CAUSAL ATTRIBUTIONS AND ACADEMIC EXPECTATIONS AS CORRELATES OF ACADEMIC ACHIEVEMENT IN SECONDARY SCHOOLS IN KIAMBU COUNTY, KENYA

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E83/24491/2011

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY (EDUCATIONAL PSYCHOLOGY) IN THE SCHOOL OF EDUCATION, KENYATTA UNIVERSITY

MARCH, 2019

DECLARATION

I confirm that this thesis is my original work and has not been presented in any other university/institution for certification. This thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited in accordance with anti-plagiarism regulations.

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DEDICATION

This thesis is dedicated to my dear husband Ejidio Kimani for his support and encouragement even when the journey became very tough and to our lovely children, Starlight Njeri, Collins Kimani and Christiano Ngunu. I will always cherish you.

ACKNOWLEDGEMENT

I am most grateful to God for His care and guidance this far. My sincere appreciation and immense gratitude to my supervisors Dr. Theresia Kinai and Dr. Philomena Ndambuki for their commitment, concern and professional guidance that facilitated the completion of this work.

I wish to thank the Chair of the Department of Educational Psychology Dr. David Kariuki for his support and encouragement. I also thank the immediate former chair, Dr. Peter Mwaura for his support and assistance in data analysis and for creating a conducive environment that enabled me to carry out my duties and responsibilities as well as carry on with the research work. Appreciation to Dr. Anthony Ireri for his support and assistance in editing the work. I recognize all my colleagues at the Department of Educational Psychology for their moral support and encouragement. Much appreciation goes to my friends and everybody who has been there for me in the course of this study. I acknowledge the support from the School of Education under the leadership of the Dean, Prof. Kisilu Kombo for the award of the research grant that enabled me realize my dream.

Finally, thanks to my parents James Ngunu and Jenester Wambui and members of the entire family for their prayers, support and encouragement that kept me focused. To all of you, I say thank you and may God bless you

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA: Analysis of Variance

GPA: Grade Point Average

KCPE: Kenya Certificate of Primary Education

KCSE: Kenya Certificate of Secondary Education

KNEC: Kenya National Examination Council

MMCS: Multidimensional Multi-attributional Causality Scale

MOE: Ministry of Education

NACOSTI: The National Commission for Science, Technology and Innovation

SPSS: Statistical Package for the Social Sciences

ABSTRACT

This study investigated the explanations that students give on achievement outcomes and their academic expectations in Thika Sub-County, Kiambu County. The main objective of the study was to find out if academic achievement was related to causal attributions and academic expectations. Gender differences in causal attributions and academic expectations were also tested. The study also established the interaction effect of causal attributions, academic expectations and academic achievement. The research was guided by Weiner's model of Achievement Attribution and the Expectancy Value theory. A correlational research design was used. The study population consisted of 21 schools with a population of 2660 (1540 boys, 1120 girls) students. The schools were stratified based on whether they were national, extra-county or county and whether single or co-educational. Simple random sampling was used to select ten schools and 600 form three students (320 boys, 280 girls) through proportionate allocation. The research instruments included Multidimensional Causality Attribution Scale and Academic Expectancy Scale questionnaire. The research instruments were piloted using 25 students who did not participate in the actual study. Reliability was tested by computing cronbach alpha coefficient (α). Data were analyzed using SPSS version 20. The statistics used were means, standard deviations and analysis of variance (ANOVA), t-tests, Pearson's product moment correlation coefficient and multiple regression. The major finding was that causal attributions and academic expectations were significantly correlated to academic achievement. The strongest correlation was between controllable attributions for failure and academic achievement (r (583) = -.34, p<.01). In addition, there were significant positive relationship between positive academic expectations (r (583) =.28, p< .01) and a negative significant relationship between negative academic expectations (r (583) = -.38, p< .01) and academic achievement. Significant gender differences in causal attributions for failure (t (583) =3.59, p<.05) and negative academic expectations (t (583) =3.45, p<.05) were also found. The results indicated that there was an interaction effect between causal attributions and academic expectations in determining the academic achievement. The model involving both factors yielded a higher predictive ability for academic achievement. The conclusion was that students formed maladaptive causal attributions and biased academic expectations that negatively affected their academic achievement. The study made recommendations to the teachers, parents and educators to come up with intervention measures such as, attributional retraining, encouraging and helping students form positive academic expectations. The researcher also recommended for further research in the area of causal attributions and academic expectations.

CHAPTER ONE

INTRODUCTION AND CONTEXUALIZATION OF THE STUDY

1.1 Introduction

This chapter consists of the background to the study, statement of the problem, purpose of the study, and the study objectives. It also comprises of the research hypotheses, assumptions, limitations and delimitations as well as the significance of the study. Included also are theoretical, conceptual framework and the operational definition of terms.

1.2 Background to the Study

Education is important as it equips learners with values, attitudes, skills and knowledge to adjust to their social environment. Its aim is to furnish citizens with the ability to reorganize and eradicate inequality in society (Boit, Njoki & Chingach, 2012). Berger and Fisher (2013) stated that a strong education system generates opportunities and benefits of social and economic development. It ensures people are highly productive by contributing to the national economy. These objectives cannot be achieved in an environment of poor academic achievement. Achievement in general refers to the students' performance in academic areas as measured by achievement tests (Khattab, 2015).

One of the indicators of quality education is cognitive achievement of learners (UNESCO, 2005) which is measured by test and examination scores. Nations need to invest and ensure that high quality education is accessible to their citizens. Investing in education will raise the academic achievement and lead to sustainable

development. As a result, many nations are working towards improving the quality of education.

In most educational systems, student advancement is predicated on graded performance in a series of classes. In United States of America (U.S.A), failure to achieve passing grades has numerous additional implications during secondary school and past students' overall individual achievement level. Drew (2017) observed that students' academic achievement in the U.S.A still lag behind their peers from advanced industrial nations. As a result, the educational policy makers and analysts have expressed great concerns. The government has come up with several progressive policies to remediate the underachievement and revitalize economic productivity by ensuring that the citizens participate fully in American's economic growth (Partelow, Brown, Shapiro & Johnson, 2018). In United Kingdom, the schools' improvement strategies are broadening and there are academic gains in underperforming schools. According to the Department of Education Policy in Britain (2015), efforts are being made to improve the standards in schools. One of the efforts being made is to raise the quality of teachers and school leadership. The educationists are identifying the proper balance between pressure and support to improve performance in failing schools.

In Sub-Saharan Africa, Mulkeen (2007) pointed out the growing of school based in-service programs that focused on improving performance in examinations. He asserted that developing countries should turn their attention on expansion and improvement of secondary education in order to take advantage of its potentially transformational nature. In Nigeria, the study by Sam (2011) observed that academic

excellence had since declined and failure had been reported year after year. The nation was concerned by the below average performance of thousands of students in national examinations conducted by the national examining bodies. Only 20 percent of the candidates pass at acceptable levels and the stakeholders agreed to boost academic competence of students.

Secondary school education in Kenya is highly regarded in the education system as it serves as a link between primary and higher education. It serves as a means of promoting the values and development of the individual and contributes to the general transformation of society (Republic of Kenya, 2016). Education in Kenya was key in the realization of the Millennium Development Goals by 2015 and is a means in the attainment of the country's vision 2030. Examinations are important tools for monitoring systems of education and are an integral part of the education system. Every level of our education system is guarded by examinations and the reward for success and penalty for failure in these examinations is substantial (Travelers, 2011). Academic failure can undermine the individual's life course and has ramifications for larger social problems since increase in the rates of academic failure could have serious consequences for the stability of society. Therefore, children need to be encouraged to excel in examinations because it is part of the objective of our education system.

Even though measures have been taken to improve quality of education, majority of the students perform poorly especially in national examinations according to the yearly reports by Kenya National Examination Council (KNEC, 2018). In 2015, the number of candidates who scored the minimum university entry mean grade of C+

and above in KCSE were 166,009 out of the 525,802 students, accounting for 31.8%. In 2016 only 88,929 (15.6%) out of 577,253 students attained C+ and above which was a big drop from the results of 2015 (Ministry of Education, 2016). In 2017, 70,073 (11.4%) out of 615,773 students managed to attain C+ and above. A similar trend was reported in 2018 where only 90,377(13.8%) of the 660,204 scored C+ and above (KNEC, 2018). This poor performance undermines the students' opportunity of joining higher institutions of learning, jeopardizes their chance for job placement, hence reducing the individual's active participation in nationwide development.

This poor performance has drawn the concerns of the government, teachers, parents and other stakeholders in education and has sometimes elicited controversies and debates as to who should be held responsible. These stakeholders have sought for answers to the question of continued mass failures especially in some secondary schools over the years. After release of 2013 KCSE, poor performance in Lamu was attributed to enrolment of pupils who had scored low marks in Kenya Certificate of Primary Education (KCPE). On the same results, poor performance in Kirinyaga was blamed on politics (Ndathi, 2014).

In Kiambu County, public secondary schools performance in KCSE examinations has been dismal. According to annual analysis carried out by the Ministry of Education (2013), the comprehensive list of order of merit in KCSE 2012 examinations released on March 2013, Kiambu was ranked number 37 out of 47 with a performance index of 28.11 out of 100%. In 2014, only 25.3% in the county managed a C+ and above with a mean score of 4.9. The KCSE results of 2015

indicate that, 24.4 % acquired C+ and above and had a mean score of 4.8. In 2016 there was total decline with only 18.3% managing a C+ and above and the mean score recorded as 4.0 (MOE, 2016). This persistent poor performance prompted the current study.

Previous studies indicate that performance in examinations may be influenced by myriad factors. Researchers have studied various factors that have been identified as possible contributors to the variations in academic performance. Researchers have noted that predictors of academic achievement include school type, parental education, home environment teacher attitudes and learning materials (Alokan, Osakinle & Onijingin, 2013; Yusuf & Adigun, 2010). In Kenya the variables that have been studied include, the students' self-concept, academic resilience, students' attitudes, academic identity status and achievement goal orientation, teachers' factors and achievement motivation amongst others (Ireri, 2015; Kimani, Kara & Njagi, 2013; Mwangi, 2015). These variables have been considered important in the understanding and prediction of students' achievement and relevant academic behaviour.

A strong relationship has also been established between causal attributions, students' future expectations and academic achievement (Bui, 2007; Khattab, 2015; Solar, 2015). How a student reacts to whether they passed or failed depends upon their causal attributions. Causal attributions are the explanations that students give to explain causes of their academic failure or success. In the education context, Weiner (2005) proposed a theory that posits that the student's attributions for their successes or failures can significantly influence their performance in future. He argues that

success and failure in academic task is linked to three sets of characteristics. First, students external or internal factors that may come from within themselves or that may be linked to the environment, that are stable or unstable. When attributions are stable, students may believe that the outcome of their performance will be the same every time they engage in the same task. Unstable attributions imply that they can be altered and therefore the outcome of performance may vary the next time the behaviour is performed.

Lastly, the reasons of success or failure may be perceived as either controllable or uncontrollable. If the factors are perceived as controllable, the students' believe that they can change these causes. According to Weiner (2005), if learners consider the causes as uncontrollable, it creates a perception that they cannot be easily changed. On the other hand, when learners attribute their academic success to internal, unstable causes, that they can control, they will persist on the academic tasks. Onduso's (2010) study on comparison of teachers' and students' attribution regarding Mathematics achievement in Kiambu, found that students' attributed success to internal more than to other causes. On the other hand, Macharia (2016) sought to establish teachers' causal attributions and their perceived self-efficacy in controlling adolescent health risk behaviours in Nairobi. The findings were that teachers made varying causal attributions and had a high perceived efficacy. The current study focused on whether there was a relationship between students' causal attributions and academic achievement in the population of study.

Numerous empirical studies and theoretical frameworks have also been formulated and conducted centered on students' academic expectation and their impact on their

actual achievement. The findings of the studies are varied and at times contradict each other. The study by Richardson, Abraham, & Bond (2012) has shown that student's expectations are positively associated with achievement such as test scores, course grades and other forms of academic behaviour. Learners who predict that they will do well develop confidence and set high standards for themselves, which foster their self-efficacy and enable them to achieve consistently. However, students who believe they are poor performers generate failure expectations, low aspirations and low perseverance while working on assignments thus, damage their self-worth. This prohibits them from achieving their full academic potential (Mugo and Kibera, 2014; Pintrich, 2000). This study aimed at establishing if there was a relationship between academic expectations and academic achievement.

Studies that have been carried out to address perceived gender differences in the area of causal attribution and academic expectations have yielded controversies. The study by Farid (2012) on causal attributions found significant gender differences in causal attributional pattern. However, the works by Lei (2009) found that gender has little effect on being successful or not. Studies also show that both boys and girls score differently in positive and negative related beliefs and these expectancy beliefs strongly influence achievement.

Findings from different studies on interaction effect of causal attributions and academic expectations indicate that students' attributions are systematically connected to their expectations with regard to future performances (Lei, 2009). These studies noted that many individuals attribute stable factors to expected outcomes and unstable factors to unexpected outcome. The students' attributions for

their success and failure will influence their emotional state and expectation for future performance. This in turn, influences their academic achievement. Arguments by Weiner (2005) are that students who attribute success to stable factors such as ability have raised expectations for success and are thus optimistic leading to higher task persistence. When failures are associated to ability, the students' expectancy for future success declines along with it task persistence. This leads the learner to feel there is nothing he or she can do about it and is overwhelmed by thoughts of hopelessness and resignation (Weiner, 2005).

Students' causal attributions and academic expectations can thus have profound influence on their academic achievement. It is therefore, very necessary to find out which students may be at heightened risk of using negative attributions and academic expectation biases. Although these attributional and expectation biases are associated with maladaptive behaviour they are flexible and can produce positive outcomes by being altered.

Several studies have been carried out on how causal attributions and academic expectations affect the student's academic achievement. Most of these studies were carried out outside Kenya and some are dated ten or more years back. The findings may thus not be generalizable to the current study's population as well as contextual experiences. Therefore, the need for the current study to allow comparison with the data obtained from the previous findings. Due to the limited attention given to this subject in the recent time, the researcher found it of importance to provide renewed focus. The current study also extends the findings of the previous studies.

This study thus sought to determine whether causal attributions and academic expectation were correlates of the students' academic achievement among secondary schools in Kiambu County. It also sought to test for gender differences in students' causal attributions and in academic expectations. In addition, the interaction effect between the students' causal attributions, and academic expectations on their academic achievement was established.

1.3 Statement of the Problem

In Kiambu County, many public secondary schools have been performing dismally in KCSE between 2014 and 2017. In 2015 KCSE the mean score was 4.8 and only 24.4 % acquired C+ and above. In 2016, there was total decline and the mean score was recorded as 4.0 with only 18.3% attaining C+ and above (MOE, 2016). Poor performance in Kiambu County's public secondary schools has been of great concern to different stakeholders and has elicited controversies and debates on who is to blame. This poor performance may be a barrier to the County's contribution to the national economic growth and participation in the nationwide development. It may also undermine the individuals' chances of joining higher institutions of learning and job placement. In Kenya, a number of variables have been studied on their influence on academic achievement such as, academic identity status and achievement goal orientation, students' attitudes, teachers' factors, achievement motivation and self-regulated learning amongst student's self-concept, academic resilience, others (Ireri, 2015; Kimani et al. 2013; Mutweleli, 2014; Mwangi, 2015). However, the poor performance has persisted necessitating the study of other variables that might account for the students' academic achievement.

