universities may be required to provide for robust interaction initiatives between students and students, student and faculty and students and staff.

This calls upon scholars and all stakeholders in higher education to become aware that attrition is not as a consequence of one factor but as interplay of several factors. It is recommended that this interplay be taken into consideration by university administrations and the Commission for University Education when universities are developing mechanisms for prevention of attrition.

Given that home factors, especially parental support and financial support were found to be of statistical significance in relation to student attrition, it is recommended that universities hold frequent seminars to educate and sensitize parents of their invaluable role in walking with the student through university studies. These seminars could be organized by the counseling department in conjunction with the Dean of Students' office. Suggestions for the subject matter of these parent seminars are: life in university, challenges and coping skills, developing and maintaining self-esteem in young adults, the role of the parent of a university student, reasons for attrition in university, addiction; early signs and what to do as a parent, negative peer pressure; how to detect it and what to do. Families' involvement in university student education path can also be encouraged. The value of parental advice was highly rated in this study, which would suggest that parental advice would be more valuable if the parents knew what happens at university. This study recommends that programs be rolled out,

which would see parents made more aware of the activities their children are involved in at university.

Arguably a student is equipped to say no to situations which may negatively affect his/her academic goal, if he has strong values right from home and a high level of self-esteem. It may be difficult to help a student who has weak values and no role models upon the day he/she entered the university gates. The biggest influence against peer influence has been found to be parental guidance and support (Crocket et al, 2006). This influence must exist before and during university life if a student is to resist the power of negative peer influence or be self-driven. Parents must therefore be reminded of this serious obligation on their part, even if their children have grown into 'adults'. It is likely that counseling and/or mentoring is not taken very seriously both by universities and the students. The feeling that students are adults who should be able to 'take care of themselves' could contribute to this disregard for counseling. Nothing could be further from the truth. Many of the reasons which lead to attrition could be resolved by counseling and mentoring. These include peer pressure, stress, and change of mind about pursuing education, social background challenges, indiscipline and disregard of university regulations.

The study addressed university environmental factors and established that student/lecturer interaction, adequacy of facilities and involvement in nonacademic activities were negatively correlated to student attrition levels. A necessary aspect of student attrition levels is the amount and quality of student lecturer interaction. Positive interactions have been found to have positive outcomes for students, more precisely a reduction in attrition levels (Pascarella & Terenzini 2005). In order to make faculty available to students, regular office hours could be set aside for consultations. The time could be used in answer student questions, clarifying difficult conceptions and generally explaining assignments. Policy makers in universities, especially the administration heads, also need an introduction and development of student mentoring services to help attend to individual students. This recommendation arises out of the findings that individual factors have a high correlation to attrition. The study recommends that the mentoring services incorporate within its activities, talks and seminars on students delay in completion of a degree program or dropping out, and the

measures which can be adopted to stop such happenings. In addition policy makers such as the Commission for University Education (CUE) who have been charged with the responsibility of making policies and regulations of staff student ratio, classroom adequacy, library regulations should ensure strict enforcement affording universities with a conducive atmosphere for students, thus preventing psychological and other harm that comes with student attrition. Thus it is clear that there is a direct relationship between lecturer-student interaction and attrition. With this in mind universities need to implement measures to ensure maximum interaction between students and lecturers outside of the lecture room.

6.4.2 Recommendations for further research

The present research has provided awareness into an understanding of the relationship between individual, home and university environmental factors and levels of student attrition in private universities in Kenya. This understanding may help unravel the student attrition problem. The current study was a cross sectional study. Future studies may benefit from longitudinal analysis of cohorts through a stipulated time which a degree program takes. A longitudinal research may give in-depth measures of the extent on the reasons for dropping out, repeating examinations or deferring semesters.

It may be beneficial to replicate this study by incorporating other variables such as cultural aspects. In future studies the role played by cultural factors such as socio economic status, ethnic background, urban/rural movements may be investigated. The response utilized in the survey could be changed from a Likert scale to an open ended question where respondent would indicate perception of cultural influence to university studies. Thus enabling richer findings in the aspect of home findings as given in current study. Past research in universities in Kenya has primarily concentrated on quality of education and adequacy of facilities leaving largely the question of student attrition.

One of the limitations of this quantitative study was that the questionnaires administered to the respondents were self-reports. It is recommended that future studies follow the students through qualitative means such as in depth interviews or

focus groups. This process would help in getting to assess reasons behind respondents' answers. The finding, for example, that parental levels of education were not related to student attrition may need further inquiry. A qualitative measure may give deeper reasons behind the view of parental levels of education.

Another aspect of future research is to explore the student attrition levels in both public and private institutions in Kenya. This would confirm the question of whether the disparities perceived in the present institutions would be consistent with findings in similar institutions or were the current findings irregular. It would be especially of interest to replicate the study in public universities investigating the variable of 'individual factors especially self-efficacy'. Certainly the responsibility for reducing student attrition rates lies to a big extent on an institution. However, students also have to share the responsibility. Additional research is required to better understand the decision making process of students in the choice of university programs. The studies would take into account additional factors such as the actual nature location of a university (the surroundings such as shops, restaurant and hotels) be it urban or rural private or public.

It may be of interest for future studies to examine deeper the factor of parental levels of income (thus social economic status) and perception of students on the adequacy of facilities in universities. This study purposively chose private universities in Nairobi County but widening of the geographical gap to include in urban universities may shed more light on factors contributing to student attrition levels. Additional factors which may lead to attrition need also to be included to enrich this area of study in higher education, as recommended in such studies as Pace (1980), Astin, (1984), (1993) and Kuh (2003).

After many years of research, the question of student attrition in higher education is still puzzling, complex and difficult to understand. The findings confirmed that the theories on student attrition by Tinto, Bean and Eaton as well as Weiner motivation attributional theory are still relevant. Theories on student attrition developed by scholars such as Tinto and Bean have been undergoing transformation and evolution. Whereas the two theories have served this study well, a wider inclusion of factors such

as why students behaves the way they do may enrich this study and shed more light to the question of student attrition. The field of university student attrition in Kenya keeps on growing. The purpose of the current study was to investigate the relationship between student attrition and individual, home and university environmental factors. The student demographic characteristics keep on changing. Thus arises a need to re-define the theories used. Future research may need to incorporate the attributes, skills, abilities, commitments, and value orientations of students who enter universities. Several elements can be considered in future theoretical consideration such as the voluntary decision to drop out of university and consideration of transfer for one university. The fore mentioned factors contribute to the picture of students' completion of a university program

The current study offers an integrative structure in understanding the relationship between student attrition and selected factors of individual, home and university environmental. By highlighting the relationships that were found to have high statistical significance in relation to student attrition the study revealed that the problem of student attrition in private universities in Kenya may need more attention than has been the case in the past. This study can be enriched by looking at the family backgrounds the student come from. With the changing composition of families in Kenya the investigated home factors in this study can be enriched by such and inclusion. The recommendation is justified by the fact that student attrition is expensive and is detrimental to an institutions standing and reputation. As more demand for an educated population increases, there is more pressure on universities to improve graduation rates.

6.5 Study Limitations

This study was designed to examine the relationship between student attrition and individual, home and university environmental factors. Thus this study design was

exploratory in nature and not experimental. The results of the study therefore are not predictive nor do they have cause and effect.

In order to gain a deeper, more inclusive understanding of the relationships between home, individual and university environment and undergraduate student attrition in private universities in Kenya the study was based on university students in session at the time of study and as such only examined cross-sectional differences among private universities in Nairobi. The results of this study must therefore be generalized with caution as the progression of these students in completing a degree program may be related to the status of the university that is private.

The data for the current study were collected using self-report in questionnaires. Self-reports are not necessarily a proper reflection of what respondent actual experience is and may be impacted upon by interpretation of questions and statement. Despite the internal check in the questionnaires the problem may still emerge.

Finally, the study focused on the relationship between university environmental factors and attrition within thirteen private universities as opposed to both public and private universities. The study also had a limited geographical coverage and was only carried out in Nairobi. However out of the seventeen private universities in Kenya fifteen of them have campuses in Nairobi and all chartered universities have campuses in Nairobi. The geographical constraints therefore were necessitated by the location of the target population.

Despite these limitations, the study has shed light and provided insights into the factors that contribute to student attrition in Kenyan universities. The debate on student attrition has been enriched and continues.