Studies done in other regions clearly depict that students' causal attributions and academic expectations can significantly affect how well they learn and, consequently their success or failure in academic achievement (Bui, 2007; Khattab, 2015; Weiner, 2005, Sambo & Mohammed, 2015). Establishing students' causal attributions and academic expectations may be important in understanding their academic achievement. In Kenya, scanty information exists on the relationship between causal attributions and academic expectations on students' academic achievement. These factors could be a major contributor for the dismal or low academic achievement in the population of study. It is on this premise that the current study was carried out to shed light on causal attributions and academic expectations as correlates of academic achievement among form three students' in Kiambu County, Kenya. The study also tested for gender differences and interaction effect of the variables.

1.4 Purpose of the Study

The purpose of the study was to establish the extent to which the students' causal attributions and academic expectations relate to their academic achievement. The study further investigated if there were gender differences in causal attributions and academic expectations. In addition, the interaction effect of causal attributions and academic expectations on academic achievement was established.

1.5 Objectives of the Study

The study was guided by the following objectives:

i. To establish the relationship between students' causal attributions and academic achievement.

ii. To determine the relationship between students' academic expectation and academic achievement.

iii. To test for gender differences in students causal attributions and academic expectations.

iv. To determine the interaction effect between the students' causal attributions and academic expectations on academic achievement.

1.6 Research Hypotheses

The following hypotheses guided the study:

H_{a1}: There is a significant relationship between the students' causal attributions and academic achievement.

H_{a2}: There is a significant relationship between students' academic expectations and academic achievement.

H_{a3}: There are significant gender differences in students' causal attributions and academic expectations.

H_{a4}: There are significant interaction effects between the causal attributions and academic expectations on academic achievement.

1.7 Assumptions of the Study

The study was based on the assumptions that, students in the population of the study had formed causal attributions and academic expectations. The study also assumed that the participants understood the test items the same way and they reported accurately about themselves. Similarly, instruments used in the current study were assumed to be valid measures of students' causal attributions, academic expectations and academic achievement.

1.8. Limitations of the Study

Since students from different counties in Kenya could have different attributional styles and academic expectations, the generalization of the findings beyond form three students in Kiambu County may be limited. Another limitation is that data were collected through self-report questionnaires, which may have introduced a degree of subjectivity in the results. Finally, data analysis was based mainly on correlational procedures and therefore the results did not indicate the causes of the established relationships among the variables. Although significant interaction effect was established, the findings gave limited knowledge about how each factor influences and is influenced by the other factors.

1.9 Delimitations of the Study

The study only focused on the influence of students' causal attributions and academic expectations although there are many variables that might account for the differences in students' academic achievement. In data analysis caution was exercised not to make causal inferences. In addition, the interpretation of the results was confined to the context of academic achievement among form three students in Kiambu County.

1.10 Significance of the Study

The study may help learners to understand their achievement related behaviour. The results may guide them on use of appropriate attributional styles and positive academic expectations that might help them improve their academic achievement. They can be encouraged to associate academic success and failures to factors that are within their control such as effort and to change their success expectancies. The

findings may offer relevant information to teachers and parents on the explanations students give when they succeed or fail and the academic related beliefs they form. These may enable them to monitor potentially inaccurate causal attributions and harmful academic related beliefs among students. It may therefore provide an opportunity for shaping students' explanations and encourage beliefs that promote positive academic outcomes. The findings may aid the school administration in coming up with programs and interventions that would help promote and encourage healthy and accurate causal attributions and academic expectations. This would help improve the learners' academic achievement in a holistic way. The results may offer significant information on causal attributions and academic expectations to policy makers. These may inform the programs and interventions that may promote and encourage healthy and accurate attributions and expectations that may aid in removing barriers to attainment of academic achievement potentials. The study also extends the previous research on causal attributions and academic expectations as they relate to academic achievement by building up on the new knowledge based on empirical data from a different cultural context since most of the previous studies were conducted outside Kenya. This may also enhance the model involving both predictor variables. The study findings suggested that causal attributions and academic expectations interact and influence the students' academic achievement.

1.11 Theoretical Framework

1.11.1 Weiner's Model of Achievement Attributions (Weiner, 1985)

Attribution theory is a motivational theory founded on the hypothesis that people like understanding and explaining their life events and outcomes including what happens within the academic setting. In the achievement setting, ability, effort, luck

and task difficulty are often used by students to explain their successes and failures (Weiner, 1985). The theory assumes that people have diverse attributional styles or specific reasons for explaining their academic outcomes based on three dimensions namely: Locus of causality, whether the cause of outcome is from within the individual or from the external environment; controllability, meaning the extent to which the individuals perceive themselves as being able to influence a particular cause; and stability, referring to the extent to which the causal attribution will consistently be present and affect outcomes in similar situations. The model argues that students who perform well attribute their successes to high ability. When on occasion they encounter episodes of failure, they attribute their difficulties to bad luck or to lack of effort, which are both external factors.

According to Weiner (1985), if learners attribute success to internal factors such as ability, it generates positive academic motivation and behaviour. On the other hand, attributing success to external factors such as ease of the task or failure to more stable, internal and uncontrollable causes (innate ability), will be detrimental to later motivation and achievement striving (Weiner, 2005). This attribution leads to more hopeless emotional response and lowered expectations for later success. Attributing failure to more unstable but controllable causes, for example, effort or strategy therefore, provides more opportunity for hopefulness and higher expectations for success of subsequent task since it creates a chance for potential change. Research suggests that there exists a relationship between a student's attributional style and achievement (Lei, 2009; Kaplan & Yahia, 2017; Solar, 2015). In the current study, the theory helps the researcher to explain students' causal attributions for their academic outcomes in the population of study. This may guide the students in

formulating favourable attributions for their achievement related behaviour. It may also aid in mitigating for failure through giving basis for several intervention programs. This study sought to establish which students were at greater risk of using biased attributions since this may lead to deficit in performance. Since there were cultural differences between the population of study and where the model was developed, the study findings offered empirical data on causal attributions on achievement of students in Kenya.

1.11.2 Expectancy Value Theory (Eccles, 1983)

Eccles (1983) expanded Atkinson (1964) expectancy-value model into the field of education. The expectancy-value model offers a multidimensional approach to describing student motivation within educational contexts. The model examines how students develop expectancies for success, subjective task values, achievement goals and competence beliefs. The expectancy theory proposes that people choose to behave in certain ways or work toward certain goals instead of others.

According to this theory, two factors determine achievement and achievement related choices of the students. They include expectancy for success as well as subjective task values. Expectancy refers to confidence of the individual in his or her ability to succeed in a task whereas task values refer to usefulness of the task to the individual. Students need to believe that they can succeed by having positive expectations. They also need to perceive an important reason to engage in the behaviour by having positive values. The students' academic expectations may thus be associated with different forms of academic behaviour. A student who believes

that he/she really strains on a standardized test will more likely score poorly on the test. Their actual performance on the test is therefore, influenced by these beliefs.

This theory hypothesizes that positive and negative academic expectations are crucial components for influencing achievement related behaviour. Several studies suggest that expectancy and task values interact to predict important outcomes like, academic achievement, continuing interest, and engagement (Ichou, 2017; Maskey, 2012; Mwangi, 2015). This model is thus, suitable for investigating how academic expectations relate to academic achievement as hypothesized in this study. The concern is on students who form biased academic expectations. Expectancy value theory argues that such students develop low aspirations, failure expectations, and lack persistence in working on assignments. This prevents them from achieving their full academic potential since it damages their self-efficacy.

1.11.3 Integration of Weiner's Model of Achievement Attributions and Expectancy Value Theory

The researcher applied both the Weiner's theory of Achievement Attribution and the expectancy-value theory in a complementary way. The two models emphasize that the way the individuals interpret their achievement outcomes, and the beliefs they hold about their achievement determine subsequent achievement strivings. Weiner (1985) hypothesizes that causal explanation of the individual's achievement outcomes will determine the subsequent achievement and exerted effort. The theory argues that individual's causal attributions of achievement behaviours affect subsequent achievement behaviours and motivation; future achievement

expectancies; persistence at similar tasks; pride or shame felt following success or failure.

On the other hand, the theory of attribution mainly explains the individual's evaluation of causality in a post behaviour context. That means it is based on individuals own behaviour or that of others but cannot be used to investigate what the individual would imply from the cause(s). The researcher, therefore, incorporated the expectancy value theory to guide the study on the important role played by expectancy and values in predicting students' future decisions, engagement persistence and academic performance. According to Orzuk and Debalak (2005), one's own expectations are significant since individuals usually set goals before developing their action plans. He also argues that individuals are likely to experience failure if they do not have high expectations.

Intervention programs based on constructs of the expectancy-value theory have been applied in changing motivational beliefs, increasing expectancy and value (Perry, et al. 2014). These interventions have ultimately boosted persistence and performance by enhancing motivation, task engagement and goal striving in achievement. The study attempted at forging a stronger theoretical and empirical link between the two models. The theories also rationalized their integration by explaining how the variables of causal attributions and academic expectations interact to predict academic achievement.

1.12 Conceptual Framework

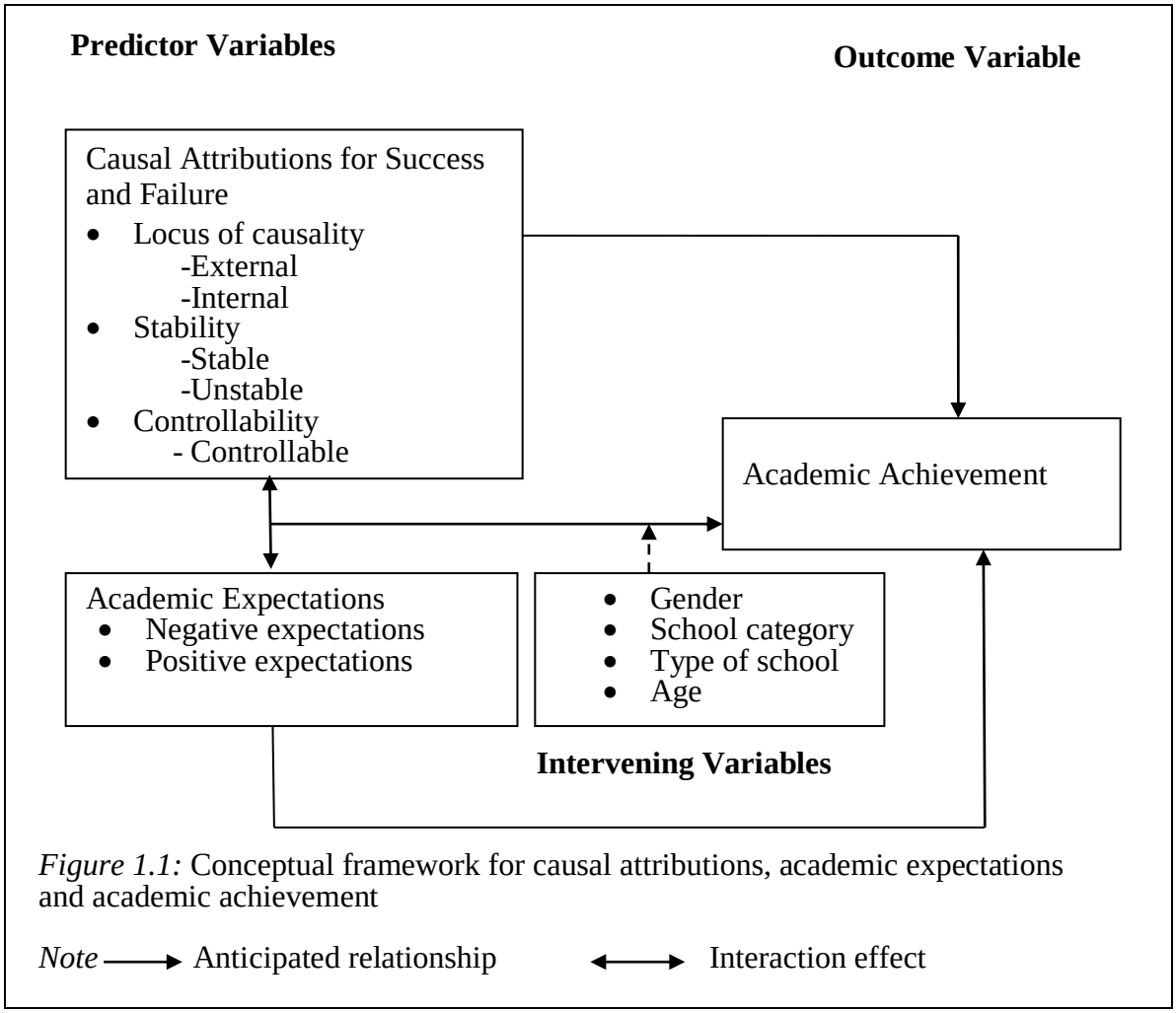

Figure 1.1: Conceptual framework for causal attributions, academic expectations and academic achievement

Source: Researcher, 2018

The predictor variables comprised of causal attributions and academic expectations, while the outcome variable was academic achievement as summarized in Figure 1.1. Causal attributions and academic expectations were hypothesized to be correlated with academic achievement. In addition, they were both expected to have an interaction effect on academic achievement. It was also hypothesized that there were gender differences in causal attributions and academic expectations. Causal attributions for success and failure were categorized under sub-dimensions of internal locus of causality or external locus of causality, controllable or uncontrollable, and stable or unstable and were hypothesized to either relate to academic achievement in a

positively or negatively. The academic expectations of the students were categorized into either positive or negative and were also expected to be positively or negatively correlated with academic achievement. Gender, school category, type of school and age were treated as intervening variables.

1.13 Operational Definition of Terms

Academic achievement: The standardized mean T-score obtained by students in form three, mid-term and end of term one examinations in 2017.

Academic expectations: Total scores of responses to the items on the Academic Expectancy Scale. They comprised of positive and negative expectations.

Causal attributions: Total scores of responses to the items on the MMCS scale.

Controllability: Summated scores of responses obtained by students on controllable and uncontrollable dimensions of causal attributions items on the MMCS scale.

Correlates: The causal attributions and academic expectations variables are assumed to have a relationship with the academic achievement.

Expectancy: The students' judgments and evaluations on their capability of performing successfully in the academic achievement.

Locus of Causality: Summated scores of responses obtained by students on internal and external dimensions of causal attributions items on the MMCS scale.

Stability: Overall scores of responses obtained by students on stable and unstable dimensions of causal attributions items on the MMCS scale.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter critically reviews relevant literature and empirical studies on attributions and academic expectations. It emphasizes their relevance in the students' academic achievement. To further clarify on the causal attribution and academic expectation constructs, the researcher provides an explanation of the relationship and interaction between the constructs in influencing the academic achievement of the students. The gender differences in the students' causal attributions and academic expectations were also reviewed.

2.2 Relationship between Students' Causal Attributions and Academic Achievement

There are numerous related and empirical studies that link students' causal attributions to academic achievement. These studies are centered on students' causal attributions styles for success or failure and their relationship on the actual academic achievement. In the study by Kaplan and Yahia (2017) on academic causal attributions among high school students in Israel, a sample of 205 students was used and data were collected using the survey method. The results revealed that most students attributed failure to lack of ability than to lack of effort while luck was attributed very infrequently. In the study by Le Foll and Rascle (2006), findings showed that high achievers in exams usually attributed their success to effort and ability while low achievers perceived their failure to be caused by lack of ability and

task difficulty. The present study explored the area further by establishing how causal attributions relate to academic achievement.

The study by Dong, Stupnisky and Berry (2013) investigated 156 American college students on multiple causal attributions in performance in foreign language classes. The study posits that success attributions were more stable than failure attributions since the students believed their success would reoccur in the future. The students further reported more external control for success than failure. Additionally, the study conducted in South Florida by Cortés-Suárez and Sandiford (2008) focused on the relationship among a high-risk course, low success rates, and attribution. The researcher examined the differences in the attributions passing and failing students gave, for their performance in college Algebra. Experimental research design was employed with a sample of 410 college students. Students were asked to attribute performance along the dimensions of locus of causality, stability, personal controllability, and external controllability. The results indicated statistical significance in the dimensions of locus of causality, stability, and personal controllability. However, the samples in both studies were drawn from America prompting the current study whose samples were drawn from a different population and helped compare the results.

In Australia, Batool and Akhter (2012) conducted a study that compared the academic outcomes of high and low attribution groups. Cluster sampling was used to select 490 students from 10^{th} grade. The findings were that students who attributed their failure to external and uncontrollable factors considered themselves more helpless in the face of any academic related tasks. The students were more

likely to believe that future success was highly probable when they attributed their successes to high ability than if they attributed their success to other factors. In contrast, the attribution of achievement outcome to lack of ability makes future failure seem highly probable. There is more devastation when one thinks that failure is by virtue of low ability, than when one believes that failure is due to bad luck, task difficulty, or lack of effort. For these reasons, the current study sought to investigate the relationship further among the variables of causal attributions and academic achievement from a different context.

In his study on causal attributions of academic achievement among the Chinese, Lei (2009) found that there were differences in the characteristics of causal attributions towards success and failure. A sample of 1400 college students was used. The study found that the causal attributions towards success and failure were significant predictors of the grade attained. It also revealed that there were differences and similarities of causal attributions by students in primary schools and middle colleges. These differences were attributed to level of knowledge, maturity and growth especially the cognitive maturity. However, the study focused mainly on college school students whose ages were different from the current researcher's population of study. There was need to compare the findings with the data drawn from secondary school students, a major focus of the current study.

In another study among the Philippines, Solar (2015) aimed at determining the attributions of academic performance in biology among university students. The study had a sample of 43 students and a questionnaire checklist was used to collect data. The research method used was non-experimental, cross sectional comparative

method. The findings were that many students attributed their success on internal factors (ability and effort). According to Solar (2015), for one to succeed, attributing academic performance to internal factors was better since it empowered the students more than attributing to external factors. In tandem with this finding is the study by Whitley and Frieze (1985) who found that attributions are internal for success as well as for failure. Although Solar's (2015) study used cross sectional method in data collection like the current study the sample size was too small and this may have undermined the external validity of the study. Most of researchers are in consensus that larger samples would be more representative than smaller samples (Kothari and Garg, 2014).

Farid (2012) conducted a study on causal attributions among Pakistan children. The sampled students were 396 (224 females, 172 boys). To measure causal explanations of the educational outcomes, a self-reporting instrument was constructed. The research tool measured eight kinds of beliefs, effort, ability, task, luck, strategy, difficulty, interest, family influence and teacher influence. The findings showed that all the eight beliefs were potential causes for the students' successes and failures. However, this study was carried out in a different cultural setting. The possibility of intervening cultural diversity in their causal attributions made the current study necessary.

In a comprehensive study, Genet (2014) examined causal attributions of university students regarding their academic achievement among the Ethiopians. A descriptive survey design was employed using a sample of 104 students. They completed a MMCS with items related to ability, effort, context and luck dimensions. The results

revealed that the majority of students attributed their academic achievement to internal factors. Academic success was attributed to internal factors while academic failure was attributed to external factors. Moreover, high and medium achievers attributed their academic achievement to effort and ability while students with low achievement attributed causes of academic success and failure to luck. However, the study involved college students whose ages are different from those of the population of the current study. Similarly, correlational research design used in the current allowed in making of inferences.

In addition, Abiodun and Owoyele (2011) sought to determine the factors that students attributed failure to and their reactions to academic failures. The findings were that the students attributed their failure to more external factors than internal. This suggests that the students who experienced failure felt hopeless and helpless since the factors were beyond their control. The study by Sambo and Mohammed (2015) aimed at establishing the relationship of causal attributions and academic attainment among college students in Nigeria. They used a correlational research design with a sample of 389 students. Surprisingly, the findings showed there were no significant correlations recorded among the causal attribution factors and academic attainment of students apart from external attributions of failure, which reported a significant correlation. These results contradict other studies. The current research added empirical data on causal attributions and its relationship to academic achievement.

In a study involving 260 Tanzanian university students, Kitila and Jackline (2012)

examined the applicability of the attribution theory in understanding how students attribute their academic success and failure. A questionnaire was used for collecting data. The results indicated that many of the students attributed their academic performance to internal, unstable and controllable factors. Those performing highly attributed academic performance to internal causes than low performing students. The study focused on university students unlike the current study whose focus was secondary school students.

Locally, the study by Onduso (2010) compared teachers and students attribution regarding Mathematics achievement in Kenya. One hundred and fourty form four students (80 girls) and their mathematics teachers were sampled. The study employed a causal comparative research method which mainly focused on differences between the two groups. The researcher used a questionnaire to collect data. The findings were that the students attributed their success mainly to internal causes (hard work, effort and ability) while they attributed their failures mainly to external causes. This was a case study of Senior Chief Koinange High School and therefore, generalization of the findings to students in other schools and counties may be limited. The study's sample was also too small and only studied Mathematics. To address the gaps in Onduso's (2010) study, the current study drew its sample from ten schools, involved a larger sample and incorporated seven subjects. The current study also used correlational research design.

2.3 Relationship between Students' Academic Expectations and Academic Achievement

Studies have highlighted the importance of academic expectations in the development of perceived competence and engagement among students. The perception of students of their ability to succeed is significant to their academic achievement. The expectations and assumptions that students make or have about their potentials should have tangible effect on their academic achievement**.** Generally, research suggests that expectancies are strong predictors of student achievement (Nasser & McInerney, 2016; Richardson et al., 2012; Sanders, Field & Diego 2001). A reciprocal relationship between students' achievement and expectations has been established theoretically and empirically (Bui 2007; Eccles & Wigfield 2000; Sanders et al., 2001). Students have self-expectations and their academic achievement is significantly influenced by these expectations. Pupils with high expectations performed better than pupils with low expectations. Much of the above research was carried out in the western countries. The current study sought to find out how academic expectations relate to academic achievement in secondary schools in Kiambu County, Kenya.

Empirical evidence further indicates that expectancies and task-values are related to academic choices and achievement. Ichou (2017) using a longitudinal study in China investigated the expectations and achievement in students' academic trajectories. The researcher followed a cohort of 15,770 middle school students until they turned 20 years old. The study reported a high correlation between academic achievement and educational expectations. The educational expectations and academic achievement were strongly positively correlated and very unequally distributed

between students of different social backgrounds. This study shows that students with either higher aspirations or high expectations have higher school achievement than those with both low aspirations and low expectations. This study however, used longitudinal research which being a long-term research may increase the chances of unpredictable outcomes. In this context, the current study investigated how expectations relate to academic achievement among form three students using a one-off data collection procedure.

Similary, Khattab (2015), using a longitudinal study in England (LSYPE) examined how different combinations of aspirations, expectations and school achievement influenced university students' future educational behaviour. The students were aged 17 to 18 years. The findings revealed that students who had either high aspirations or high expectations also had higher achievement than those with both low aspirations and low expectations. Although there were no age differences between the participants of the current study, the researcher examined the data by a one-off data collection procedure.

On the other hand, Levi, Einav and Ziv (2014) studied adolescents' hope, academic expectations and average grades. The sample consisted of 289 high school students. The results demonstrated that hopeful thinking had a direct effect on grade expectations, which in turn predicted academic achievement. Other studies have investigated the role of expectancy constructs in achievement (Wigfield & Eccles, 2000). These studies have used both cross-sectional and longitudinal designs on their self-perceptions of ability and expectancy for success in Math and English. These studies have consistently shown that students' self-perceptions of their ability

and expectancies for success are the strongest predictors of subsequent grades in Math and English. These self-perceptions are even better predictors of later grades. These findings highlight the importance of students' expectancies and self-perceptions of competence as mediators between the environmental context and actual achievement behaviour. However, since most of the reviewed literature was mainly from the western countries there was a dearth of local studies on the relationship between students' academic expectations and academic achievement. The current study, therefore, purposed to fill this gap.

The study on expectations by Hattie (2009) emphasizes on the power of high expectations in closing achievement gaps. The findings reveal that the students' belief standards should not be lessened for students with perceived disadvantages. These findings underline the fact that not only do students' achievement outcomes support the idea of establishing high expectations for all students, but also the learners themselves appreciate the effectiveness of setting equal, high expectations for both themselves and their peers. The study suggests that expectations shape the learning experience very powerfully. Higher expectations result in higher performance, and that persons with high expectations perform at a higher level than those with low expectations, even though their measured abilities are equal (Schilling, 1999). The current study intended to contribute more knowledge on how academic expectations influence academic achievement in the population of study.

The study by Eccles et al. (2000) examined children's ability beliefs and expectancies for success in music, math, reading and sports. The findings indicated that children's beliefs in every domain formed distinctive factors. The items

measuring ability beliefs and expectancies for success in the domain characterized each factor. This domain differentiation occurred even for the first grade children in the study. Additionally, young children were able to differentiate between their ability related beliefs and subjective task values. The study further established that the children's ability– expectancy beliefs and subjective values formed clearly distinct factors within the domains of math, reading, music, and sports. These findings indicated that even during early elementary grades children have distinctive beliefs about what they are better at and the value in different domains of achievement. Eccles et al. (2000) study focused on primary school students unlike the present study that sought to explore this relationship further, using a sample of secondary school students.

To understand the influence of age on achievement related behaviour, Stipek and Hoffman (1980) study found that younger children had more positive achievement-related beliefs than older children. They argued that children's ability-related beliefs and values become more negative in many ways as they get older, at least through early adolescence. The children also believe they are less competent in many activities and often value those activities less. The negative changes in children's achievement-related beliefs have been attributed to their higher ability to understand and interpret the evaluative feedback they get and their more engagement in social comparison with their peers. These processes make children become more accurate or realistic in their self-assessments thus making their beliefs relatively more negative. Moreover, the school environment changes and makes evaluation more salient and competition among the students more likely. This lowers some children's achievement beliefs (Stipek and Hoffman, 1980; Wigfield & Eccles 2000). The age

difference of these participants prompted the current study to allow comparison of the findings. This study was also designed to give renewed focus since these findings were two decades old.

In Kenya, the study by Mwangi (2015) focused on predictors of academic achievement. High expectations were hypothesized as external predictors of academic achievement. The study was carried out in Kiambu County using a sample of 390 high school students. The researcher employed a descriptive correlational research design. The findings were that students with high expectations were likely to be academically resilient. High expectations were found to significantly positively predict academic achievement. The researcher argued that high expectations were important because they enabled the students understand they had the capacity to succeed. The current study gives more focus on academic expectations as a correlate of academic achievement.

In another study, Mugo and Kibera (2014) studied factors affecting motivation, academic expectations and aspirations of students in secondary schools in Laikipia county, Kenya. The study employed a survey research design with a sample of 349 students (194 boys). Collection of data was carried out using self-structured questionnaires. The findings revealed that although all students expected higher academic achievement, boys hoped to attain better results than girls. The findings also established that students in single sexed secondary schools had slightly higher academic expectations and aspirations compared to students in co-educational secondary schools. Generally, majority of students had unrealistic academic expectations. Unfortunately, the researcher did not investigate whether the variable

of academic expectations was correlated to academic achievement, a focus of the current study.

The findings by Onduso (2010) were that students had low expectations in comparison to the teachers. The researcher attributed this to the low performance in the Mathematics achievement. However, this local study only compared the findings from the two groups and did not adequately address the relationship between academic expectations and academic achievement. The current study shed more light in the area. In addition, Onduso's study was a case study, which limited its generalization.

2.4 Gender Differences in Students' Causal Attributions and Academic Expectations

The study on gender differences in students' causal attributions and academic expectations may help in providing the best intervention for gender. Several studies were reviewed in an attempt to examine the gender differences in the two variables. Farid (2017) studied causal attribution beliefs of success and failure among secondary school students in Pakistan. Participants of the study included 1826 students. A self-reporting causal attributions beliefs scale was used to collect data. The scale measured eight causal beliefs about success and failure. Results showed that both male and female students endorsed internal attributions as possible reasons of their success as well as failure than external attributes. Previously, Farid (2012) had conducted a study on causal attributions beliefs in Mathematics and English among Pakistan children. The sampled students were 396 (224 females). A questionnaire was used to measure eight kinds of beliefs namely ability, effort, luck, task difficulty, strategy, interest, teacher influence and family influence. The study

established significant gender differences in their causal attributional pattern. Significant mean differences were established in failure attributions of male students and female students in mathematics and English. However, Farid's studies were both conducted among Pakistanis who could have had diverse cultural expressions of causal attributions among males and females from the current population of study.

In China, Mok, Kennedy, and Moore (2011) analyzed the causal interpretations given by secondary school students for academic success and failure. The study investigated how the variables of gender, class level and level of achievement were related to the students' academic attributions. A sample comprising of 325 (165 girls, 160 boys) was used. Data were analyzed using multivariate analysis of variance. Significant gender differences were found in causal interpretations for school performance for students with similar cultural backgrounds. Females explained their academic failure in terms of their lack of ability and strategy use than males. Females also ascribed their academic success to strategy use or effort while male attributed success to ability. The study findings were that males and females in all class levels persistently attributed effort as the most significant cause for academic outcomes. The current study investigated gender differences in causal attributions further.

In the study of Brazillian students on their causal attributions for success and failure in Mathematics, Boruchovitch (2004) used 110 participants aged 8-16years. The participants were from low social -economic status. Males reported more external attributions in explaining both their success and failure than the females. The findings were inconsistent with the previous study by Stipek and Hoffman (1980)

which found that males were more vulnerable to attributing their failure to lack of ability. This study was however carried out in USA thus a possibility of intervening cultural diversity which made the current study necessary.