REFERENCES

- Aitken M. (2004). Attrition report, Mildred Aitken School (02650015). Massachusetts Retrieved on 12 August 2015
rofiles.doe.mass.edu/attrition/default.aspx?orgcode=02650015&fycode
- Akinwumi F.S. (2010). Proliferation of Higher Education in Nigeria: Implications for quality education in Kenya. *Journal of Education planning Econ. Manag vol. 2* 45-51
- Alderson, P. & Morrow V. (2006). Multidisciplinary research ethics review: Is it feasible? *International Journal of Social Research, Theory and Practice* 9: 405-417.
- Allen, W. R. (1992). The color of success: African American college student outcomes at predominantly white and historically black public colleges and universities. *Harvard Educational Review* , 64 (1), 26-44
- Allensworth, E., & Easton J. (2007). *The on-track indicator as a predictor of high School graduation*. Chicago: Consortium on Chicago School Research at the University of Chicago 32(4), 4-28
- Arnett, f. J. & Tanner, J. L. (2006). *Emerging adults in America: Coming of age in the 21st Century*. American Psychological Association, Washington DC.
- Ary, D., Jacobs, L. C., & Razavieh, A. (2002). *Introduction to research in education (6th ed.)*. Belmont, CA: Wadsworth/Thomson Learning
- Ascend Learning, LLC (2012). *Student attrition: Consequences, contributing factors and remedies*. ATI Nursing Education, Whitepaper.
- Aslam, H. D., Younis, A., Sheik, A. A., Maher, M., & Abbasi, Z. A. (2012), "Analyzing Factors Affecting Students' Satisfaction regarding Semester System in Universities of Pakistan. *Journal of American Science*, 8(10), 163-170.
- Astin, A. W. (1993). What matters in College. *Liberal Education*, 79(4), 4-15.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited* (1st Ed.). San Francisco: Jossey-Bass.
- Astin, A.W. (1985). *Achieving educational excellence: A critical assessment of priorities and practice in higher education*. San Francisco: Jossey-Bass.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel* (25) 518-539.
- Atinaf W, Petros P (2016) Socio Economic Factors Affecting Female Students Academic Performance at Higher Education. *Health Care: Current Reviews* 4:163. doi: 10.4172/2375-4273.1000163

- Azhar, N., Perveen, N., Sameen, A., Younis, M, & Abbasi (2013). Impact of parental education and socio-economic status on academic achievements of university students. *European Journal of Psychological Research Vol. 1 (1)*
- Barnes, B. J., & Randall, J. (2012). Doctoral student satisfaction: An examination of disciplinary, enrollment, and institutional differences. *Research in Higher Education, 53(1)*, 47–75. doi:10.1007/s11162-011-9225-4
- Bean, J.P. (1990). Using retention research in enrollment management. In Hossler, Bean & Associates, *The strategic management of college enrollments*: Chap. 10, 170-185. San Francisco: Jossey-Bass.
- Bean, J.P. (1990). Why students leave: Insights from research. In Hossler, Bean, and Associates, *The strategic management of college enrollments*: Chap. 9, 147-169. San Francisco: Jossey-Bass.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education, 12(2)*, 155-187.
- Bean, J. P. & Eaton, S.B. (2000). A Psychological model of college student retention, In John M. Braxton (ed), *Rethinking the departure puzzle: New theory and research on college student retention*. Nashville, TN: Vanderbilt University Press
- Bennett, R. (2003). Determinants of undergraduate student dropout rates in a university business studies department. *Journal of Further and Higher Education, 27(2)*, 123-141.
- Berger, J.B. (2002). Understanding the organizational nature of student persistence: Empirically-based recommendations for practice. *Journal of College Student Retention, 3(1)*, 3-21.
- Berger, J. B., & Lyon, S. C. (2005). Past to present: A historical look at retention. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 1-30). Westport, CT: Praeger Publishers.
- Berger, J.B. & Millem J.F., (1999). The role of student involvement and perceptions of integration in a causal model of student persistence. *Research in Higher Education, Vol.40*.
- Berthoud, R. (2000). Introduction: The dynamics of social change. In Berthoud, R. & Gershuny, J. (eds.). *Seven years in the lives of Britain's families: evidence on the dynamics of social change from the British Household Panel Survey*. Bristol: Policy Press.
- Berthoud, R. (2000). Introduction: the dynamics of social change. In Berthoud, R. and Gershuny, J. (eds.). *Seven years in the lives of Britain's families: Evidence on the dynamics of social change from the British Household Panel Survey*. Bristol: Policy Press.
- Black, E. (2011). The relationship between competitive strategies and product quality.

Journal of Industrial Management & Data Systems, 107(1), 83-86.

- Braxton, J. M. (2000). *Reworking the student departure puzzle*. Nashville: Vanderbilt University Press.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). Understanding and reducing college student departure. *ASHE-ERIC Higher Education Report*, 30(3)
- Braxton, J. M., & Lee, S. D. (2005). Toward a reliable knowledge about college student departure. In A. Seidman (Ed.), *College student retention: Formula for student success*. Westport, CT: Praeger.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2004). *Understanding and reducing college student departure*. ASHE-ERIC Higher Education Report: Volume 30, Number 3. Washington, DC: The George Washington University, School of Education and Human Development.
- Braxton, J. M., Sullivan, A. S., & Johnson, R. M. (1997). Appraising Tinto's theory of college student departure. In J. C. Smart (Ed.), *Higher education: A handbook of theory and research* (Vol. 12, pp. 107-164). New York: Agathon Press.
- Breckner, J. A. (2012). *A phenomenological study of doctoral student attrition in counselor education*. PhD Dissertation, University of Tennessee.
- Broh, B. A. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education*, 75, 69-95.
- Bryman, A., & Bell, E. (2003). *Business research methods*. USA: Oxford University Press.
- Bui, K. V. T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal*, 36(1), 3-11.
- Bunoti, S (2011). The quality of higher education in developing countries needs professional support. <http://www.intconfhighered.org/f>
- Cabrera, A. F. & La Nasa, S. M. (2001). On the path to college: Three critical tasks facing America's disadvantaged. *Research in Higher Education*, 42(2), 119-150
- Cahill, M., Hamilton, L., & Lynch, J. (2006). *Summary findings and strategic solutions for overage, under-credited youth*. New York City: New York City Department of Education.
- Cao, Z., & Gabb, R. (2006). *Student attrition at a New Generation University*. Post Compulsory Education Centre, Victoria University, Melbourne.
- Carbonaro, W. (2005). Tracking, students' effort, and academic achievement. *Sociology of Education*, 78, 27-49.

- Catsambis, S., & Beveridge, A. (2001). Does neighborhood matter? Family, neighborhood and school influences on eighth-grade mathematics Achievement. *Sociological Focus*, 43(4), 435-457.
- Chege, F. Sifuna, D., (2006). *Girls' and women's education in Kenya gender perspectives and Trends*; UNESCO 2006
- Chen X. (2005). *First generation students in postsecondary education: A look at their college transcripts* (NCES 2005-171) Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Chepchieng, M.C., (2004). Influence of institutional characteristics on student attitudes toward Campus Environment. A comparative study of public and private Universities in Kenya. (Unpublished) Ph.D Thesis, Egerton University, Njoro.
- Chiuri, L. W. and Kiumi, J. K. (2005). *Planning and Economics of Education*. Nairobi: Pangolin Publishers Ltd.
- Chowa G., Ansong D., & Osei-Akoto I. (2012). *Parental involvement and academic performance in Ghana*. CSD Publication No. 12-42
- Christenson, S., Rounds, T., & Gorney, D. (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly*, Vol 7(3), pp 178-206.
- Christie, H., M. Munro & T. Fisher. (2004). Leaving university early: Exploring the differences between continuing and non-continuing students. *Studies in Higher Education*. 29(5) pp 617-664.
- Church, S., E., (2009). Facing reality: What are doctoral students' chances of success? *Journal of Instructional Psychology*, 26, 307-316.
- Cizek G.J.& Burg S.B.(2006). Addressing test anxiety in a high-stakes environment: *Strategies for classrooms and schools*. Volume 1, Issue 2, ISSN (Online) 2161-2412,
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational Researcher*, 32(1), 9-13.
- Cohen, S. M. (2008). Aristotle's metaphysics. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (spring 2009 ed.).
- Coleman, J. S., Campbell, E. Q., Hobson, C. F., McPartland, J., & Mood, A. M. (1966). *Equality of educational opportunity*. Washington, DC: Government Printing Office.
- Commission for Higher Education (2008) *Universities authorized to operate in Kenya*. Brochure
- Commission for Higher Education (2012, *Establishment (accreditation) and quality*

assurance of Universities in Kenya. In the fourth exhibition by Kenyan Universities held at the Kenyatta International Conference Centre.

- Commission for University Education (2016) *Universities authorized to operate in Kenya.* Brochure
- Conley D. (2007). *Redefining college readiness.* Eugene, Ore: Educational Policy Improvement Center.
- Cook A., Rushton (2006). *Student transition and retention.* Published by the University of Ulster, Coleraine, Northern Ireland, BT52 1SA
- Cook, T., & Rushton, B. S. (2009). *How to recruit and retain higher education students: A handbook of good practice.* Location: Routledge.
- Cooper, D. R., & Schindler, P. S. (2006). *Business research methods* (9th ed. USA: McGraw-Hill.
- Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research*, (2nd Ed.). Upper Saddle River, NJ: Merrill/Pearson Education.
- Creswell, W.J. (2009). *Research design: Qualitative, quantitative and mixed method approaches*, 4th edition, Sage publication Ltd
- Creswell, J., & Plano Clark, V. (2007) *Designing and Conducting Mixed Methods Research.* Thousand Oaks, CA: Sage.
- Crisp, G. (2009). Conceptualization and initial validation of the college student mentoring scale. *Journal of College Student Development*, 50 (2), 177 – 191
- Crockett, Lisa J.; Moilanen, Kristin L.; Raffaelli, Marcela; and Randall, Brandy A., (2006). "Psychological profiles and adolescent adjustment: A person-centred approach" *Faculty Publications, Department of Psychology.* Paper 225.
- Davidson, W. B. Beck, H., & Milligan, M. (2009). The college persistence questionnaire: Development and validation of an instrument that predicts student attrition. *Journal of College Student Development*, 50, 373-390.
- Davis-Kean P.E. (2005) The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*. 19:294–304.
- De Berard, M. S., Spielmans, G. I. & Julka, D. L. (2004). Predictors of academic achievement and retention among college freshmen: a longitudinal study. *College Student Journal*, 38(1), 66-80.
- DeAngelo, L. Franke, R., Hurtado, S., Pryor, J.H., & Tron, S. (2011). *Completing college: assessing graduate rates at four year institutions.* Higher Education Research Institute at UCLA (HERI).

- Demetriou, C. & Schmitz-Sciborski, A. (2011). Integration, motivation, strengths and optimism: Retention theories past, present and future. In R. Hayes (Ed.), *Proceedings of the 7th National Symposium on Student Retention, 2011, Charleston*. (pp. 300-312). The University of Oklahoma.
- Dennis, J. M. Phinney J.S., Chuateco, L. Ivy.(2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation College Students. *Journal of College Student Development, Volume 46, Number 3*,
- Denovan, A., & Macaskill, A. (2012). An interpretative phenomenological analysis of stress and coping in first year undergraduates. *British Journal of Educational Research, 39* (6), 1002-1024.
- Dufresne, J. (2005). Keeping students and schools safe. *Reclaiming Children and Youth. 14*(2), 93-96
- Engstrom, C, & V. Tinto (2001). Building collaborative partnerships with student affairs to enhance student learning” in M. Barr (ed.) *Handbook for student affairs administrators*. San Francisco: Jossey-Bass Inc.
- Fejgin, N. (1994). Participation in high school competitive sports: A subversion of school mission or contribution to academic goals? *Sociology of Sport Journal, 11*, 211-30.
- Feuerstein, R. (2000). Mediated learning experience, instrumental enrichment and the learning propensity assessment device. In Interdisciplinary Council on Developmental and Learning Disorders (ICDL), *Clinical practice guidelines: Redefining the standards of care for infants, children and families with special needs* (pp. 557-578). Washington, DC: ICDL Press.
- Flanders, G (2013). The effect of course completion within selected major on persistence for Freshman College Students, Unpublished Dissertation, University of Phoenix.
- Fleming, W. J., Howard, K., Perkins, E., & Pesta, M. (2005). The college environment: Factors influencing student transition and their impact on academic advising. *The Mentor, 7*, 1-9.
- Freeman J.P., Hall E.E., & Bresciani, M.J. (2007). What leads students to have thought to talk to someone about, and to take steps to leave their institutions. *College Student Journal 41*(4) 755-770
- Furnham, A., T. Chamorro-Premuzic, & McDougall F. (2003). Personality, cognitive ability, and beliefs about intelligence as predictors of academic performance. *Learning and Individual Differences 14*(1), 47-64.
- Gardner S.K., (2010). Contrasting the socialization experiences of doctoral students in high- and low-completing departments: A qualitative analysis of disciplinary contexts at one institution. *The Journal of Higher Education, 81*(1):61-81

- Gardner, S. K. (2008). Student and faculty attributions of attrition in high and low-completing doctoral programmes in the United States. *High Education*, 58: 97-112.
- Graham, S. (1997). Using attribution theory to understand social and academic motivation in African American youth. *Educational Psychologist*, 32(1), 21-34.
- Gudo, C., (2014). Financing higher education in Kenya: Public–Private partnership approach. *International Journal of Educational Policy Research and Review Vol.1 (1)*, pp. 001-005.
- Guerra N.G, Huesmann L.R. (2004) A cognitive-ecological model of aggression. *International Review of Social Psychology*.17:177–203.
- Guest, A., & Schneider, B. (2003). Adolescents' extracurricular participation in context: The mediating effects of schools, communities, and identity. *Sociology of Education*, 76, 89-09.
- Gujarati, N.D. (1995). *Basic econometrics*. 3rd ed. New York, McGraw-Hill, Inc
- Hagedorn, L.S. (2005). How to define retention: *A new look at an old problem. Unpublished reports from 'The transfer and retention of urban community college students (TRUCCS)*. Los Angeles.
- Havighurst, R. J. (1975). Youth in social institutions. In R. J. Havighurst, & P. H. Dreyer (Eds.). *Youth : The seventy-four yearbook of the national society for the study of education* (pp.115-144).Chicago, Illinois : University of Chicago Press. LB 5 .N25 74th
- Hamilton, S. F., & Hamilton, M. A. (2006). School, work, and emerging adulthood. In J. Arnett & J. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 257-277). Washington, DC: American Psychological Association
- Henderson, A. T. & Berla, N. (2004). *A new generation of evidence: The family is critical to student achievement*. Washington DC: National Committee for Citizens in Education
- Herman, C. (2011). Obstacles to success –doctoral student attrition in South Africa. *Perspectives in Education*, 29 (3), 40-52.
- Hermanowicz, J. C. (2003). *College attrition of American research universities: Comparative case studies*. United States: Agathon.
- Herzog, S. (2005). Measuring determinants of student return vs. dropout/stopout vs. transfer: A First-to-Second Year Analysis of New Freshmen. *Research in Higher Education*, 46(8), 883-928.

- Hicks, T., & Heastic, S. (2008). High school to college transition: A profile of stressors, physical and psychological health issues that affect the first-year on-campus college student. *Journal of Cultural Diversity*, 15, 143-147.
- Hong, S. & Ho, H.Z. (2005). Direct and indirect longitudinal effects of parental involvement on student achievement: Second-order latent growth modeling across ethnic groups. *Journal of Educational Psychology*, 97 (1), 32-42.
- Hossler D., Schmit J., Vesper, N. (1999). *Going to college: How social, economic and educational factors influence the decisions students make*. Baltimore, MD: Johns Hopkins University Press.
- Hu, L.T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, (6)1, 1-55.
- Huntley, C. & Denovan, J. (2009). Developing academic persistence in first year tertiary students: A case study. *Studies in Learning, Evaluation, Innovation and Development* (1) 1-14
- Hutt, R. (2012). "The Influence of Environmental and Psychological Factors on University Attrition" *ETD Collection for Pace University*. Paper AAI3506529.
- Hysenbegasi, A., Hass, S., & Rowland, C. (2005). The impact of depression on the academic productivity of university students. *Journal of Mental Health Policy and Economics*, 8, 145-151.
- Isaacson R. M. and Fujita F., (2006.) Metacognitive knowledge monitoring and self-regulated learning: Academic success and reflections on learning. *J. Scholarship Teach Learn*, 6, 39-55.
- Ishitani, T. T., & DesJardins, S. L. (2002). A longitudinal investigation of dropout from colleges in the United States. *Journal of College Student Retention*, 4(2), 173-201.
- Jackson, D. (2003). Revisiting Sample Size and Number of Parameter Estimates: Some Support for the N:q Hypothesis *Structural Equation Modeling: A Multidisciplinary Journal Vol. 10 , Iss. 1,2003*
- James A.O. (2012). Validity and reliability issues in educational research. *Journal of Educational and Social Research*, (2)2.
- Jeynes W., (2003). Meta-analysis of the relation of parental involvement to urban school students'. *Academic Performance-Urban Education* 43, 202-218
- Jiranek V. (2010). Potential predictors of timely completion among dissertation research students at an Australian faculty of sciences. *International Journal of Doctoral Studies*, 5:1-13.

- Johnson, J. (2001). Learning communities and special efforts in the retention of university students: What works, what doesn't, and is the return worth the investment? *Journal of College Student Retention*, 2(3), 219-238.
- Johnson, M. K., Crosnoe, R., & Elder, G. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education*, 74, 318-40
- Johnson, R., Onwuegbuzie, A. & Turner, L. (2007). Toward a definition of mixed methods research", *Journal of Mixed Methods Research*, Vol,1 (2), 112-133
- Kem- Lee D., Krause (2007). Social involvement and commuter students: the first year voice. *Journal of the First Year Experience and Student Transition*. University of State Carolina vol.19
- Kenya Vision 2030*, Nairobi: Government of the Republic of Kenya.
- Khuong, H,(2014) "Evaluation of a Conceptual Model of Student Retention at a public Urban Commuter university "Dissertations. Paper 1092.
- Kiboiy, K.L. (2013). *The dynamics of student unrests in Kenya's higher education: The case of Moi University*. PhD thesis, University of Pretoria, Pretoria.
- Kift, S. (2014) Student success: Why first year at university is a make-or-break experience. *The Conversation* (40 22 -38).
- Kim, Y. K. & Sam, L. J. (2009). Student-faculty interaction in research universities: differences by student gender, race, social class, and first-generation status. *Research in Higher Education*, 50, 437-459.
- Kline, R.B. (2011). *Principles and practice of structural equation modeling*. 3er edition, New York, the Guilford Press.
- Komarraju, M., Musulkin, S., & Bhattacharya, G. (2010). Role of student-faculty interactions in developing college students' academic self-concept, motivation, and achievement. *Journal of College Student Development*, 51(3), 332-342.
- Kothari, C. (2004). *Research methodology: Methods & techniques*, 2nd edition. New Delhi: New Age International Publishers.
- Kuh G.D., Cruce T. M., Shoup R., & Kinzie, J,. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), 540-563.
- Kuh, G. D. (2003). What we're learning about student engagement From NSSE: Benchmarks for Effective Educational Practices. *Change*, 35(2), 24-32.
- Kuh, G. D. (2005). Student engagement in the first year of College. *In challenging and supporting the first-year student: A handbook for improving the first year of College*, edited by M. L. Upcraft, J. N. Gardner, San Francisco: Jossey-Bass.