Genet (2014) study among Ethiopians examined causal attributions by college-age students regarding their academic achievement. A descriptive survey design was employed. The total sample was 104 second year university students. Academic success was attributed to internal factors while academic failure was attributed to external factors. Males attributed their academic achievement to ability, whereas females reported no significant difference in their attribution to effort, context or luck. Males blamed poor performance on an unstable cause that could be changed in the future. Females reported lack of ability as a more important cause for failure than males. The current researcher employed a correlational research design in a different context and population.

Elsewhere, Kitila and Jackline (2012) study among 260 Tanzanian university students found statistically significant differences in attributions between male and female students. A higher number of females attributed their academic performance to internal causes than their male counterparts. The study findings negated those by Abiodun and Owoyele (2011) who found no significant gender differences in causal attributions for failure. There was inconsistency in findings from the two studies, which prompted the current study that explored the gender differences in causal attributions further.

In addition, Onduso (2010) studied causal attributions in Mathematics achievement in Kiambu County. The study comprised of a sample of 140 (80 girls, 60 boys). The

results show that boys attributed success to themselves more than girls. Boys also attributed success to external factors more than the girls. With regard to failure, boys attributed failure to themselves more than did the girls. Boys also attributed failure to external factors more than girls. There were no significant differences in the means between boys and girls in attributing success to external factors and failure to teachers. Boys attributed failure to themselves more than the girls There were significant differences between boys and girls in attributing failure to internal causes. However, there were no significant differences between boys and girls in attributing failure to external factors. Onduso's (2010) study was however, a case study of Chief Koinange High school and therefore, generalization of the results to the current study was limited.

On gender differences in academic expectations, Rosenbaum, Deluce and Miller (1999) reported gender variations in achievement related beliefs. Girls had more negative achievement related beliefs than boys. The girls' expectation for higher grades was also lower. Girls were more depressive in style than boys and perceived their failure to be caused by stable factors and success to external factors. The present study purposed to re-examine further the gender differences in academic expectations in the population of study.

In Kenya, Mugo and Kibera (2014) investigated factors affecting motivation, academic expectations and aspirations of students in secondary schools in Laikipia County. The study employed a survey research design with a sample of 349 students (194 boys). The findings revealed that although all students expected higher academic achievement, boys hoped to attain better results than girls. The researcher

had recommended that more counties be studied for comparative purposes and generalization of results to the rest of the country. The current study was therefore carried out in Kiambu County and employed a correlational research design that allowed making of inferences.

2.5 Interaction Effect of Causal Attributions and Academic Expectations on Academic Achievement

Numerous studies have hypothesized that students' academic expectations are dependent on causal attributions for success or failure and their subsequent academic achievement. In the study by Lei (2009) on causal attributions of academic achievement among college students in China, a sample of 1400 students was used. Data were collected using an open-ended questionnaire. The results revealed that there exists an internal relationship between the stable causal attributions and expectations for success. Lei (2009) hypothesized that the college students in all the ages (1^{st} to 4^{th} years) believed they could succeed in the future. He found that students who had higher expectations after failure were eager to work hard and willing to make progress. They were aware that results of failure could be changed and were willing to make great effort to achieve future success.

Weiner's theory of achievement attribution (1985) proposes that attributing failure to internal, uncontrollable and stable factors such as low ability hinders future achievement behaviour since the students may feel hopeless and frustrated. They perceive failure as being inescapable and unavoidable. On the other hand, attributing failure to internal, controllable and stable causes has positive implications for future achievement. This means the causes are within their control and they can overcome

these academic difficulties. Students' employing maladaptive attributions end up developing persistent expectancies that success is impossible and they lose motivation of exerting effort. On the other hand, students employing adaptive attributions increase their expectations for success in future, which lead them to exert more effort and persistence in achievement striving. Research on interaction effect of attributions and the level of expectancy on academic achievement is lacking especially in the local setting and therefore, the current study endeavored to address this gap. This study makes contribution to the area of interaction effect of causal attributions and academic expectations.

In addition, the study by Raymond (1999) suggested that high achievers were likely to receive feedback from teachers, attribute more academic failures to internal factors, and have high self-efficacy. Conversely, low achievers develop more learned hopelessness, which leads them to make more stable attributions for academic failures as they become more hopeless and believe that they have little chance of ever doing well. In situations where success is perceived to be a product of factors that people can control such as motivation, efforts, and diligence, the assumption is that the good scores will occur again. When the students attribution of failure is something they may not control they have a high probability of a lowered expectation for success in the future. The current study explored further on the interplay of causal attributions and academic expectations in predicting academic success or failure.

Previously, the study by Stipek and Hoffman (1980) had assessed children's expectations of their achievement in relation to academic achievement, sex and

histories using a sample of 120 1st and 3rd graders. Those who attributed failure to low ability had relatively low expectations for success in future. These findings implied that children's beliefs on the causes of previous academic outcomes mediated their subsequent expectations, as indicated by theories of attribution. Consequently, this study gave renewed focus in the link between attributions, academic expectations and academic achievement using secondary school students.

2.6 Summary of Literature Review and Gap Identification

The literature reviewed on attribution styles and academic achievement depict that causal attributions can have both positive and negative effects on student learning and achievement. However, most of these studies on causal attributions and academic achievement were carried out in America, Asia and Europe thus necessitating a study in the current population of study.

Furthermore, a reciprocal relationship between students' academic expectations and academic achievement was established theoretically and empirically. Students' academic achievement was significantly influenced by their academic expectations. Pupils with high expectations performed better than pupils with low expectations. Much of these research was however, carried out in the western countries. The research directly linking academic expectations to academic achievement is relatively scarce locally. The present study aimed at addressing these limitations.

Studies on gender differences in causal attributions and academic expectations show contradictory findings. Some studies found no sex differences in causal attributions and academic expectations while in others male and female students had different

causal attributions and academic expectations. The current study explored the gender differences further to help the researcher compare of the findings.

Lastly, an interaction effect of causal attributions and academic expectations on academic achievement was established both theoretically and empirically. However, the studies on the interaction effect were scarce locally and the current study made contributions in the area of study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the research design, sampling techniques, instruments for data collection and the procedures, which were followed in the analysis of data.

3.2 Research Design

The study employed a correlational research design. This research design examines the co-variation or degree of relationships between two or more variables and helps determine the direction and strength of the relationship (Whitley & Kite, 2013). This design was therefore considered appropriate for this study because it allowed the researcher to correlate students' causal attributions and academic expectations scores with the academic achievement scores. The design also helped to determine the degree and direction of association of the predicted relationship. The study generated quantitative data, which enabled further inferences and generalizations.

3.2.1 Research Variables

In this study the predictor variables were the students' causal attributions and academic expectations. Causal attributions had two levels: Causal attributions for success and failure. Each level had three causal dimension namely, locus of causality, controllability and stability. Locus of causality was either internal or external, controllability was controllable or uncontrollable and stability was either stable or unstable. Academic expectations had two levels: positive and negative expectations. Students' causal attributions were inferred from a total score at the

interval level obtained from MMCS that sought to their attributional styles for success and failure. The students' academic expectations were inferred from a total score at the interval level obtained in a self-report academic expectancy scale questionnaire that sought to know their future evaluative expectations. The outcome variable was the students' academic achievement also measured at interval level of measurement. Academic achievement was obtained from the respondents mean scores in the form three mid-term and end of Term one examinations in year 2017. The mean scores were converted into standard Z-scores and then transformed to T-score to make them comparable among the different schools. Category of the school, type of school, gender, and age were considered as intervening variables. The researcher hypothesized that the students' causal attributions and academic expectations would be related to academic achievement.

3.3 Location of the Study

The study was carried out in selected public secondary schools in Thika sub-county, Kiambu County. Thika sub-county comprised of Thika East and Thika West. The County was selected since it had been rated amongst the worst performing counties in the Kenya Certificate of Secondary Examination (KCSE). Statistics obtained from the Thika Sub –County, Education office (2017) revealed that in 2014, 2015, and 2016 the KCSE mean was 4.0. This implies that the majority of the candidates failed to join higher institutions of learning. These results may also jeopardize their opportunity for job placement and may reduce the individual's active participation in national development. The realization of this continued poor performance necessitated the choice of location. The poor academic performance in Kiambu has often been associated to the physical and administrative factors (Kimani et al., 2013)

which have been widely studied. Since the dismal performance had persisted, it was possible that psychological factors could be contributing to the poor performance. This study therefore, examined the relationship between causal attributions and academic expectations. These psychological factors have been scantly addressed by the local research. It was hoped that if a relationship was established, intervention programs would be established to help improve academic achievement at in Kiambu County.

3.4 Population

The study targeted twenty-one schools with a population of 2660 (1540 boys, 1120 girls) form three students in the year 2017 from public secondary schools in Thika Sub- County, Kiambu County. The schools were of different categories. Some were single sex while others were co-educational schools. The schools were also categorized into National, Extra-county and Sub-county schools. Form three students were targeted because they had been in secondary school for atleast two years and, therefore, were likely to have formed causal attributions regarding their success or failure in academic achievement. Since participants were potential candidates, they were expected to have set academic expectations. The researcher also presumed that they could understand concepts, such as ability, effort, luck and task difficulty.

3.5 Sampling Techniques and Sample Size Determination

This section discusses the sampling methods used by the researcher and the sample size determination.

3.5.1 Sampling Techniques

The researcher applied three types of sampling procedures namely, purposive, simple random and stratified. Purposive sampling was used to select Kiambu County because of its continued poor performance in KCSE for the period 2014-2017. The study narrowed down to Thika sub-county, this is, Thika East and Thika West with 21 public schools. To select the 10 public secondary schools considered for the study, the researcher first used stratified sampling method. The public secondary schools were arranged into three groups based on their categories hence forming three strata namely national, extra-county and sub-county schools. This ensured equal representation of schools from each school category since each stratum was more homogeneous than the total population. The researcher got estimates that were more precise for each stratum, therefore, getting more reliable and heterogeneous information from the different strata. From the three groups (strata), the researcher used proportionate allocation to select 10 schools. The strata differed in sizes and this enabled the sizes of the sample to remain proportionate to the sizes of the strata. According to Kothari and Garg (2014), proportionate allocation is considered highly efficient and favourable since it estimates the population value of some characteristics and ensures that there is no difference within stratum variance. Simple random sampling was also used to select the 600 students from the sampled schools. This ensured that every subject had an equal chance of being selected thus resulting in a truly representative sample.

3.5.2 Sample Size Determination

Ten out of the 21 schools were sampled. The schools had a population of 2,660 (1540 boys and 1120 girls) form three students from which the sample of 600

students (320 boys and 280 girls) was drawn. This accounted for 18% of the target population. According to Vanroorhis and Morgan (2007), a sample of above 10% of the accessible population is large enough for statistical processing. The sample was first obtained through stratified sampling and later through proportionate allocation and lastly through simple random sampling procedures. Using class lists given in the schools, the researcher organized lists. For the coeducational schools two different lists were prepared for boys and for girls to ensure gender representation. Paper folds corresponding to the total number of respondents required were written ‘yes’ while the rest were left blank. They were then placed in a carton and thoroughly mixed. The students who picked the paper folds with the ‘yes’ were requested to remain in the hall as the rest went back to their classes. Those that remained were given code numbers to be used in the questionnaires for confidentiality purposes.

The participants were distributed in the three categories and types of schools and there were more boys than girls. This was a good representation of the population for it was in line with the proportionate allocation since the target population consisted of more boys than girls. Table 3.1 gives a summary of the target population and the sample size.

Table 3.1

Target Population and Sample Size

		Population			Sample Size		
School Cat	Type of School	Schools	Boys	Girls	Schools	Boys	Girls
NS	Boys Sch	1	240	-	1	90	-
	Girls Sch	1	-	240	1	-	80
ECS	Boys Sch	3	600	-	2	140	-
	Girls Sch	2	-	300	1	-	72
SC	Co-ed Sch	13	550	350	4	90	80
	Girls Sch	1	150	-	1	-	48
Total		21	1540	1120	10	320	280

Note. *N*=585. Cat= category; NS= national schools; ECS= extra-county schools; SC=sub-county schools.

Source: Sub-County Director of Education Office, Thika

3.6 Research Instruments

This section describes the instruments that were used to collect data. In this study, self-report questionnaires were used. Section I of the questionnaire consists of the instructions, and section II of student's background information such as student's code as their admission numbers, school category, school type, gender and age. Section III comprised MMCS and Section IV consisted of the Academic Expectancy Scale. Appendix C shows the specific items that were used to measure the causal attributions and academic expectations. To collect data on students' academic achievement a pro forma summary of students' examination results was used (Appendix D).

3.6.1 Multidimensional Multi-attributional Causality Scale

Lefcourt, VonBaeyer, Ware and Cox (1979) developed the scale. This scale was used to collect the data on students' causal attributions. The researcher sought authorization from the authors to use the scale (Appendix I). It comprises of internal

attribution measures namely ability and effort, and external measures, namely luck, and task difficulty that contribute to success or failure. The original scale contained three items per scale. The researcher adopted the scale employed by Wawire (2010) who had modified the original tool by developing a further three items for each subscale. Wawire (2010) instrument contained six separate items that assessed six specific domains and was used to measure attributions for success and failure among high school students in Nairobi County. The specific domains included ability attributions for success, ability attributions for failure, effort attributions for success, effort attributions for failure, external attributions for success, external attributions. The respondents indicated their level of agreement by scoring on a five-point likert scale ranging from 1- *strongly disagree* to 5-*strongly agree* for positively worded items and vice versa for negatively worded items. A high score of above 5 denoted high attribution to the domains while a low score or below 5 denoted low attribution to the domains.

3.6.2 Academic Expectancy Scale

The researcher developed the Academic Expectancy Scale, which had twelve items categorized into the expectations for future success (positive academic expectations) and the expectations for future failure (negative academic expectations). The respondents indicated their level of agreement by scoring on a five-point likert scale ranging from 1-*strongly disagree* to 5-*strongly agree* for positively worded items and vice versa for negatively worded items. A high score of above 5 for future academic success, denoted high expectations for future success or low expectations for future failure while a low score of below 5, for future academic failure denoted

low expectations for future success and high expectations for future failure. The scores ranged from 6 to 30 for each subscale.

3.6.3 Pro Forma Summary of Students' Examination Results

To measure academic performance of the students in form three, the researcher examined the achievement records from which the students' total marks in form three examinations for term one mid-term and end of term one year 2017 were obtained (Appendix D). The average score on the two examinations was tabulated for each student. A total of seven subjects were considered; two Languages (English, and Kiswahili), Mathematics, two or three Sciences (Chemistry, Physics or Biology), one or two humanities (Geography, History or Religious Education) or one technical subject. The mean scores were transformed into t-scores to make them comparable among the students in different schools.