- Kyalo and Chumba (2011). Selected factors influencing social and academic adjustment of undergraduate students of Egerton University; Njoro Campus. *International Journal of Business and Social Science*. Vol. 2 No. 18
- Lambert, Rocconi, Ribera, Miller & Dong. (2008). Barriers in returning to learning: Engagement and support of adult Learners: *Paper presented at the Annual Forum of the Association for Institutional Research Denver, Colorado May, 2015*
- Lau, L. K. (2003). Institutional factors affecting student retention. *Education*, 124(1), 126–136.
- Lee, J.J., Sax, L.J., Kim, K., & Hagedorn, L.S. (2004). The role of parental education and its effects among community college students. *Community College Review*, 32(1), 1-20.
- Letseka M, Maile S. (2008) High university dropout rates: A threat to South Africa's future. Pretoria: Human Science Research Council; p. 1–7.
- Lewin, T. (2011) Incentives offered to raise college graduation rates. *The New York Times*. Retrieved from <http://www.nytimes.com//education/22college.html>
- Lovitts, B. E. (2001). *Leaving the ivory tower: The causes and consequences of departure from doctoral study*. Lanham, M.D: Rowman and Littlefield.
- Maina J. (2008). Influence of head teachers' administrative strategies on teachers' motivation in public secondary schools in Kieni East District, Kenya. erepository.uonbi.ac.ke
- Mairura O. (2010). Nairobi - Emerging Metropolitan Region: Development planning and Management: Opportunities and challenges. *Nairobi Metropolitan Region, 46th ISOCARP Congress* Pp.6
- Marks, H. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high schools years. *American Educational Research Journal*, 37, 153-84.
- Marsh, H. W. (1992). Extracurricular activities: Beneficial extension of the traditional curriculum or subversion of academic goals? *Journal of Educational Psychology*, 84, 553-562.
- McCarron G.P, & Inkelas K.K. (2006). The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement. *Journal of College Student Development*, 47:534–549
- McIntosh, B., Wilson, L., & Lipinski, B. (2012). The extent and nature of student attrition in the first five years at Simon Fraser University. *Canadian Journal of Counseling and Psychotherapy / Revue Canadienne De Counseling Et De Psychothérapie*, 8(3).

- McLaughlin A.N., & Randolph KA. (2012). Development of the school support scale for low- income mothers in college. *Research on Social Work Practice*, 22: 68–76.
- McNeal, R. B. (1995). Extracurricular activities and high school dropouts. *Sociology of Education*, 68, 62-81.
- Metz, G. (2002). *Challenges and changes to Tinto's persistence theory*. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association (ED 471529).
- Metz, G. W. (2005). Challenge and changes to Tinto's persistence theory: A historical review. *Journal of College Student Retention: Research, Theory & Practice*, 6(2), 191-207.
- Ministry of Higher Education, Science and Technology (2012). *Sessional paper of 2012, Policy framework for education and training: Reforming Education and Training in Kenya*.
- Ministry of Education Strategic Plan 2008-2012, (2008). *Towards a globally competitive and prosperous Kenya*. Nairobi, Government printer.
- Mouton, J. (2011) Doctoral production in South Africa: Statistics, challenges and responses. *Perspectives in Education* 29(3): 13–29
- Muckert, T. (2002). *Investigating the student attrition process and the contribution of peer- mentoring interventions in an Australian first year university program*. Unpublished Doctor of Philosophy, Griffith University, Brisbane. [http:// - QGU20030226.171200/public/02Whole](http://QGU20030226.171200/public/02Whole).
- Mugenda, A. G. (2008). *Social science research: Theory and principles*. Nairobi, Applied Research and Training Services.
- Mugenda, O.M. & Mugenda, A.G. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi: African Centre for Technology Studies.
- Mutula, S. M. (2002). University education in Kenya: Current developments and future outlook. *International Journal of Educational Management* 16(3), 109-111.
- Mwebi B., Simatwa E.M.W. (2013) Expansion of private Universities in Kenya and its implication on quality and completion rate: an analytical study. *Educational Research* (4) 352-366
- Mwinzi, D. (2002). *The impact of cost-sharing policy on the living conditions of students in Kenyan public universities: A case study of Nairobi and Moi Universities*. A paper presented at the 28th Annual International Symposium

- Mwiria K. & Ngome, (1998). The World of private universities: the experience of Kenya; network for international policies and cooperation in education and training. *NORRAG News*, (23).
- Mwiria, K. (2007). *Public and private universities in Kenya Publication*: Nairobi: Oxford.
- Mwiria, K., (1988) Varsity degree: The ticket to a good life. *Publication*, Vol 4, 17.
- Mwiria, K., (2003): University governance and university state relations': *In Africa Higher Education. An international reference book*, ed. Damtwe, Teffera and Phillip G. Altabach. Bloomington: Indiana University Press.
- Mwiria, K., Ng'ethe, N., Ngome, C., Ouma-Odero, D., Wawire, V., Wesonga, D. (2007). *Public and private universities in Kenya: New challenges, issues and achievements*. James Currey: East African Educational Publishers,
- Nassiuma D. K. (2000). *Survey sampling: Theory and methods*. Njoro, Kenya: Egerton University Press.
- Natriello, G., & McDill, E. L. (1986). Performance standards, student effort on homework, and academic achievement. *Sociology of Education*, 59, 18-31.
- Neck, C.P., & Manz, C. C. (2010). *Mastering self-leadership: Empowering yourself for personal excellence* 5th edition. New Jersey: Prentice Hall
- Neuman, W. L. (2006). *Social research methods: Quantitative and qualitative approaches* (6th ed.). Boston: Allyn and Bacon.
- Newton, R., R. (2002). For-profit and traditional institutions: A comparison. *International Higher Education*, No.1 pp.17-19.
- Ngome, C., (2003). Kenya: In Africa higher Education. *An international reference book (ed)*. Damtwe, Teffera and Phillip G. Altabach. Bloomington: Indiana university press.
- Nora, A., (2001). The depiction of significant others in Tinto 'rites of passage': A reconceptualization of the influence of family and communicating in the persistence process. *Journal of College Students Retention*, 3 (1) 41-56.
- Nunnally, J. C. (1974). *Psychometric theory (2nd Ed.)*. New York: McGraw-Hill.
- Nyarko, K. (2011). Parental school involvement: The case of Ghana. *Journal of Emerging Trends in Educational Research and Policy Studies*, 2(5), 378-381
- Nyarko, K., & Vorgelegt, V. (2007). Parental involvement: A sine qua non in adolescents' educational achievement. Unpublished doctoral dissertation, Ludwig-Maximilians University.

- Odebero, S.O (2010). Crisis in Financing and Management of Kenyan Higher education. *Journal of College Student Personnel*, 25, 518-539. *Education: Implications for Planning Reform agenda*. Paper presented at Educational Management Society of Kenya Conference held at Migori Teachers College, 12th -14th April 2010
- Odhiambo, G. (2014). The challenges and future of public higher education leadership in Kenya. *Journal of Higher Education Policy and Management*, 36(2), 183-195.
- Okwilagwe E.A., (2002). Nigerian students' perception of academic departments as a teaching and learning environment. *An Interdisciplinary International Research Journal*, 68, 1-14
- Onwuegbuzie A.J. & Leech N.L. (2005) On Becoming a Pragmatic Researcher: The Importance of Combining Quantitative and, *International Journal of Social Research Methodology*, 8:5, 375-387, DOI: 10.1080/13645570500402447
- Orodho, J., A., (2003). *Essentials of educational and social Science research method*. Nairobi: Masola Publishers.
- Oseguera, L. & Rhee, B. S. (2009). The influence of institutional retention climates on student persistence to degree completion: A multilevel approach. *Research in Higher Education*, 50(6), 546-569.
- Otieno, J. J., Kiamba, C., & Some, D. K. (2008). Kenya. In D. Teferra & J. Knight (Eds.), *Higher education in Africa: The international dimension*, (pp. 238-261). Boston, MA: Centre for International Higher Education.
- Pace, C. R. (1980). *Measuring the quality of student effort. Improving teaching and institutional quality. Current issues in higher education (No. 1)*. Washington, DC: American Association for Higher Education.
- Parcel T. L J. Dufur, M. J.,(2001) Capital at home and at school, the effect of student achievement. *Social Forces*, 79(3), 881-911.
- Pascarella, E. (1980). Student-faculty informal contact and college outcomes. *Review of Educational Research*, 50, 545-95.
- Pascarella, E. T., & Chapman, D. (1983). A multi-institutional path analytical validation of Tinto's model of college withdrawal. *American Educational Research Journal*, 20, 87-102.
- Pascarella, E.T., & Terenzini, P.T. (2005). *How college affects students: Vol. 2 A decade of research*. San Francisco: John Wiley & Sons, Inc.
- Pascarella, E. & Terenzini, P. (1979). Interaction effects in Spady's and Tinto's conceptual models of college dropout. *Sociology of Education*, 52, 197-210.

- Pascarella, E. T., & Terenzini, P. T. (1978). Student-faculty informal relationships and freshman year educational outcomes. *Journal of Educational Research*, 71, 183- 189.
- Paul.M. (2014). Polishing the Thinking on the Role of Open and Distance Learning in Socio-Economic Development: Exposing the Missing Functions of Higher Education *Mediterranean Journal of Social Sciences* Vol 5 No 11, June 2014.
- Peaker, G. (1971). *The Plowden children four years later*. London: National Foundation for Educational Research.
- Pike, G. R. & Kuh, G. D. (2005). First- and second- generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education*, 76(3), 276 – 300
- Pocock J. Leaving rates and reasons for leaving in an Engineering faculty in South Africa: A case study. *S Afr J Sci*. 2012;108(3/4).
- Polit, D. F., & Hungler, B. P. (1995). *Nursing research: principles and methods*. Philadelphia: Lippincott.
- Pritchard, M. E., & Wilson, G. S. (2003). Using emotional and social factors to predict student success. *Journal of College Student Development*, 44(1), 18-28.
- Reason, R.D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development* 50(6), 659-682.
- Registrar Report, UoN, (2012). Published on University of Nairobi (<http://www.uonbi.ac.ke>)
- Reitzes, D.C., & Mutran E., J., (2004) The transition to retirement: stages and factors that influence retirement adjustment. *International Journal of Aging and Human Development* 59 (11) 63-84.
- Rodriguez, N. (2003). Redirecting the academic success of Mexican American and White college students. *Hispanic Journal of Behavioral Sciences*, 18(3), 329-342.
- Rumberger R. & Lim, S.A., (2008). Why students drop out of school: A Review of 25 Years of Research. *California Drop out Research Project*. 4277 Sount Hal.
- Rumberger R. W., Palardy, G. J., (2005). Test scores, dropout rates, and transfer rates as alternative indicators of high school performance. *American Educational Research Journal* Spring 2005, 42 (1), 3–42.
- Ryan, M. P. & Glenn, P. A. 2004. What do first-year students need most: learning strategies instructions or academic socialization? *Journal of College Reading and Learning*, 32 (4). 4-28.

- Saklofske, D. H., Austin, E. J., Mastoras, S. M., Beaton, L., & Osborne, S. E. (2012). Relationships of personality, affect, emotional intelligence and coping with student stress and academic success: Different patterns of association for stress and success. *Learning and Individual Differences*, 22, 251-257.
- Sarason, I.G., Sarason B.R. & Pierce, G.R. (1990). Social support: The search for theory. *Journal of Social and Clinical Psychology* 9, 133-147
- Saunders M., Lewis, P., and A., Thornhill (2013). *Research methods for Business students*, (5th Edition). India: Pearson Education.
- Schlosser, L. Z., Knox, S., Moskowitz, A. R., & Hill, C. E. (2003). A qualitative examination of graduate advising relationships: The advisee perspective. *Journal of Counseling Psychology*, 50(2), 178–188.
- Schneider, M. & Yin, L. (2011). The hidden costs of community colleges. *American Institute for Research*, available at www.air.org
- Schneider, M. (2010). *Finishing the first lap: The cost of first-year student attrition in America's four-year colleges and universities*. Washington, DC: American Institutes for Research.
- Seiffge-Krenke, I., Overbeek, G., & Vermulst, A. (2010). Parent–child relationship trajectories during adolescence: Longitudinal associations with romantic outcomes in emerging adulthood. *Journal of Adolescence*, 33, 159–171
- Sewasew, D., T., (2014). *Attrition causes among university students: The case of Gondar University, Gondar, North West Ethiopia*. *Innovare Journal of Social Sciences* Vol 2, (2) 67-93.
- Smerdon, B. (1999). Engagement and achievement: Differences between African-American and White high school students. *Research in Sociology of Education and Socialization*, 12, 103-134.
- Smith, B., MacGregor, J., Matthews, R., & Gabelnick, F. (2004). *Learning communities: Reforming undergraduate education*. San Francisco: Jossey-Bass.
- Spady, W. G. (1971). Dropouts from higher education: Toward an empirical model. *Interchange*, 2(3), 38-62.
- Stallone, M., N., (2004). *Factors associated with student Attrition and retention in an educational leadership doctoral program*. Clute Institute. Strategies instruction or academic socialization? *Journal of College Reading*
- Swail, W. S. (2004). *The art of student retention: A handbook for practitioners and administrators*. Austin, TX: Educational Policy Institute.
- Taylor, J., & Bedford, T. (2004). Staff perceptions of factors related to non-completion in higher education. *Studies in Higher Education*, 29(3), 375-394

- Teferra, D. & Altbach, D. (Eds.). (2003). *African higher education: An international reference handbook*. Bloomington, Indiana: Indiana University Press.
- Teferra, D., & Altbach, P. (2004). African higher education: challenges for the 21st century. *Higher Education*, 47, 21-50.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1) 89-125.
- Tinto, V. (1987). *Leaving College: Rethinking the causes and cures of student attrition*. Chicago: The University of Chicago Press.
- Tinto, V. (1993). *Leaving College: Rethinking the causes and cures of student attrition*, 2nd ed. Chicago: University of Chicago Press.
- Tinto, V. (1999). Taking retention seriously: Rethinking the first year of college. *NACADA Journal*, 19(2), 5-9.
- Tinto, V. (2003). Establishing conditions for student success in Thomas, L., Cooper, M. and Quinn, J. (eds) *Improving completion rates among disadvantaged students*. Stoke on Trent: Trentham Books
- Tinto, V. (2007). Research and practice of student retention: what next? *Journal of College Student Retention: Research, Theory and Practice*, 8(1), 1-19.
- Tinto, V. (2012) *Complete college: Rethinking institution action*. The University of Chicago press: Chicago.
- Tiruneh, W.A., Petros, P. (2014). Factors affecting female students' academic performance at higher education: The case of Bahir Dar University, Ethiopia. *African Educational Research Journal*, 2(4), 161-166.
- Topor, D. R., Keane, S. P., Shelton, T. L., & Calkins, S. D.(2010). Parental involvement and student academic performance: A multiple mediational analysis. *Journal of Prevention and Intervention Community*, 38(3), 183-197.
- Tseng, V. (2004). Family interdependence and academic adjustment in college: Youths from immigrant and U.S born families. *Child Development*, Vol 75 (3), 966-983
- UNESCO (2006). UNESCO Global Education Statistics. Available at: <http://stats.uis.unesco.org>
- UNESCO (2013). UNESCO Global Education Statistics. Available at: <http://stats.uis.unesco.org>
- Verbeek M. (2004) *A guide to modern econometrics*. John Wiley and Sons Ltd. The Atrium Southern Gate, Chichester West Sussex PO19 1SQ England
- Wanyoike, W. (2003). *Understanding youth and family: From Christian perspective*. Nyeri, Kenya: Wilson Wanyoike Publishers

- Weiner B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational Psychologist*, 45(1), 28-36.
- Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educational Psychology Review*, 12(1), 1-14.
- Wells, M. I. (2007). Dreams deferred but not deterred: A qualitative study on undergraduate nursing student attrition. *Journal of College Student Retention: Research, Theory and Practice*, 8(4), 439-456.
- Whannel R. (2013) Predictors of attrition and achievement in a tertiary bridging program: *Australian Journal of Adult Learning*, Vol 53 (2), pp123-147
- Williams T., (2012). Sense of belonging and student success: An analysis of student experiences in South African universities. Thesis submission, University of New Orleans
- World Bank (2000). *Higher Education in developing countries: Peril and promise*. Washington DC.
- Wrigley, J. (1995). *Education and gender equality*. London: The Palmer press.
- Wylie, J.R. (2005). Non-traditional student attrition in higher education: *A theoretical model of separation, disengagement then dropout*. Paper presented for the Australian Association for Research in Education.
- Yang, B., & Lu, D. R. (2001). Predicting academic performance in management education: An empirical investigation of MBA success. *Journal of Education for Business*, 77, 15-21
- Zajacora A., Lynch S.M.& Espeneshade T.J. (2005). Self-efficacy, stress and academic success in college. *Research in Higher Education*, Vol. 46, No. 6
- Zepke, N., & Leach, L. (2005). Integration and adaptation: Approaches to the student retention and achievement puzzle. *Active Learning in higher Education*, 6(46), 46-49
- Zikmund, G.W., Babin, B.J., Carr, C.J. & Griffin, M. (2010). *Business research methods* 8th ed. South-Western: Cengage Learning.

LIST OF APPENDICES

Appendix A: Letter of introduction

Date.....

Vice Chancellor,

(Name of University.....)

P O BOX (address to be supplied)

Dear Sir/Madam,

Re: Collection of Research Data

I am writing to request that you kindly allow me to gather data in your institution.

My name is Mukami Njoroge and I am currently pursuing a PhD. in Educational Psychology at Strathmore University. I am interested in understanding why some students take longer than the stipulated time to complete a degree program.

Attached is a letter of no objection from Strathmore University and National Council for Science and Technology. The information gathered will be treated with utmost confidentiality and the findings used exclusively for academic purposes.

Should you want me to, I will submit the final study for your library collection.

Thanking you in advance,

Yours Sincerely,

Mukami Njoroge

University

Code _____

Appendix B: Students self-report questionnaire

Dear Participant,

My name is Mukami Njoroge and I am a graduate student from Strathmore University. For my thesis I am investigating the factors responsible for delays in graduating from universities. I am inviting you to participate in the research by completing the following questionnaire. Please answer all questions as honestly as possible and hand back the questionnaires to me.

Your responses will be coded to conceal identity and will be managed confidentially.

Thank you in anticipation.