3.7 Pilot Study

The research instruments were pretested on 25 students randomly selected from a coeducational school from the population of study. This school did not participate in the actual study. The pilot study helped in identifying ambiguous and vague items and therefore, enhanced reliability and validity of the multidimensional multi-attributional causality scale and the academic expectancy scale. It also allowed thorough checking of the planned statistical and analytical procedures and ensured they were appropriate.

3.7.1 Validity of Research Instruments

To ensure accuracy of the instruments and content validity, external validations were carried out. The researcher made use of the supervisors and the colleagues who read the items in the questionnaires and gave recommendations. The items were revised and refined based on the information provided from the pilot study. This enabled the questionnaires to be highly acceptable in collection of data since it helped remove ambiguity and made the items more relevant to the study. For the academic expectancy scale which the researcher developed, construct validity was ascertained by conducting an exploratory factor analysis (EFA). Kaiser-Meyer-Olkin (KMO) Test was used to examine the sampling adequacy for each item and to assess the proportion of variance among the items. The results indicated a good fit for a bi-dimensional structure of dimension 1(negativity) which explained 23.38 % of the variance while dimension 2 (positivity) explained 13.42% of the variance. Each dimension had six items. For the factor loadings, see Appendix J.

3.7.2 Reliability of Research Instruments

To evaluate the reliability of the Causal Dimension Scale, Cronbach alpha (α) coefficient was computed for each locus of control, controllability and stability dimensions. Table 3.2 gives a summary of analysis of measure of reliability.

Table 3.2
Summary of Analyses of Measures of Reliabilty

Variable	Items/ scale	Alpha coefficients Dong et al. (2013)	Alpha coefficients (pilot study)
Locus of Causality	18	.76	.78
Stability	18	.77	.78
Controllability	18	.66	.71
Academic Expectancy Scale	12	-	.73

Note. *N*=25

Table 3.2 shows that the reliability coefficient for causal dimension of locus of causality, stability and controllability were .78, .78 .71 respectively. This was slightly higher than measures reported by Dong et al. (2013) for the causal dimensions of locus of causality, stability and controllabity at .76, .77, and .66 respectively. The overall reliability coefficient for the Multi dimensional Attribution Scale was .75. An acceptable score is the one that is 0.7 and higher according to Shuttleworth (2015). The current study's reliability estimates for the locus of causality, stability and controllability dimensions indicated thus adequate levels of internal consistency for all measures and the scale was adopted. The reliability coefficient for the Academic Expectancy scale was .73, which was higher than at the piloting (.65). This scale was also considered adequate and was adopted for the study. The α coefficients indicated that there was internal consistency in the different items measuring the constructs of causal attributions and academic expectations.

3.8 Data Collection

This section provided the logistical and ethical considerations. It was followed by the data collection procedure and information on the actual data collection.

3.8.1 Logistical and Ethical Consideration

The researcher obtained a letter of authorization to collect data from the Graduate School, Kenyatta University. The letter was presented to the National Council for Science and Technology (NACOSTI) to enable the issuance of a research permit. Following issuance of a research permit from NACOSTI, the researcher presented the permit to the Kiambu County Commissioner and later to the County Director of education for authorization to visit the sampled schools. Permission was also sought

from principals of the participating public secondary schools by means of letter of introduction and consent form. The researcher later visited the sampled schools for introduction and familiarization with the school principals. The researcher explained the purpose of the study and the benefits expected from the study. The pre-visit aimed at organizing an appropriate day and time for the actual data collection. The researcher collected the data from the sampled schools within four weeks with the assistance of two research assistants. The respondents were informed of their freedom to participate/ or withdraw at whatever stage of the study. The researcher ensured confidentiality of the participants by coding and securing the data collected in sealed envelopes.

3.8.2 Actual Data Collection

On the actual day of data collection, the participants were presented with the opportunity to participate in the study. They were given a package that contained a detailed letter of consent and a letter of introduction that provided a thorough explanation for the purpose of the study and its assumed benefits before commencement of data collection. The researcher also assured the respondents of confidentiality and anonymity of their responses. The instruments were administered to the participants, and the researcher guided them on how to go through it. The respondents were given 40 minutes to fill the questionnaire after which the research assistants collected the research tools. The researcher collected the filled questionnaires and kept them safely. The class teachers provided the students' academic achievement scores from the official school records.

3.9 Data Analysis

The study generated quantitative data. The raw data was edited, classified and coded. The data was then entered into a computer for analysis using the SPSS version 20.0. Data was tabulated using both descriptive and inferential statistics. Descriptive statistics were used to describe the characteristics of the participants while the inferential statistics were used to test the null hypotheses. The statistical tests used were means and percentages, Pearson's coefficient of correlation, t-tests and analysis of variance (ANOVA). Pearson's product moment correlation (*r*) was used to measure the magnitude and the direction of correlation between the study variables. T-test was computed to test for gender differences in students' causal attributions, academic expectations and academic performance. ANOVA technique helped in exploring the significance of mean differences in causal attributions and academic expectations across school category, school type and age category. The data were then presented in form of tables. The following hypotheses were tested:

H_{01}: There is no significant relationship between causal attributions and academic achievement. This hypothesis was tested using Pearson's product moment correlation coefficient.

$H_{02:}$ There is no significant relationship between academic expectations and academic achievement. This hypothesis was tested using Pearson's product moment correlation coefficient.

H_{03}: There are no significant gender differences in causal attributions and academic expectations. This hypothesis was tested using the independent samples *t*-tests.

H_{04}: There is no significant interaction effect between causal attributions and academic expectations on academic achievement. This hypothesis was tested using regression analysis

CHAPTER FOUR

FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the findings, interpretations and discussions according to the objectives and hypothesis. The chapter is organized in four main sections comprising of, introduction, general and demographic information, analysis per objective and discussion of the results per objective followed by exploratory analysis. The findings of the study were guided by the following objectives:

i. To establish the relationship between students' causal attributions and academic achievement.
ii. To determine the relationship between students' academic expectation and academic achievement.
iii. To test for e gender differences in students' causal attributions and academic expectations.
iv. To determine the interaction effects between the students' causal attributions and academic expectations on academic achievement.

4.2 General and Demographic Information

The quantitative data obtained using the questionnaires were coded for statistical analysis. After completion of data entry, data cleaning was done to address outliers or improper entries that may contaminate the results. Tables were used in the presentation of the findings. Descriptive statistical procedures were used to describe the characteristics of the participants and summarize the collected data. Appropriate inferential statistical procedures were used to test each hypothesis.

4.2.1 Return Rate

The study comprised of 600 form three students from 10 public secondary schools in Thika Sub- County. These included two national schools, three extra-county schools and five sub-county schools. The schools were further categorized into boys, girls, and coeducational schools. The national and extra-county schools had both representation of boys and girls schools while the sub-county schools had a representation of girls and coeducational schools. The boys and girls schools were each three in total while coeducational schools were four. The targeted sample size compared with the actual response rate was as presented in Table 4.1.

Table 4.1

Return Rate

		Target			Total			
School Category[a]	School	Boys	Girls	Total	Boys	Girls	F	%
NS	1	90		90	90		90	15.4
	2		80	80		80	80	13.7
ECS	3	70		70	70		70	12.0
	4	70		70	70		70	12.0
	5		72	72		70	70	12.0
SS	6		48	48		45	45	7.7
	7	22	24	46	21	24	45	7.7
	8	25	20	45	25	20	45	7.7
	9	26	10	36	24	6	30	5.1
	10	17	26	43	15	25	40	6.8
Total[b]		320	280	600	315	270	585	100
	(100)	(53.3)	(46.7)	(100)	(52.5)	(45.0)	(97.5)	

Note. N= 585. [a] All were public schools, [b] ( ) indicate percentage of the target total
NS= national schools; ECS= extra-county schools; SS=sub-county schools.

Table 4.1 shows that the actual sample size consisted of 585 (315 boys and 270 girls) form three students since 15 incomplete questionnaires were discarded during the cleaning process. The elimination criteria included having more than three items not filled in the scale, giving multiple responses on items and scoring same answer consistently throughout the document. The students' response rate was 97.5%.

4.2.2 Demographic Data

This section gives details of the general information of the respondents along the variables of school category, type of school, gender and age category. The school categories involved in the study were national, extra-county and sub-county. The types of schools were boys, girls and coeducational. The data is presented in Table 4.2.

Table 4.2

Distribution of Respondents by School Categories, School Type, and Gender

		School Type			Total	
School Category	Gender	BS	GS	CS	F	%
NS	Girls	0	80	-	80	47.1
	Boys	90	0	-	90	52.9
SS	Girls	-	45	75	120	58.5
	Boys	-	0	85	85	41.5
ECS	Girls	0	70	-	70	33.3
	Boys	140	0	-	140	66.7
Total	Girls	0	195	75	270	46.2
	Boys	230	0	85	315	53.8
	Total	230	195	160	585	100

Note. *N*=585. NS= national schools; SS= sub-county schools; ECS= extra-county schools; BS= boys schools; GS= girls schools; CS=coeducational schools.

The data in Table 4.2 indicate that all the school categories fairly provided boys and girls respondents for the study and majority of the participants were boys. Only the sub-county category had coeducational schools. The participants' age, gender and type of school was tabulated. The results are presented in Table 4.3.

Table 4.3

Distribution of Respondents by Age, Gender and School Type

School Type	Age Category	Gender		Total	
		Girls	Boys	F	%
BS	13-15	-	15	15	6.5
	16-18	-	168	168	73.0
	19-21	-	47	47	20.4
GS	13-15	18	-	18	9.2
	16-18	148	-	148	75.9
	19-21	29	-	29	14.8
CS	13-15	6	3	9	5.6
	16-18	47	71	118	73.8
	19-21	22	11	33	20.6
Total	13-15	24	18	42	7.2
	16-18	195	239	434	74.2
	19-21	51	58	109	18.6
Total		270	315	585	100

Note. *N*=585. BS= boys schools; GS= girls schools; CS=coeducational schools.

The results in Table 4.3 show that in the boys schools, nearly three quarters were between 16-18 years, less than a quarter within 19-21 while the least were aged between 13- 15 years. In the girls schools majority were aged between 16-18 years followed by those between 19-21 years and few were between 13-15 years. Similarly, in the coeducational schools nearly three quarters were aged between 16-18 years, less than quarter were between 19-21 years while less than 10 percent were between 13-15 years.

The results from Table 4.3 also show that majority of the students from the three types of schools were aged 16-18 years. In reference to gender, almost three quarters of the girls were aged 16-18, about less than a quarter ranged 19-21 while the least were between 13-15 years. Three quarters of the boys were aged 16-18, less than a quarter were between 19-21 and only a few were 13-15 years. Therefore, in both

genders majority of the participants' age ranged between 16-18 years is within the official school ages for secondary education in Kenya according to UNESCO (2019). Data on participants' school categories, school types and age were analysed and the results are presented in Table 4.4.

Table 4.4

Distribution of Respondents by School Categories, Types and Age

		Age Category							
		13-15		16-18		19-21		Total	
School Category	School Type	*F*	%	*F*	%	*F*	%	*F*	%
NS	BS	5	2.9	68	40.0	17	10	90	52.9
	GS	9	5.2	59	34.7	12	7.1	80	47.1
SS	GS	4	1.9	32	15.6	9	4.4	45	22
	CS	9	4.4	118	57.6	33	16.1	160	78.0
ECS	BS	10	4.8	10	47.6	30	14.2	140	66.7
	GS	5	2.4	57	27.2	8	3.8	70	33.3
	BS	15	2.6	168	28.7	47	8.0	230	39.3
Total	GS	18	3.1	148	25.3	29	5.0	195	33.3
	CS	9	1.5	118	20.2	33	5.6	160	27.4
		42	7.2	434	74.2	109	18.6	585	100

Note. *N*=585. *F*= frequency; NS= national schools; SS= sub-county schools; ECS= extra-county schools; BS=boys school; GS=girls school= schools; CS=coeducational schools

The findings presented in Table 4.4 show that most of the students were aged between 16- 18 years while minority were 13-15. The entire age categories were fairy distributed in the school categories and types. Sub-county schools recorded the least number of students aged 13-15 while national schools recorded the highest. Notably, coeducational schools had the least number of students aged 13-15, which could also be attributed to the fact that coeducational schools were only represented in the sub-county category. Over 74% of the sample was aged 16-18 and this age category was fairly distributed in the national and sub-county schools. Notably, sub-county schools recorded the highest percentage of the respondents aged 19-21 while national schools had the least.

This could be explained by the fact that majority of the students placed in the sub-county schools are usually admitted with lower KCPE results in comparison to the other categories and therefore these schools could be retaining them in the lower forms until they record better grades. Grade repetitions are attributed to inadequate school readiness where the student may be labeled as a non- performer. According to Michaelowa (2003), retention is an intervention of improving the student's knowledge and preparing them for higher levels of learning. Moreover, participants' gender was tabulated with age and school type as shown in Table 4.5.

Table 4.5

Distribution of Respondents by Gender, Age, and School Categories

School Category	Gender	Age range						Total	
		13-15	%	16-18	%	19-21	%	F	%
	Girls	9	5.2	59	34.7	12	7.1	80	47.1
NS	Boys	5	2.9	68	40	17	10	90	52.9
	Total	14	8.2	127	74.7	29	17.1	170	100
	Girls	10	4.9	79	38.5	31	15.1	120	58.5
SS	Boys	3	1.5	71	34.6	11	5.4	85	41.5
	Total	13	6.4	150	73.1	42	20.5	205	100
	Girls	5	2.4	57	27.1	8	3.8	70	33.3
ECS	Boys	10	4.7	100	47.6	30	14.3	140	66.7
	Total	15	7.1	157	74.8	38	18.1	210	100
	Girls	24	4.1	195	33.3	51	8.7	270	46.2
Total	Boys	18	3.1	239	40.8	58	9.9	315	53.8
	Total	42	7.2	434	74.2	109	18.6	585	100

Note. *N*=585, NS= national schools; SS= sub-county schools; ECS= county schools; Sch= schools; Coed= coeducational.

The summary in Table 4.5, shows that all the school categories had fair representation of both girls and boys participants. However, sub-county schools had the highest percentage of girls participants followed by national schools with the least percentage of girls coming from extra-county schools. The results also indicate that the highest percentage of boys came from extra-county schools followed by national schools with the sub-county schools recording the least. In reference to age, more girls were aged 13-15 years while more boys were aged 16-18 and 19-21.

Generally, both sexes recorded the highest percentage of students at between 16-18 years. These results suggest that girls join the schools system earlier than boys.

4.3 Student's Academic Achievement

The students' academic achievement scores were obtained from the official school records. The mean of midterm and end of Term one examination scores were used as academic achievement score measures. To eliminate the school differences in academic achievement measures, the respondents' academic achievement mean scores were transformed into T-scores. This made the scores standard and comparable across the three different school categories**.**

4.3.1 Descriptive Analysis for Academic Achievement

The participants' academic achievement scores were compared across school categories, types of school, gender, and age. The results were presented in Table 4.6.