Mukami Njoroge

Questionnaire Serial Number			
Date of Interview	/ /2015		
Interviewer Name			
QUALITY CONTROL (TICK APPROPRIATELY)			
Accompanied	<input type="checkbox"/>	Back checked	<input type="checkbox"/>
		Edited	<input type="checkbox"/>

SECTION A: BACKGROUND INFORMATION

I. GENERAL BACKGROUND

Indicate the correct response by ticking the correct box.

i. Kindly indicate your gender

a.	Male	01
b.	Female	02

ii. Please indicate your age bracket

a.	Under 18 years	01
b.	18 to 20 years	02
c.	21 to 25 years	03
d.	26 to 30 years	04
E	31-35 years	05
F	Above 35 years	06

iii. Please indicate your degree program and year of study

Degree program	Year of study			
	1	2	3	4

2. FAMILY BACKGROUND (Home Factors)

iv) Level of Education	Mother	Father
No Schooling	01	01
Primary School	02	02
Secondary School	03	03
Certificate/diploma	04	04
University	05	05
Other (specify)	06	06

v) Occupation	Mother	Father
Executive/managerial	01	01
Professional	02	02
Civil servant	03	03
Retired	04	04
Prefer not to answer	05	05
Other (specify)	06	06

vi) Type of Parent	
Both Married	01
Single	02
Divorced	03
Deceased	04

Vii) Using the table below, choose the income bracket for your family [*e.g. circle "7" if the family income (both mother and father combined) is between KES 250,001 to KES 300,000*]

1. Below KES 15,000	8. KES 300,001 to KES350,000
2. KES 15,001 to KES 50,000	9. KES 350,001 to KES 400,000
3. KES 50,001 to KES100,000	10. KES 400,001 to KES 450,000
4. KES 100,001 to KES 150,000	11. KES 450,001 to KES500,000
5. KES 150,001 to KES 200,000	12. Above KES500,000
6. KES 200,001 to KES250,000	
7. KES 250,001 to KES 300,000	

SECTION B

STUDY VARIABLES

In the following section there are statements related to the study variables which you are kindly requested to indicate your honest view on each.

UNIVERSITY STUDENTS' ATTRITION

3) How many times have you ever had to retake an examination paper?

Never	01
Once	02
Two times	03
Three times	04
Four times	05
Five times	06
More than five times	07

4 a) Have you ever had to defer semesters?

Never	01
Once	02
Two times	03
Three times	04
Four times	05
Five times	06
More than five times	07

b) Do you know someone in your year of study who ever dropped out of University?

Yes	01	Request for the contact..07_____
No	02	

c) What are some of the reasons that you know made them drop out of university?

5) Indicate the extent to which you agree with the following statements based on the scale shown below: (University Student Attrition)

No	Statement	Strongly	Disagree	Disagree	Neutral	Agree	Strongly
		1	2	3	4	5	Agree
A	The delay of university students to complete their degree programme is a great societal problem	1	2	3	4	5	
B	Universities should conduct regular professional and social talks to students to control for university examination retakes.	1	2	3	4	5	
C	I have at least had one temptation to drop out of university	1	2	3	4	5	
D	University student counselling department should incorporate student rehabilitation programmes in their curriculum	1	2	3	4	5	
E	Examination oriented curriculum can lead to student frustrations which can trigger drop out	1	2	3	4	5	
F	Wrong career choice especially dictated by parents can make a student to thinking to dropping out of university	1	2	3	4	5	
G	Issues on university student dropouts are never discussed in my university	1	2	3	4	5	

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
H	Given a free chance I will opt out of university education	1	2	3	4	5

INDIVIDUAL FACTORS

6) Indicate the extent to which you agree with the following statements

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4	5
b	If someone opposes me, I can find the means and ways to get what I want.	1	2	3	4	5
c	Advice from my peers in the university can sway students into wrong decisions	1	2	3	4	5
d	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4	5
e	I have the feeling that studying is difficult and I may become a drop out	1	2	3	4	5
f	I am confident that I could deal efficiently with unexpected events.	1	2	3	4	5
g	I can solve most problems if I invest the necessary effort.	1	2	3	4	5
h	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4	5
i	When I am confronted with a problem, I can usually find several solutions.	1	2	3	4	5
j	I can usually handle whatever comes my way.	1	2	3	4	5

UNIVERSITY ENVIRONMENTAL FACTORS

7) Indicate the extent to which you agree with the following statements

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	I know where to look for help in case I run into academic problems	1	2	3	4	5
b	I have adequate access to books, computers and other educational facilities	1	2	3	4	5
c	I find the courses I am taking more difficult than I originally thought.	1	2	3	4	5
d	I find university environment somewhat isolated from the rest of society	1	2	3	4	5
e	I always have leisure time as a way to release stress related to my studies and life	1	2	3	4	5
f	Due to growing workload in the university I spare more time for studies than anything else in my life	1	2	3	4	5
g	University offers a lot of freedom to us which if not well managed can lead to harmful activities and decisions	1	2	3	4	5
h	I have joined a club in the university to ensure that my free time is well spent	1	2	3	4	5
i	I like growing and practicing my hobbies during my free time in the university	1	2	3	4	5
j	The university calendar of extracurricular activities is loaded with many things that can occupy me productively	1	2	3	4	5
k	I have access and frequently interact frequently with lecturers with regards to academic matters	1	2	3	4	5

HOME FACTORS

8) Indicate how much you agree with the following statements

No	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	My parents visit me at school	1	2	3	4	5
b	My parents/guardian request for my transcripts and generally follow my university progress	1	2	3	4	5
c	My parents/guardian provide books and other educational material at home	1	2	3	4	5
d	My parents/guardian support me in searching for attachment/internship or job related experience whenever the opportunity arises	1	2	3	4	5
e	My parents/guardian believe and expect me to support them in the future during their old age	1	2	3	4	5
f	My siblings look up to me for guidance on educational matters	1	2	3	4	5
g	My parents/guardian believe that I will get a good job and become successful in the future because I have a degree	1	2	3	4	5
h	My relatives see university as a way to get into an interesting and satisfying career.	1	2	3	4	5
i	I believe that I have a close relationship with my parents/ guardian.	1	2	3	4	5
j	My parents/guardian are able to guide be adequately in relating to my academic problems.	1	2	3	4	5

9. In your view to what extent is parental educational level related to university students' academic achievement?

.....

.....

.....
.....
10. What in your opinion is the role of lecturer -student interaction in students completing a degree program within a given date?

.....
.....
.....
.....

11. How would you feel if you were unable to complete or delay in getting your University degree

.....
.....
.....
.....

12. In your opinion what would be the consequences of your failure to complete or delay in getting your University degree.

.....
.....
.....

Thank you for your Participation

Kindly circle the Respondents University in the code on page one as per the code list below

Private Universities in Nairobi	CODE
University of Eastern Africa, Baraton	01
Catholic University of Eastern Africa (CUEA)	02
Daystar University	03
United States International University	04

Africa Nazarene University	05
Kenya Methodist University	06
St. Paul's University	07
Pan Africa Christian University	08
Strathmore University	09
Mount Kenya University	10
Great Lakes University of Kisumu	11
KCA University	12

Appendix C: Key informants -IDI schedule

Head of Academic department

Dear Participant,

My name is Mukami Njoroge and I am a graduate student from Strathmore University. For my thesis I am investigating the factors responsible for delays in graduating from universities. The particular factors which I am interested in are home, individual and university environment factors. I am inviting you to participate in the research.

Your responses will be managed confidentially.

Thank you in anticipation.

Position:.....

Period in current working station:.....

Gender.....

Date of Interview:.....

Venue of interview:.....

Questions

- i. In your view, how does the choice of an academic programme influence attrition? (Individual factors)
- ii. To what extent do you think academic achievement or lack of it is related to students' attrition? (Student Attrition)
- iii. In your view, how does adequacy of facilities impact on students' attrition rates? (University Environment Factors)

Appendix D: Key informants -IDI schedule

Research Topic: Determinants of Student Attrition in Private Universities in Nairobi County, Kenya; Home, Individual and University Environmental Factors

Head of non-Academic activities-Dean of students

Dear Participant,

My name is Mukami Njoroge and I am a graduate student from Strathmore University. For my thesis I am investigating the factors responsible for delays in graduating from universities. The particular factors which I am interested in are home, individual and university environment factors. I am inviting you to participate in the research.

Your responses will be managed confidentially and ethically.

Thank you in anticipation.

Position:.....

Period in current working station:.....

Gender.....

Date of Interview:.....

Venue of interview:.....

Questions

- i. **In your opinion, how does parental support impact on students' attrition? (Home Factors)**
- ii. **In your view, what is the relationship between a student's involvement in non-academic activities and academic achievement? (University Environment Factors)**
- iii. **To what extent in your view does peer support relate to students' attrition? (Individual Factors)**

Appendix E: Structured interview schedule-for faculty members

Research Topic: Individual, home and university environmental factors as correlates of student attrition in private universities in Nairobi County, Kenya.

Dear Participant,

My name is Mukami Njoroge and I am a graduate student from Strathmore University. For my thesis I am investigating the factors responsible for delays in graduating from universities. The particular factors which I am interested in are home, individual and university environment factors. I am inviting you to participate in the research.

Your responses will be managed confidentially.

Thank you in anticipation.

SECTION A: PERSONAL AND BACKGROUND INFORMATION

- 1 For how long have you been teaching in this university
- 1 Less than one year
 - 2 One to three years
 - 3 More than three years

SECTION B: FACULTY SUPPORT AND ATTRITION

- 2 How would you rate your interaction with your students:
- Excellent
 - Very good
 - Good
 - Fairly
 - Poor
3. In your opinion, is faculty support related to students attrition

.....

4. Please provide any other information that you feel will be useful for this study

.....

.....

.....

.....