Table 4.6

Description of Academic Achievement by School Category, Type of School, Gender and Age

		Min	Max	Range	*M*	*SD*	Skewness
School Category	NS	44	70	26	56.30	6.02	-.041
	SS	19	70	51	45.48	10.58	.052
	ECS	25	65	41	49.31	9.38	-.312
School Type	BS	25	70	45	52.67	9.46	-.730
	GS	19	69	50	47.83	10.87	-.465
	CS	29	70	40	48.81	8.75	.085
Gender	Girls	19	69	51	47.78	10.07	-.363
	Boys	25	70	45	51.90	9.55	-.569
Age Range	13-15	30	69	39	50.59	9.02	-.032
	16-18	19	70	51	51.89	8.71	-.570
	19-21	29	67	38	49.48	10.34	.448

Note. *N*=585. NS= national schools; SS=sub-county schools; ECS= extra-county schools; BS= boys schools; GS= girls schools; CS= coeducational schools.

The findings presented in Table 4.6 show national schools had the highest academic mean score (M=56.30, *SD*=6.02, Range=26), followed by Extra-county schools (M=49.31, *SD*=9.38, Range=41) and Sub-county schools with the least (M=45.48, SD=10.58, Range=51). Academic achievement scores for the National and extra-county schools were negatively skewed while those of sub-county schools were positively skewed. That means most students scored highly in academic achievement in the national and extra-county schools while those in the sub-county schools scored lowly.

This could once more be explained by the fact that students placed in sub-county schools usually have low KCPE scores compared to those placed in national and extra-county schools. According to Kithela (2016), students with very high marks are admitted into national schools and are expected to produce high grades in KCSE. On the other hand, those with low KCPE marks are admitted to sub-county day schools that are poorly developed and consequently, expected to have poor grades. The merit consideration in placement is intended to ensure that performance in examination is rewarded.

In regards to school type, academic mean scores for the boys schools were the highest (*M*= 52.67, *SD*=9.46, Range=55), followed by coeducational schools with (*M*= 48.8, *SD*=8.75, Range=40) and girls schools (*M*= 47.83, *SD*=10.87, Range=50). The coefficient of skewness was negative for both boys and girls schools and positive for the coeducational schools. This indicates that most students from boys and girls schools scored highly in academic achievement while students in the coeducational schools performed poorly. Notably, these coeducational schools were

sub-county schools whose academic performance is generally poor. A student admitted in a national school or a well performing school, is generally expected to perform well. This student may therefore, develop achievement need behaviour as compared to those that are admitted in schools that mostly show dismal performance, especially the sub-county schools. This is referred to as behaviour-outcome expectancy (Eccles, 1983).

In regard to gender, boys had a higher mean in academic achievement (*M*= 51.90, SD-9.55, Range=45) than girls (*M*=47.78, SD=10.07, Range=51). The academic scores were negatively skewed for both boys and girls indicating high academic achievement scores. In terms of age categories those aged between 16-18 years had the highest mean in academic achievement scores (*M*=51.89, SD=8.71), those aged 13-15 (*M*=50, SD=9.02, Range=39) while those aged 19-21 had (*M*=49.48, *SD*=8.71, Range=38). Notably, the academic achievement scores were negatively skewed among the age categories, 13-15 and 16-18 years. Academic achievement was positively skewed among participants aged 19-21 years. This means that students between ages 13-15-and 16-18 scored highly while those aged between 19-21 scored lowly.

To describe the participants' academic achievement, range, mean, standard deviation, skewness, and kurtosis were computed. The results are presented in Table 4.7 (before transforming the academic mean scores into standard scores) and in Table 4.8 (after transforming the academic mean scores into t-scores).

Table 4.7

Description of the Respondents Academic Achievement before Transformation

	Range	*M*	*SD*	Skewness	Kurtosis
Acad. Ach	20 - 75	53.7	10.7	-.47	-.34

Note. *N*=585. Acad. Ach= academic achievement

Table 4.8

Description of the Respondents Academic Achievement after Transformation

	Range	*M*	*SD*	Skewness	Kurtosis
Acad. Ach	19-70	50.00	10.00	-.47	-.34

Note. *N*=585; Acad. Ach= academic achievement

Table 4.7 shows that participants' academic mean scores ranged from 20 to 75 (*M*=53.7, *SD*=10.7) before transforming them to standard scores while Table 4.8 shows that after transformation into T-scores the range was 19-70(*M*=50, *SD*=10). The distribution of academic scores was negatively skewed meaning that many participants scored highly in academic achievement. The reason could be because the sample comprised of a high number of students from national and county schools whose KCPE entry behaviour comprises of high performing and average performing students. The scores were grouped into low, moderate and high. The cut off scores for every group were as follows: 19-36 for low, 37-54 for moderate and 55-72 for high academic achievers. The results are presented in Table 4.9.

Table 4.9

Description of Respondents Academic Achievement Levels

Levels of Academic Achievement	Frequency[a]	*M*	*SD*
High	168(29)	61.34	2.99
Moderate	268(46)	45.51	4.57
Low	149(25)	29.94	2.92

Note: *N*= 585; *SD*= standard deviation
[a] ( ) indicate percentages of total

The findings in Table 4.9 indicate that majority of the respondents had average level of academic achievement (*M*=45.51, *SD*=4.57), followed by high performers (*M*=61.34, *SD*=2.99) and low performers (*M*= 29.94, *SD*=2.92). The standard deviation values illustrate that the highest variability of the achievement scores was among the averagely performing students while the least was among the scores of students in the low performing category.

4.4. Students' Causal Attributions and Academic Achievement

The first objective of the study was to determine the relationship between students' causal attributions and academic achievement. The causal attributions were categorized into causal attributions for success and causal attributions for failure. Based on the three dimensions of locus of causality, controllability and stability each of the levels had six sub-dimensions. Causal attributions for success were analysed under the six sub- dimensions namely; internal locus of causality attributions for success, external locus of causality attributions for success, controllable attributions for success, uncontrollable attributions for success, stable attributions for success and unstable attributions for success. Causal attributions for failure were analysed based on six sub- dimensions namely; internal locus of causality attributions for failure, external locus of causality attributions for failure, controllable attributions

for failure, uncontrollable attributions for failure, stable attributions for failure and unstable attributions for failure. The participants' causal attributions scores were compared across school categories, types of school, and age.

4.4.1 Causal Attributions by School Category

The categories of schools were nationals, extra-county and sub-county schools. Their means and standard deviations for the dimensions of causal attributions were computed. Descriptive statistics for causal attributions and category of school are presented in Table 4.10.

Table 4.10

Descriptive Statistics for Sub-Dimensions of Causal Attributions by School Categories

		Locus of Causality				Controllability				Stability			
S C		ILCAS	ILCAF	ELCAS	ELCAF	CAS	CAF	UNCAS	UNCAF	SAS	SAF	UNSAS	UNSAF
NS	*M*	45.76	35.58	15.18	21.85	21.50	13.64	36.68	39.15	28.15	23.72	31.89	35.95
	SD	4.90	5.72	4.57	4.40	3.54	3.51	5.64	5.72	4.44	4.50	5.49	5.25
SS	*M*	44.75	39.28	15.26	23.12	19.13	16.03	34.39	35.48	26.55	26.45	34.47	33.71
	SD	6.42	5.90	4.86	4.68	3.14	4.67	6.00	5.44	4.28	5.13	4.00	5.44
ECS	*M*	45.14	38.11	14.94	21.76	19.89	15.96	34.83	37.72	26.78	25.82	32.91	34.05
	SD	5.82	5.62	5.06	5.76	4.04	4.06	6.04	6.00	4.76	4.53	4.29	5.26
T	*M*	45.14	37.78	15.12	22.26	20.09	15.31	35.21	37.57	27.10	25.43	33.16	34.62
	SD	5.82	5.93	4.84	5.05	3.72	4.27	5.98	5.92	4.55	4.86	4.69	5.39

Note. *N*=585, SC= school category, NS= national schools, SS= sub-county schools, ECS= extra-county schools, M= mean; SD= standard deviation; SC= school category; ILCAS- internal locus of causality attributions for success; ILCAF= internal locus of causality attributions for failure; ELCAS-external locus of causality attributions for success; ELCAF= external locus of causality attributions for failure; CAS- controllable attributions for success; CAF= controllable attributions for failure; UNCAS-uncontrollable attributions for success; UNCAF= uncontrollable attributions for failure; SAS- stable attributions for success; SAF= stable attributions for failure; USAS-unstable attributions for success; USAF= unstable attributions for failure.

Table 4.10 shows that national schools had the highest mean (*M*=45.76, *SD*=4.90) in attributing success to internal causes while sub-county schools had the lowest mean (*M*=44.75, *SD*=6.42). In regards to attributing failure to internal causes, sub- county schools had the highest mean (*M*= 39.28, *SD*=5.9) while national schools had the lowest mean (*M*=35.58, *SD*=5.72). Sub-county schools had the highest mean (*M*=15.26, *SD*=5.39) for attributing success to external causes while Extra-county schools had the lowest (*M*=14.94, *SD*=5.06). Similarly, sub-county schools recorded highest mean in attribution of failure to external causes (*M*=23.12, *SD*=4.68) followed by national schools (*M*=21.85, *SD*=4.40) while, extra-county schools posted the least mean (*M*=21.76, *SD*=5.76). National schools were therefore, rated higher in internal locus of causality for success than both extra-county and sub-county schools. Internal attributions for negative events were associated with sub-county schools, which had a lower mean in academic achievement.

In attributing success to controllable factors, national schools had the highest mean (*M*=21.50, *SD*=3.54) while sub-county schools had the lowest (*M*=19.13, *SD*=3.14). Similarly, in regards to attributing failure to controllable causes, national schools had the highest mean (*M*=16.03, S*D*=4.67) while sub-county schools recorded the lowest (*M*=13.64, *SD*=3.51). On the other hand, the highest mean (*M*=36.6, *SD*= 6.00) in attributing success to uncontrollable attributions was obtained from sub-county schools while national schools had the lowest (*M*=34.39, *SD*=5.64). Similarly, the sub-county schools had the highest mean (*M*=39.15, *SD*= 5.72) in attributing failure to uncontrollable causes, while national schools had the least (*M*=35.48, *SD*=5.44). Attributing success and failure to controllable sources has been linked to high academic achievement since it means that the student has the

power to regulate. That could explain why the national schools academic achievement is better than that of sub-county schools.

In regards to stability attributions, Table 4.10 also indicate that national schools had the highest mean (*M*=28.15, *SD*=4.44) in attributing success to stable attributions while sub-county schools recorded the lowest (*M*=26.55, *SD*=4.28). In attributing failure to stable attributions, sub-county schools had the highest mean (*M*= 26.45, *SD*=5.13) while national schools had the lowest (*M*=23.72, *SD*= 4.50). The highest mean on attributing success to unstable attributions was obtained from sub-county schools (*M*= 34.47, *SD*= 6.00) with national schools recording the lowest (*M*=31.89 (*SD*=5.92). The sub-county schools however scored lowest (*M*=33.71, S*D*=5.44)) in attributing failure to unstable conditions, with highest score being obtained from national schools (*M*=35.95, *SD*=5.25). In high achieving environments such as national and in extra-county schools, unstable attributions for failure were consistently endorsed. These categories of schools were also rated highly in academic achievement. Unstable attributions for failure are associated with higher academic achievement since the perception is that failure can be avoided during the next future academic task.

4.4.2 Causal Attributions by Type of School

The types of schools were boys, girls and coeducational schools. The means and standard deviations for the dimensions of causal attributions and type of school were computed. The results are presented in Table 4.11.

Table 4.11

Description of Sub-Dimensions of Causal Attributions by School Type

School Type		Locus of Causality				Controllability				Stability			
		ILCS	ILCF	ELCS	ELCF	CAS	CAF	UNCS	UNCF	SAS	SAF	UNSS	UNSF
BS	*M*	46.03	36.66	15.01	21.49	20.72	14.82	35.73	36.31	27.73	24.55	32.02	33.60
	SD	4.53	5.91	4.92	5.24	3.97	4.18	5.90	6.05	4.55	4.63	4.15	5.13
GS	*M*	44.89	38.32	14.96	22.20	19.92	15.89	34.88	38.09	26.38	25.97	33.47	34.54
	SD	6.124	6.00	4.79	5.04	3.85	4.14	6.16	5.64	4.70	4.77	5.49	5.72
CS	*M*	44.74	38.74	15.48	23.44	19.38	15.31	34.86	38.75	27.06	26.03	34.44	36.16
	SD	6.28	5.63	4.81	4.58	2.97	4.50	5.86	5.77	4.25	5.13	3.95	5.01
T	*M*	45.14	37.78	15.12	22.26	20.09	15.31	35.21	37.57	27.10	25.43	33.16	34.62
	SD	5.816	5.93	4.84	5.05	3.72	4.27	5.98	5.92	4.55	4.86	4.69	5.39

Note. *N*=585. ILCS- internal locus of causality attributions for success; ILCF= internal locus of causality attributions for failure; ELCS=external locus of causality attributions for success; ELCF= external locus of causality attributions for failure; CAS- controllable attributions for success; CAF=controllable attributions for failure; UNCS=Uncas-uncontrollable attributions for success; UNCF= uncontrollable attributions for failure; SAS=stable attribution for success; SAF=stable attributions for failure; UNSS=unstable attribution for success; UNSF=unstable attributions for failure.

Findings presented in Table 4.11 show that boys schools had the highest mean (*M*=46.03, *SD*=4.53) in internal locus of causality attribution for success while coeducational schools had the lowest (*M*=44.74, *SD*=6.28). Concerning attributing failure to internal causes, coeducational schools had the highest mean (*M*=38.74, *SD*=5.63) while boys schools had the lowest (*M*=36.66, *SD*=5.91). Coeducational schools had the highest mean (*M*=15.48, *SD*=4.81) in attribution of success to external factors, followed by girls schools (*M*=14.96, *SD*=4.79) and boys attaining (*M*=15.01, *SD*=4.92). In terms of attributing of failure to external causes, highest mean was obtained from coeducational schools (*M*=23.44, *SD*=4.58) and the lowest from boys schools (*M*=21.49, *SD*=5.24) while girls schools had (*M*=22. 20, *SD*= 5.04).

The findings presented in Table 4.11 show that boys schools had the highest mean (*M*=20.72, *SD*=3.98) in attributing success to controllable causes while

coeducational schools had the lowest (*M*=19.38, *SD*=2.97). In attributing failure to controllable attributions, girls schools had the highest mean (*M*=15.89, *SD*=4.14) while the boys schools had the lowest (*M*= 14.82, *SD*=4.18). Boys schools recorded the highest mean in attributing success to uncontrollable causes (*M*=35.73, SD=5.90) followed by girls schools (*M*=34.88, *SD*=6.16) and coeducational schools following closely with (*M*= 34.86, *SD*=5.87). Coeducational schools (*M*=38.75, *D*=4.58) scored the highest mean in attributing failure to uncontrollable causes, followed by girls schools (*M*=38.09, *SD*= 5.64) while the boys schools scored lowest (*M*=38.09, *SD*=5.64).

In reference to stability attribution scores, data from Table 4.11 illustrate that boys schools had the highest mean (*M*=27.73, *SD*=4.55) in attributing success to stable attribution while girls schools had the least mean (*M*=26.38, *SD*=4.70). Results obtained for attribution of failure to stable attributions show that coeducational schools had the highest mean (*M*=26.03, *SD*=5.13) while boy schools had the lowest (*M*=32.91, *SD*=4.30). The highest mean score (*M*=34.44, *SD*=3.95) was obtained from coeducational schools for attributing success to unstable attributions followed by girls schools (*M*=33.47, *SD*=5.49) while boys schools had the least (*M*=32.02, *SD*=4.15). The highest mean was obtained from coeducational schools (*M*=36.16, *SD*= 5.01), in attribution of failure to unstable attributions followed by girls schools (*M*=34.54, *SD*= 5.72) while the boys schools had the lowest (*M*=33.60, *SD*= 5.13).

4.4.3 Causal Attributions by Age

The age categories were 13-15 years, 16- 18 years and 19-21 years. The means and standard deviations for the dimensions of causal attributions by age categories were

tabulated. The findings are presented in Table 4.12. The findings reveal that students between 19-21years had the highest (*M*=46.72, *SD*=5.61) for attributing success to internal causes while those aged 13-15years had the lowest mean (*M*=43.47, *SD*=5.29).

Table 4.12

Description of Sub-Dimensions of Causal Attributions by Age

Age range		Locus of Causality				Controllability				Stability			
		ILCS	ILCF	ELCS	ELCF	CAS	CAF	UNCS	UNCF	SAS	SAF	UNSS	UNSF
13-15	*M*	43.47	36.77	15.30	21.88	18.91	14.63	34.21	36.51	26.21	24.84	32.56	33.81
	SD	5.29	5.82	6.15	6.40	3.85	3.61	7.74	7.55	5.00	5.07	4.64	5.95
16-18	*M*	44.92	37.81	15.24	22.14	20.02	15.40	35.26	37.54	27.09	25.44	33.07	34.52
	SD	5.85	5.86	4.85	4.98	3.76	4.19	6.04	5.73	4.59	4.79	4.87	5.39
19-21	*M*	46.72	38.07	14.58	22.92	20.84	15.21	35.42	38.12	27.50	25.64	33.80	35.34
	SD	5.60	6.29	4.18	4.71	3.37	4.83	4.85	5.95	4.15	5.10	3.87	5.14
T	*M*	45.14	37.78	15.12	22.26	20.09	15.31	35.21	37.57	27.10	25.43	33.16	34.62
	SD	5.82	5.93	4.84	5.05	3.72	4.27	5.98	5.92	4.55	4.86	4.69	5.39

Note. N=585. ILCS- internal locus of causality attributions for success; ILCF= internal locus of causality attributions for failure; ELCS=external locus of causality attributions for success; ELCF= external locus of causality attributions for failure CAS= controllable attributions for success; CAF= controllable attributions for failure; UNCS=uncontrollable attributions for success; UNCF= uncontrollable attributions for failure; SAS=stable attributions for success; SAF=stable attributions for failure; UNSS=unstable attributions to success; UNSF=unstable attributions to failure.

In regards to attributing failure to internal causes, students aged 19-21 years had the highest mean (*M*=38.07, SD=6.29) while those aged 13-15 had the lowest (*M*=36.77, *SD*= 5.82). The highest mean for attributing success to external causes was obtained from students aged 13-15 (*M*=15.30, *SD*=6.15) followed by those aged 16-18 (*M*=15.24, *SD*=4.85) while those aged 19-21 years had (*M*=14.58, *SD*=4.18). In

regards to attributing failure to external attributions the highest mean was obtained from age range 19-21 (*M*=22.26, *SD*=5.05) and the lowest mean from ages 13-15 (*M*=21.88, *SD*=6.40) while those aged 16-18 had (*M*= 22.14, *SD*=4.98).

The findings also indicate that students aged 19-21years had the highest mean (*M*=20.84, *SD*=3.37) in attributing success to controllable attributions while those aged 16-18 obtained least mean (*M*=20.02, *SD*=3.76). Data obtained for attribution of failure to controllable attributions showed that students aged 16-18 years had the highest mean (*M*=15.40, *SD*=4.19) while those between 13-15years had the lowest (*M*=14.6, *SD*=3.60). In terms of attributing success to uncontrollable attributions the highest mean (*M*=35.42, *SD*=4.85) was obtained from students aged 19-21, followed by those aged 16-18years (*M*= 35.26, *SD*=6.04) while those aged 13-15 years had (*M*=34.21, *SD*=7.74). In reference to attributions of failure to uncontrollable causes, the highest mean was obtained from age range 19-21(*M*=38.12, *SD*=5.95), those aged 16-18 years had (*M*=37.54, *SD*=5.73) while age range 13-15 had the lowest (*M*=36.51, *SD*=7.55).

The findings indicate that students aged 19-21 had the highest mean (*M*=27.50, *SD*= 4.15) in attributing success to stable causes while those aged 13-15 had the least (*M*=26.21, *SD*=5.00). In regards to attributing failure to stable attributions students aged 19-21 years had the highest mean (*M*= 25.64, SD=5.10) while those between 13-15 years had the lowest mean (*M*=28.84, *SD*=5.07). Attributing success to unstable attributions obtained the highest mean from students aged 19-21(*M*=33.80, *SD*=3.87), followed by those aged 16-18 (*M*=33.07, *SD*=4.87) and students aged 13-15years with a mean (*M*=32.56, *SD*=4.64). In attributing failure to unstable causes the highest mean was obtained from age 16-18 years (*M*=34.52, *SD*=5.39), those

aged 13-15 years with a mean (*M*=33.81, *SD*=5.95) while those between 19-21 years had the lowest mean (*M*=33.34, *SD*=5.14).

4.4.5 Descriptive Analysis for the Sub-dimensions of Causal Attributions

Descriptive statistics for the twelve dimensions of causal attributions were tabulated and results presented in Table 4.13.

Table 4.13

Description of Sub –Dimensions of Causal Attributions

Attributions		Range	Min	Max	M	SD	Skewness
Locus	ILCAS	38	22	60	45.14	5.82	-.560
	ELCAS	24	6	30	15.12	4.84	.465
	ILCAF	42	16	58	37.78	5.93	-.095
	ELCAF	24	6	30	22.26	5.05	-.505
Controllability	CAS	21	9	30	20.09	3.72	-.199
	UNCAS	37	16	53	35.21	5.98	.297
	CAF	22	6	28	15.31	4.27	.356
	UNCAF	38	14	52	37.57	5.92	-.518
Stability	SAS	27	13	40	27.10	4.54	.010
	UNSAS	36	9	45	33.16	4.69	-.737
	SAF	31	9	40	25.43	4.86	-.192
	UNSAF	28	17	45	34.62	5.39	-.454

Note. *N*=585, Min = minimum; Max=maximum; SD= standard deviation; ILCAS- Internal locus of causality attributions for success; ILCAF= Internal locus of causality attributions for failure; ELCAS-External locus of causality attributions for success; ELCAS= External locus of causality attributions for failure. CAS- controllable attributions for success; CAF= controllable attributions for failure; UCAS-uncontrollable attributions for success; UCAF= uncontrollable attributions for failure; SAS- stable attributions for success; SAF= stable attributions for failure; USAS-unstable attributions for success; USAF= unstable attributions for failure.

The results in Table 4.13 show that attributing success to internal causes had the highest mean (*M*=45.14, *SD*=5.81, Range=38) while attributing success to external causes had the lowest (*M*=15.12, *SD*=4.84, Range=24). The scores for attributing success and failure to internal causes, and attributing failure to external causes. were negatively skewed. Only scores for attributing success to external causes were positively skewed indicating that most respondents did not perceive their success to

be a result of external causes. This meant that the students' perceived internal factors to greatly contribute to their success than the external factors. The explanation could be that students tend to attribute success to factors within themselves. These findings may reflect a self-serving bias characterized by attributing achievement to internal factors as a self-enhancing style. According to the Attribution Theory (Weiner, 2005) internal attribution allows the attributor to take credit for the good performance. If they perceived to have control over their success, this could lead to improved performance (Abodunrin, 1998). Surprisingly, they also highly attributed their failure to internal causes than external factors. This was a self-defeating approach since it would suggest that the attributes of the self are to blame for the failure.

The findings on controllability reveal that, attributing failure to uncontrollable attributions had the highest mean and the highest range (*M*=37.57, *SD*= 5.92, Range=38), followed closely by attributing success to uncontrollable attributions with (*M*=35.21, *SD*=5.98, *Range*=37). The lowest range was obtained in attributing success to controllable causes (*M*=20.09, *SD*=3.72, Range=21). The distribution of scores was found to be negatively skewed for attributing success to controllable factors and attributing failure to uncontrollable factors. There was positive skewness for scores obtained for attributing failure to controllable causes and success to uncontrollable causes. This type of attribution was detrimental since it illustrated that both success and failure were beyond their control and could lead to some level of helplessness (Batool & Akhter, 2012).

Concerning stability attributions, the results show that attributing failure to unstable attributions had the highest mean (*M*=34.62, *SD*=5.39) followed closely by attribution of success to unstable attributions (*M*=33.16, *SD*=4.69). The scores were negatively skewed for dimensions of unstable attributions for success, unstable attributions for failure and stable attributions for failure while scores were positively skewed for stable attribution for success. The findings indicate that the students believed failure was not consistent and they would probably succeed in the subsequent achievement tasks. This was a healthy attributional pattern since it created room for positive potential change. Nevertheless, the high mean in the attribution of unstable factors to success is a learned helplessness pattern since they are not sure whether success will reoccur again. This scenario could decrease their motivation of working harder.

In summary majority of the respondents attributed success to internal, uncontrollable and unstable causes. Attributing success to internal causes could lead to hopefulness since it meant success is within their control, which could make them unrelenting to academic tasks even when challenging. However, attributing success to unstable and uncontrollable reasons could be maladaptive since it may lead to lowered motivation thus, leading to deficit in academic achievement. Interestingly, failure among the participants was also attributed mainly to internal, uncontrollable and unstable causes. Attributing failure to internal and uncontrollable factors may be detrimental since it could lead to hopelessness. On the positive aspect, attributing failure to stable factors is encouraging since the student believed that future success was probable. This may lead to a high need for achievement and a disposition to strife for better performance in the future.

4.4.6 Hypothesis Testing

The first null hypothesis of the study was stated as follows:

H_{01}: There is no significant relationship between students' causal attributions and academic achievement.

To make this hypothesis testable, the researcher formulated 2 supplementary hypotheses:

$H_{01.1:}$ There is no significant relationship between students' causal attributions for success and academic achievement.

$H_{01.2:}$ There is no significant relationship between students' causal attributions for failure and academic achievement.

To test these hypotheses, scores for students' causal attributions for success and causal attributions for failure and academic achievement scores, were subjected to a bivariate analysis using the Pearson product moment correlation coefficient. The results are shown in Table 4.14.

Table 4.14

Correlation between the levels of Causal Attributions and Academic Achievement

		1	2	3
1	Causal Attributions for Success	-		
2	Causal Attributions for Failure	-	-	
3	Academic Achievement	.11**	-.11**	-

Note. N=585

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

* Correlation is significant at the 0.05 level (2-tailed).

As observed in Table 4.14, the findings indicate that there was a statistically significant positive relationship between causal attributions for success and academic achievement (r (583) =.11, p<.01). Therefore, the first supplementary null hypothesis was rejected. It was therefore concluded that, there was a significant

relationship between causal attributions for success and academic achievement. The results suggest that the higher the causal attributions for success the higher the academic achievement scores and the lower the causal attributions for success the lower the academic achievement score. On the contrary, the relationship between causal attributions for failure and academic achievement was found to be negative and significant (r (583) = -.11, p<.01). Therefore, the second supplementary null hypothesis was rejected. It was therefore concluded that, there was a significant relationship between causal attributions for failure and academic achievement. This negative relationship between the two variables suggests that an increase in causal attributions for failure would lead to a decrease in academic achievement and a decrease in scores of causal attributions for failure would lead to an increase in the scores of academic achievement.

Based on these findings, the researcher carried out further analysis on the causal attributions for success and causal attributions for failure on academic achievement. The researcher found it necessary to determine the relationship between each of the six sub- dimensions of causal attributions for success and causal attributions for failure. In order to establish the relationship between the six sub-dimensions of causal attributions for success and academic achievement, a correlation matrix analysis was performed using Pearson product moment correlation coefficient and the results are presented in Table 4.15.

Table 4.15

Correlation Matrix of Causal Attribution for Success and Academic Achievement

		1	2	3	4	5	6	7
1	ILCAS	1						
2	ELCAS	-.12**	1					
3	CAS	.71**	-.04	1				
4	UNCAS	.35**	.78**	.59**	1			
5	SAS	.54**	.47**	.78**	.86**	1		
6	UNSAS	.59**	.43**	.09*	.40**	.19**	1*	
7	Acad. Ach	.15**	-.11**	.32**	.11*	.19**	-.12**	1

Note. *N*=585. ILCAS= internal locus of causality attributions for success; ELCAS=external locus of causality attributions for success; CAS=controllable attributions for success; UNCAS=uncontrollable attributions for success; SAS= stable attributions for success; UNSAS=uncontrollable attributions for success; Acad. Ach= academic achievement

The results in Table 4.15 indicated that, there were significant correlations between the six sub-dimensions of causal attributions of success and academic achievement. The correlations ranged from weak (r (583) =.11, p<.05) to moderate (r (583) =.32, p<.01) and were either positively or negatively correlated. As observed in Table 4.15, the largest positive significant correlation was observed between controllable attributions for success and academic achievement (r (583) =.32, p<.01). This was followed by a significant positive correlation between stable attributions for success and academic achievement (r (583) = .19, p<.01), internal locus of causality attributions for success (r (583) =.15, p<.01), and, uncontrollable attributions for success (r (583) = .11, p<.01). These positive correlations meant that when students rated themselves highly in these attributions their scores in academic achievement improved. On the other hand, there was a weak negative significant correlation between unstable attributions for success ((r (583) = -.12, p<.01), and external locus of causality attributions for success (r (583) = -.11, p<.01). The negative correlations

implied that the students who rated themselves highly in unstable attributions for success performed poorly in academic achievement.

Therefore, attributing success to controllable attributions had the strongest significant relationship with academic achievement. Notably, most of the sub-dimensions for causal attributions for success had moderate to weak correlations. This could be an indication that there could be other factors influencing academic achievement.

Based on these findings, the researcher carried out further analysis on the causal attributions for success. A linear regression analysis of the sub-dimensions of causal attributions for success was performed to establish their differential contribution to the variance in academic achievement and the extent to which the different sub-dimensions predicted academic achievement. These sub-dimensions comprised of internal locus of causality attributions for success, external locus of causality attributions for success, controllable attributions for success, uncontrollable attributions for success, stable attributions for success and, unstable attributions for success. The results are presented in Table 4.16.