Appendix F: Telephonic interview guide (Dropouts)

Respondent Code:

Date of Interview:

Time of interview:

General Background information

Gender:

Age:

Parental level of education(give choices as per section 2 iv of questionnaire)

Estimated parental income(give choice as per section 2 vii of questionnaire)

Dropped Degree program

1. In your view to what extent is parental educational level related to university students' academic achievement?
2. What in your opinion is the role of lecturer -student interaction in students completing a degree program within a given date?
3. How would you feel if you were unable to complete or delay in getting your University degree
4. In your opinion what would be the consequences of your failure to complete or delay in getting your University degree

Appendix G: Participating universities

University	No. of students
1 University of Eastern Africa	19
2 CUEA	20
3 Daystar	41
4 USIU	21
5 African Nazarene	12
6 Kenya Methodist	42
7 Pan African Christian University	20
8 Strathmore University	19
9 Mount Kenya university	35
10 Zetech University	45
11 KCA	39
12 St. Paul's University	26
13 KIPS	14

Appendix H: Interview Schedule-Faculty

Interview	Date	Venue	Respondent type			
			Administrator	Dean	Lecturer	Staff
1	4.5.15	Africa Nazarene University				The value of parents' involvement in a student's academic life cannot be understated. It is easy to notice from far, students whose parents care about what happens to them at university as opposed to those students who are going the journey alone. Yes...parents' involvement is absolutely necessary'. (Personal interview, staff)
2	5.5.15	USIU			'These students are just naughty. They prefer playing with their phones than taking time to seek out a lecturer and iron out areas which are not clear. I can tell you that it is highly unlikely that a student who asks and is concerned about his CAT mark for example will fail an exam if he/she talks to the lecturer about it.' (Interview data of lecturer)	
3	15.5.15	Mt Kenya University			'Faculty often acts as student mentors for both academic and personal issues. Those students, who drop out of university or who find that they had been deferred for a semester or had to repeat an examination, usually do not bother to create a relationship with lecturers. I would say that it is important for student to seek faculty support.' (Interview data of lecturer)	
4	16.5.15	KCA University				'Students complain that parents do not understand them. They say that parents are unwilling to give guidance on career choice and look upon the students as grown-ups who should make own decisions. An attitude like that from parents is bound to make the students feel lostSuch are the kind of students who were likely to drop out.'

5	22.5.15	Africa Nazarene University	'...high stress levels are seen when exam results are announced. Those students who fail to get the pass mark ask for all kinds of favors...' Some students wish for exams to be marked again hoping that an examiner can add them marks in order to pass. <i>(Personal Interview, Administrator)</i>			
6	22.5.15	Strathmore University	'It goes without saying that facilities within a university should be sufficient or seen to be sufficient. I have had several students willing to transfer to our university because we are known to have enough computer labs'. Some students do not complain...they just do not come to school anymore. We are trying very hard to give enough room in classes so that too many students do not squeeze in one room'.			
7	29.5.15	Mt Kenya University		'Students are getting more and more innovative in cheating practices during examinations. These days it is not the old 'mwakenya' that we have to deal with. All manner of electronic devises are being used in the examination room, including cell phones, some kinds of electronic watches. Even body parts are being used to write notes intended to be used in the exam room. It is unfortunate that we are losing our students to the 'animal' of success at whatever cost...' <i>(Personal interview- Dean of Students)</i> .		

8	3.6.15	Kenya Methodist University	I know of many students (not that many..) who are doing a degree of the parent's choice and not of their choice...such students usually take more than four years to complete the degree...they keep on failing and repeating exams and are more likely to ask for study leave. <i>(Personal Interview, DOS)</i>			
9	8.6.15	Catholic University	'Our sports fields attract a lot of these young people. I think they have a lot of energy to spend. It is therefore important that universities have adequate facilities to allow students to express themselves and not to be attracted to other things that are too far away from studies'. Places where students can sit during breaks between lessons are a 'must' for universities.' <i>(Personal interview 9, administrator).</i>			

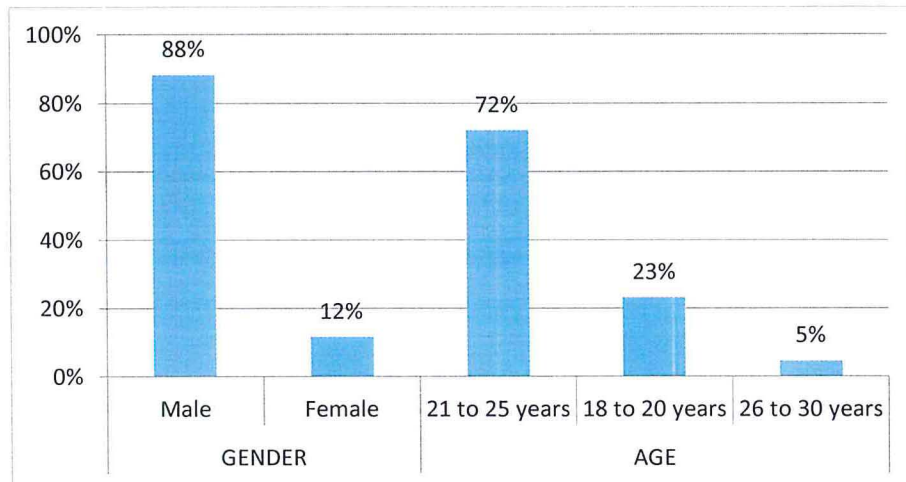
Appendix I: Interview Schedule-Dropouts

SNO	Interviewtype	Gender	submitdate	startdate	datestamp
1	Telephonic	M	14-Jun-2015 10:26:20	14-Jun-2015 10:23:33	14-Jun-2015 10:26:20
2	Telephonic	M	14-Jun-2015 11:26:14	14-Jun-2015 11:17:40	14-Jun-2015 11:26:14
3	Telephonic	F	14-Jun-2015 11:32:26	14-Jun-2015 11:29:26	14-Jun-2015 11:32:26
4	Telephonic	F	14-Jun-2015 12:14:06	6/14/2015 11:18:63 AM	14-Jun-2015 12:14:06
5	Telephonic	M	14-Jun-2015 14:49:46	14-Jun-2015 14:36:22	14-Jun-2015 14:49:46
6	Telephonic	F	14-Jun-2015 15:18:04	14-Jun-2015 14:42:02	14-Jun-2015 15:18:04
7	Telephonic	M	14-Jun-2015 15:27:32	14-Jun-2015 14:16:49	14-Jun-2015 15:27:32
8	Telephonic	M	14-Jun-2015 16:26:17	14-Jun-2015 16:21:12	14-Jun-2015 16:26:17
9	Telephonic	M	14-Jun-2015 16:36:39	6/14/2015 4:31:68 PM	14-Jun-2015 16:36:39
10	Telephonic	M	14-Jun-2015 16:44:01	14-Jun-2015 16:42:07	14-Jun-2015 16:44:01
11	Telephonic	M	16-Jun-2015 09:04:48	16-Jun-2015 09:01:42	16-Jun-2015 09:04:48
12	Telephonic	M	16-Jun-2015 09:32:22	6/16/2015 9:06:67 AM	16-Jun-2015 09:32:22
13	Telephonic	F	16-Jun-2015 09:34:12	16-Jun-2015 09:04:11	16-Jun-2015 09:34:12
14	Telephonic	M	16-Jun-2015 10:18:38	16-Jun-2015 09:12:34	16-Jun-2015 10:18:38
15	Telephonic	M	16-Jun-2015 10:29:03	16-Jun-2015 10:28:08	16-Jun-2015 10:29:03
16	Telephonic	F	16-Jun-2015 10:39:08	16-Jun-2015 10:14:40	16-Jun-2015 10:39:08
17	Telephonic	F	16-Jun-2015 12:16:28	6/16/2015 11:49:67 AM	16-Jun-2015 12:16:28
18	Telephonic	F	16-Jun-2015 12:21:47	6/16/2015 11:64:20 AM	16-Jun-2015 12:21:47
19	Telephonic	M	16-Jun-2015 12:33:18	16-Jun-2015 12:30:19	16-Jun-2015 12:33:18
20	Telephonic	F	16-Jun-2015 12:40:47	16-Jun-2015 12:36:06	16-Jun-2015 12:40:47
21	Telephonic	M	16-Jun-2015 14:46:37	16-Jun-2015 14:26:17	16-Jun-2015 14:46:37
22	Telephonic	F	16-Jun-2015 15:03:06	6/16/2015 2:22:61 PM	16-Jun-2015 15:03:06
23	Telephonic	M	16-Jun-2015 15:13:44	16-Jun-2015 14:46:23	16-Jun-2015 15:13:44
24	Telephonic	F	16-Jun-2015 15:20:18	16-Jun-2015 14:46:43	16-Jun-2015 15:20:18

25	Telephonic	M	16-Jun-2015 15:20:19	6/16/2015 2:64:44 PM	16-Jun-2015 15:20:19
26	Telephonic	M	16-Jun-2015 15:26:01	16-Jun-2015 14:34:03	16-Jun-2015 15:26:01
27	Telephonic	M	16-Jun-2015 15:29:34	16-Jun-2015 15:04:06	16-Jun-2015 15:29:34
28	Telephonic	M	16-Jun-2015 16:01:46	6/16/2015 3:11:61 PM	16-Jun-2015 16:01:46
29	Telephonic	F	16-Jun-2015 16:03:20	6/16/2015 3:68:11 PM	16-Jun-2015 16:03:20
30	Telephonic	M	19-Jun-2015 10:09:43	6/19/2015 9:31:66 AM	19-Jun-2015 10:09:43
31	Telephonic	F	19-Jun-2015 10:16:03	19-Jun-2015 09:31:27	19-Jun-2015 10:16:03
32	Telephonic	M	19-Jun-2015 10:32:48	6/19/2015 9:67:08 AM	19-Jun-2015 10:32:48
33	Telephonic	M	19-Jun-2015 11:12:04	19-Jun-2015 10:11:13	19-Jun-2015 11:12:04
34	Telephonic	M	19-Jun-2015 12:02:20	19-Jun-2015 11:23:32	19-Jun-2015 12:02:20
35	Telephonic	M	19-Jun-2015 12:39:43	19-Jun-2015 12:14:01	19-Jun-2015 12:39:43
36	Telephonic	F	19-Jun-2015 14:18:34	19-Jun-2015 14:16:22	19-Jun-2015 14:18:34
37	Telephonic	F	19-Jun-2015 14:19:19	19-Jun-2015 14:03:42	19-Jun-2015 14:19:19
38	Telephonic	F	19-Jun-2015 14:38:26	19-Jun-2015 14:20:47	19-Jun-2015 14:38:26
39	Telephonic	M	19-Jun-2015 14:41:37	19-Jun-2015 14:16:14	19-Jun-2015 14:41:37
40	Telephonic	M	19-Jun-2015 15:21:32	19-Jun-2015 14:46:12	19-Jun-2015 15:21:32
41	Telephonic	F	19-Jun-2015 15:31:28	6/19/2015 2:69:10 PM	19-Jun-2015 15:31:28
42	Telephonic	M	19-Jun-2015 16:02:39	6/19/2015 3:31:66 PM	19-Jun-2015 16:02:39
43	Telephonic	M	19-Jun-2015 16:08:46	19-Jun-2015 15:37:10	19-Jun-2015 16:08:46
44	Telephonic	M	19-Jun-2015 16:09:09	19-Jun-2015 16:03:29	19-Jun-2015 16:09:09
45	Telephonic	F	19-Jun-2015 16:40:20	19-Jun-2015 16:12:29	19-Jun-2015 16:40:20
46	Telephonic	M	22-Jun-2015 11:19:41	6/22/2015 10:66:41 AM	22-Jun-2015 11:19:41
47	Telephonic	F	22-Jun-2015 11:30:12	22-Jun-2015 11:03:10	22-Jun-2015 11:30:12
48	Telephonic	M	22-Jun-2015 11:32:37	6/22/2015 10:69:02 AM	22-Jun-2015 11:32:37
49	Telephonic	M	22-Jun-2015 11:37:46	22-Jun-2015 11:01:22	22-Jun-2015 11:37:46
50	Telephonic	F	22-Jun-2015 11:39:07	22-Jun-2015 11:36:17	22-Jun-2015 11:39:07

51	Telephonic	F	22-Jun-2015 11:42:30	22-Jun-2015 10:46:39	22-Jun-2015 11:42:30
52	Telephonic	M	22-Jun-2015 12:09:18	22-Jun-2015 10:41:26	22-Jun-2015 12:09:18
53	Telephonic	M	22-Jun-2015 12:09:42	22-Jun-2015 11:42:44	22-Jun-2015 12:09:42
54	Telephonic	F	22-Jun-2015 12:16:46	22-Jun-2015 11:39:06	22-Jun-2015 12:16:46
55	Telephonic	M	23-Jun-2015 10:08:03	23-Jun-2015 09:23:04	23-Jun-2015 10:08:03
56	Telephonic	M	23-Jun-2015 10:32:46	6/23/2015 8:20:66 AM	23-Jun-2015 10:32:46
57	Telephonic	F	23-Jun-2015 11:00:37	23-Jun-2015 10:33:20	23-Jun-2015 11:00:37
58	Telephonic	M	23-Jun-2015 11:38:10	23-Jun-2015 09:20:06	23-Jun-2015 11:38:10
59	Telephonic	F	23-Jun-2015 12:11:01	23-Jun-2015 11:46:21	23-Jun-2015 12:11:01
60	Telephonic	F	23-Jun-2015 12:34:28	23-Jun-2015 12:13:26	23-Jun-2015 12:34:28

Demographics



Due to the small sample, the spread of the degree programmes was wide and it covered students in over 21 different degree programmes. Of these, majority (42%) were taking science based programmes indicating that these are the most popular.

In terms of parental demographics, majority of those interviewed indicated that their parents were civil servants. Most of the students also indicated that their fathers were retired as shown in the table below.

	Mother	Father
Civil servant	28%	26%
Prefer not to answer	23%	28%
Retired	19%	26%
Executive/managerial	14%	12%
Professional	12%	2%
Deceased	5%	5%
No response	0%	2%

In terms of education of parent, majority of those interviewed indicated that their parents had post-primary school education as shown below.

	Mother	Father
University	35%	33%
Secondary School	30%	12%
Primary School	12%	19%
Certificate/Diploma	9%	16%
Farmer	7%	5%
No response	5%	5%
Business man/woman	2%	2%
No schooling	2%	2%

The study also sought to find out the income brackets and whether these had a role to play in attrition. Findings indicate that majority (52%) of the students' households earned a consolidated income that was above Kenya Shillings 50,000.

Attrition was approached as delay and non-completion of a degree program arising out of examination repeats, supplementary examinations, university year repetitions as well as complete drop out of a university program (Pascarella & Terenzini, 2005).

The table below infers the attrition rates based on the aforementioned criteria. From the table, 16% of the students interviewed have had a retake while 9% have had to defer a semester. Of the interviewed students, 44% knew of a former class mate who had dropped out of university. It is worth noting that due to the small target in the pilot phase, the study could not establish the comparative statistics by gender given that the data was skewed towards the male student population. To counter this, each gender will be analyzed independently using the larger sample.

	Retake	Deferment
Never	84%	91%
Once	9%	7%
Two times	5%	-
More than five times	2%	2%

MAIN FINDINGS

All factors were grouped and then analyzed. The respondents were presented with a range of factors and asked to rate their level of agreement with each. This was intended to measure the level of agreement (and consensus) among students on each group of factors. The color codes indicate the level of agreement with the factors. Green indicates the highest level of agreement while red indicates the lowest level of agreement; yellow indicates moderate levels of agreement.

SOCIETAL FACTORS	Mean Score	Percent
The delay of university students to complete their degree programme is a great societal problem	3.65	73%
Universities should conduct regular professional and social talks to students to control for university examination retakes.	4.21	84%
I have at least had one temptation to drop out of university	2.07	41%
University student counselling department should incorporate student rehabilitation programmes in their curriculum	4.12	82%
Examination oriented curriculum can lead to student frustrations which can trigger drop out	3.56	71%
Wrong career choice especially dictated by parents can make a student to thinking to dropping out of university	4.14	83%
Issues on university student dropouts are never discussed in my university	3.44	69%
Given a free chance I will opt out of university education	1.98	40%

INDIVIDUAL FACTORS	Mean Score	Percent
I can always manage to solve difficult problems if I try hard enough.	4.16	83%
If someone opposes me, I can find the means and ways to get what I want.	3.86	77%
Advice from my peers in the university can sway students into wrong decisions	3.77	75%
It is easy for me to stick to my aims and accomplish my goals.	3.74	75%
I have the feeling that studying is difficult and I may become a drop out	2.09	42%
I am confident that I could deal efficiently with unexpected events.	3.77	75%
I can solve most problems if I invest the necessary effort.	4.23	85%
I can remain calm when facing difficulties because I can rely on my coping abilities.	3.74	75%
When I am confronted with a problem, I can usually find several solutions.	3.95	79%
I can usually handle whatever comes my way.	3.65	73%

UNIVERSITY ENVIRONMETAL FACTORS	Mean Score	Percent
I know where to look for help in case I run into academic problems	3.21	64%
I have adequate access to books, computers and other educational facilities	2.98	60%
I find the courses I am taking more difficult than I originally thought.	2.95	59%
I find university environment somewhat isolated from the rest of society	2.67	53%
I always have leisure time as a way to release stress related to my studies and life	3.72	74%
Due to growing workload in the university I spare more time for studies than anything else in my life	3.81	76%
University offers a lot of freedom to us which if not well managed can lead to harmful activities and decisions	3.91	78%
I have joined a club in the university to ensure that my free time is well spent	3.02	60%
I like growing and practicing my hobbies during my free time in the university	3.67	73%
The university calendar of extracurricular activities is loaded with many things that can occupy me productively	3.33	67%
I have access and frequently interact frequently with lecturers with regards to academic matters	3.40	68%

HOME FACTORS	Mean Score	Percent
My parents visit me at school	2.35	47%
My parents/guardian request for my transcripts and generally follow my university progress	3.42	68%
My parents/guardian provide books and other educational material at home	3.16	63%
My parents/guardian support me in searching for attachment/internship or job related experience whenever the opportunity arises	3.30	66%
My parents/guardian believe and expect me to support them in the future during their old age	4.26	85%
My siblings look up to me for guidance on educational matters	3.98	80%
My parents/guardian believe that I will get a good job and become successful in the future because I have a degree	4.35	87%
My relatives see university as a way to get into an interesting and satisfying career.	4.23	85%
I believe that I have a close relationship with my parents/ guardian.	4.40	88%
My parents/guardian are able to guide be adequately in relating to my academic problems.	3.91	78%

Observations from the pilot report

- In the main study, analysis to be done using Structural Equation Modeling (SEM) to estimate the relationship between latent exogenous factors (home factors, individual factors and university environmental factors) and endogenous factor (attrition).
- Permission to be obtained from all universities targeted
- Tools to be reviewed based on feedback from the pilot
- Tools to be shared with experts for final review