Table 4.16

Model Summary for Causal Attributions for Success and Academic Achievement

Predictors	*R*	*R* Square	Adjusted *R* Square	*SE*	Change Statistics				
					R Square Change	*F* Change	*df1*	*df2*	Sig. *F* Change
1	.15[a]	.02	.02	9.9	.02	12.96	1	583	.00
2	.18[b]	.03	.03	9.9	.01	5.66	1	582	.02
3	.36[c]	.13	.12	9.4	.01	63.69	1	581	.00
4	.36[d]	.13	.12	9.4	.00	.01	1	580	.92

Note. N=585, SE= standard error, Regression model summary [a]=ILCAS, [b]=ELCAS, [c]=CAS, [d]=SAS; Dependent variable: academic achievement; Predictors (constant) ILCAS= Internal

Locus of causality attributions for success; ELCAS=external locus of causality attributions for success; CAS= controllable attributions for success, SAS=stable attributions for success.

The results presented in Table 4.16 show that the regression model for predicting academic achievement using the dimensions of causal attributions of success explains 12% of the variance in academic achievement (Adjusted R^2 =.12). They were significant predictors of academic achievement (F (4,580) =21.08, p<.05). Out of six sub-dimensions of causal attributions for success, two sub-dimensions were excluded, which are unstable attributions for success and uncontrollable attributions for success. The largest contribution to the variance in academic achievement was explained by attributing success to controllable attributions. Based on these findings, a further analysis to determine the predictive weight of the sub-dimensions of causal attributions for success on academic achievement was done. The results are presented in Table 4.17.

Table 4.17

Predictive weights of Causal Attributions for Success on Academic Achievement

Predictors	Unstandardized Coefficients		Standardized Coefficients	*T*	Sig.	95% CL		Collinearity Statistics	
	B	SE	Beta			LL	UL	Tolerance	VIF
(Constant)	38.55	3.20		12.03	.00	32.25	44.85		
ILCAS	.25	.07	.15	3.60	.00	.12	.39	1.00	1.00
ELCAS	-.20	.09	-.10	-2.39	.02	-.37	-.04	.97	1.01
CAS	1.18	.15	.44	7.98	.00	.90	1.48	.49	2.03
SAS	-.02	.23	-.01	-.10	.92	-.47	.42	.14	6.98

Note: *N*= 585. ILCAS= internal locus of causality attributions for success; ELCAS=external locus of causality attributions for success; CAS=controllable attributions for success; SAS= stable attributions for success.

The results presented in Table 4.17 indicate that three sub-dimensions of causal attributions for success out of the six were significant predictors of academic achievement. Positive significant predictive weight on academic achievement were

found in Internal locus of causality for success (β=.15, p<.05), and controllable attributions for success (β=.44, p<.05). External locus of causality for success (β=-.10, p<.05) had a negative significant predictive weight. Attributing academic success to stable causes did not significantly predict academic achievement (β=-.01, p>.05). The best predictor for academic achievement was attributing success to controllable causes.

A unit increase in internal locus of causality attributions for success would lead to a 0.15 increase in academic achievement while a unit increase in controllable attributions for success would lead to a 0.44 increase in academic achievement. On the other hand, a unit increase in external locus of causality attribution for success would lead to a 0.10 decrease in academic achievement. Collinearity statistics values in Table 4.17 indicate that the variation inflation factor (*VIF*) for internal locus of causality for success was 1.00, external locus of causality 1.01, controllable attributions for success 2.03. Since these values were all below five it was an indication that their variance was not shared with each other thus showing no evidence of multicollinearity between these variables in the model. This meant that three variables were not redundant to each other. However, the VIF value for stable attributions for success was 6.98 meaning it had a high level of multicollinearity.

A significant regression equation was obtained:

y=38.55+.15(ILCAS) + -.10 (ELCAS) +.44(CAS) +-.01(SAS) (R^2=12) p<.05.

Where; ỹ = predicted academic achievement score; ILCAS= internal locus of causality for success; ELCAS= external locus of causality for success; CAS=controllable attributions for success; SAS=stable attributions for success.

Therefore, causal attributions for success were important in predicting academic achievement. In order to establish the relationship between the six sub-dimensions of causal attributions for failure and academic achievement, a correlation matrix analysis was performed using Pearson product moment correlation coefficient and the results are presented in Table 4.18.

Table 4.18

Correlation Matrix of Causal Attribution for Failure and Academic Achievement

		1	2	3	4	5	6	7
1	ILCAF	1						
2	ELCAF	-.08*	1					
3	CAF	.65**	-.20**	1				
4	UNCAF	.40**	.71**	.55**	1			
5	SAF	.50**	.45**	.73**	.91**	1		
6	UNSAF	.58**	.45**	-.13**	.29**	.06	1	
7	Acad. Ach	-.17**	.16**	-.34**	-.10**	-.20**	.15**	1

Note. *N*=585. ILCAF= internal locus of causality attributions for failure; ELCAF=external locus of causality attributions for failure; CAF=controllable attributions for failure; UNCAF=uncontrollable attributions for failure; SAF= stable attributions for failure; UNSAF=uncontrollable attributions for failure.

The results in Table 4.18 indicated that, there were significant correlations between the six sub-dimensions of causal attributions of failure and academic achievement. The correlations ranged from weak (r (583) =-.10, P<.01) to moderate (r (583) =-.34, p<.01) and varied in the directions. As observed in Table 4.18, the largest negative significant correlation was observed between controllable attributions for failure and academic achievement (r (583) =-.34, p<.01). This was followed by a significant negative correlation between stable attributions for failure and academic achievement (r (583) = -.20, p<.01), internal attributions to success (r (583) =-.17, p<.01), and lastly, uncontrollable attributions to failure (r (583) = -.10, p<.01). These negative correlations meant that when students rated themselves highly in

these attributions they scored lowly in academic achievement. On the other hand, there was a weak positive significant correlation between external locus of causality attributions for failure ((*r* (583) = .16, *p*<.01), and unstable attributions for failure (*r* (583) = .15, *p*<.01). The positive correlations imply that students who attributed failure highly to either external causes or unstable causes performed better. These types of attributions were hopeful because they suggested that there was something the attributors could do to improve the situation. However, the correlations for sub-dimensions for causal attributions for failure and academic achievement were moderate to weak correlations which could indicate that there could be other factors that could be influencing academic achievement.

Since the results showed that the six sub-dimensions of causal attributions for failure were significantly correlated to academic achievement, linear regression was run to establish their differential contribution in explaining the variation in academic achievement and the extent to which they predicted academic achievement. The sub-dimensions entered in the model were internal locus of causality attributions for failure, external locus of causality attributions for failure, controllable attributions for failure, uncontrollable attributions for failure, stable attributions for failure and, unstable attributions for failure. The Table 4.19 shows the differential contribution of the dimensions of causal attributions variables in explaining the variation in academic achievement.

Table 4.19

Model Summary for Causal Attributions for Failure and Academic Achievement

Predictors	R	R Square	Adjusted R Square	SE	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.17[a]	.03	.03	9.87	.03	17.39	1	583	.00
2	.23[b]	.05	.05	9.75	.02	14.05	1	582	.00
3	.35[c]	.13	.12	9.38	.07	48.84	1	581	.00
4	.36[d]	.13	.12	9.38	.00	.71	1	580	.40

Note. N=585, SE= standard error; Regression model summary predictor variables= causal attributions for failure; Dependant variable=academic achievement;

The results presented in Table 4.19 show that the regression model for predicting academic achievement using the dimensions of causal attributions for failure explains 12% of the variance in academic achievement (Adjusted R^2 =.12). They were significant predictors of academic achievement (F (4,580) =20.99, p<.05). Out of entered six sub-dimensions of causal attributions for failure, two were excluded, namely, unstable attributions for failure and uncontrollable attributions for failure. The largest contribution in explaining the variance in academic achievement was attributing academic failure to controllable attributions. The predictive weights of the sub-dimensions of causal attributions for failure on academic achievement were as presented in Table 4.20.

Table 4.20

Predictive weights of Causal Attributions for Failure on Academic Achievement

Model	Unstandardized Coefficients		Standardized Coefficients	*T*	Sig.	95% CL		Collinearity Statistics	
	B	SE	Beta			LL	UL	Tolerance	VIF
(Constant)	60.84	2.63		23.12	.00	55.67	66.01		
ILCAF	-.29	.07	-.17	-4.17	.00	-.42	-.15	1.00	1.00
ELCAF	.30	.08	.15	3.75	.00	.14	.46	.99	1.02
CAF	-.86	.12	-.37	-6.99	.00	-1.09	-.62	.55	1.82
SAF	-.22	.26	-.11	-.84	.40	-.73	.29	.1	10.54

Note. *N*=585. ILCAF= internal locus of causality attributions for failure; ELCAF=external locus of causality attributions for failure; CAF=controllable attributions for failure; SAF= stable attributions for failure.

The results presented in Table 4.20 indicate that out of the six sub-dimensions of causal attributions for failure, three were significant predictors of academic achievement. Negative significant predictive weight on academic achievement were found in Internal locus of causality for failure (β=-.17, p<.05), and controllable attributions for failure (β=-.37, p<.05). External locus of causality for failure (β=.15, p<.05) had a positive significant predictive weight. Attributing academic failure to stable causes did not significantly predict academic achievement (β=-.11, p>.05). The best predictor for academic achievement was attributing failure to controllable causes.

A unit increase in internal locus of causality for failure would lead to 0.17 decrease in academic achievement while a unit increase in controllable attributions for failure would lead to a 0.37 decrease in academic achievement. On the other hand a unit increase in external locus of causality for failure would lead to a 0.15 increase in academic achievement. Collinearity statistics values in Table 4.20 indicate that variance of Inflation values for internal locus of causality attribution for failure, external locus of causality attribution for failure and controllable attributions for failure were below five, an indication that their variance was not shared with each other thus showing no evidence of multicollinearity between the variables in the model.

A significant regression equation was obtained $\tilde{y}$ =60.84+-.17(ILCAS) + .15(ELCAS) +-.37(CAS) +-.11(SAS) (R^2=12) p<.05. Where;

$\tilde{y}$ = predicted academic achievement score; ILCAF= internal locus of causality for failure; ELCAF= external locus of causality for failure; CAF=controllable

attributions for failure; SAF=stable attributions for failure. Therefore, causal attributions for failure were important in predicting academic achievement.

4.4.6 Discussion of the Findings on Causal Attributions and Academic Achievement

The current study utilized the Multidimensional Causality Scale (MMCS) to evaluate the students' attributional style or specific reasons for explaining their academic outcomes based on three dimensions namely; locus of causality, controllability and stability. The present study found that every causal dimension was a potential cause for both success and failure. Different attribution patterns were identified for success and failure. In the study majority of the respondents attributed success to internal, uncontrollable and unstable causes. The results revealed that attributing success to internal and uncontrollable factors was significantly positively correlated to academic achievement. However, attributing success to unstable factors was significantly and negatively correlated to academic achievement thus being detrimental to academic striving. The present findings are consistent with Onduso's (2010) which compared teachers' and students' attributions regarding Mathematics achievement in Kenya using a sample of 140 students (80 girls and 60 boys). The findings were that the students attributed their success mainly to internal causes (hardwork, effort and ability).

The current findings are also consistent with those of Abodunrin (1989) following his examination of the students' attributions of causality for academic achievement using 154 college students. The students showed that students attributed both success and failure more to internal factors than external, uncontrollable than controllable and unstable than stable causes. In the current study, most of the

respondents perceived effort to be the main cause for success and lack of effort to be the main cause for failure. Luck or lack of luck was attributed least as either causing success or failure. The study by Dweck (1999) states that when students succeed at a task they tend to attribute causality to themselves. In this study attributing effort to success may explain the presence of a self-serving attributional bias, where people make more internal attributions for positive events. This is a more enhancing attributional style, which is consistent with Dweck (1999) findings, who stated that self-enhancing nature of attributing success to effort could be the most effective way of increasing the likelihood of perseverance and preservation. The current results are inconsistent with the findings of Kaplan and Yahia (2017) whose results revealed that more students attributed failure more to lack of ability than to lack of effort. However, just like in the current findings luck was attributed less frequently to either success or failure in Kaplan and Yahia (2017).

This study's findings validate those of Abodunrin (1989) which observed that students attributed both success and failure to internal factors. The current findings are also in agreement with those of Solar (2015) whose study aimed at determining the attributions of academic performance in biology among university students. Using a sample of 43 students, it was found that many students attributed their success on internal factors (ability and effort). The findings of De Michele et al. (1998) are also consistent with the current findings since the students attributed success to themselves.

The descriptive analyses findings also reveal that the participants consistently endorsed internal, uncontrollable and unstable factors as the main attributions for

failure. The current findings indicate that attributing failure to internal and uncontrollable causes had a significant and negative relationship to academic achievement. Students who attribute failure to internal and uncontrollable factors could feel hopeless and frustrated. These students would be employing a learned helplessness pattern of attribution, which could make them develop persistent beliefs that success is not possible thus lead to lose motivation of putting more effort. The present findings are in consonance with those of Fazio and Palm (1998) which found that attributing negative events to internal and uncontrollable factors is hypothesized as having negative implications on future academic achievement. There is more devastation when one thinks that failure is by virtue of low ability, than when one believes that failure is due to bad luck, task difficulty, or lack of effort. Some researchers have refuted this and posit that students who perceive causes of negative results to be internal, stable and global causes attain higher GPA's and better academic achievement than those whose perceive negative results to be caused by external, unstable and particular causes (Satterfield, Monahan & Seligman, 1997).

The present findings however, indicate that attributing failure to unstable factors is positively correlated to academic achievement. Attributing failure to unstable causes is helpful since this means that the situation can be changed. Such students would be employing a masterly attributional pattern, which would increase their expectations for success in the future. This would lead them to put more effort.

The current findings negate the findings of Abiodun and Owoyele (2011) who sought to determine the factors that students attribute and their reactions to academic failures. The findings were that the students attributed their failure to more external

factors than internal. Surprisingly, they argued that this was detrimental since these students who experienced failure felt hopeless and helpless since the factors were beyond their control. The current study is inconsistent with that of Batool and Akhter (2012) which was designed to make comparison between the academic outcomes of high and low attribution groups. The findings were that students who attributed their failure to external and uncontrollable factors usually consider themselves more helpless in the face of any academic related task. The students were more likely to believe that future success was highly probable when they attributed their successes to high ability than if they attribute their success to other factors. In contrast, the attribution of an outcome to low ability makes future failure seem highly probable.

These current findings are inconsistent with those of Dong, Stupnisky and Berry (2013) who while investigating 156 American college students on multiple causal attributions in foreign language performance found that causal patterns are different between success and failure causes. The students reported more external control for success than failure and success attributions were more stable than failure attributions since they believed their success would reoccur in the future. The findings are also inconsistent with Farid (2012) study on causal attributions among Pakistan children. The current findings showed that all the dimensions of causal attributions were potential causes for the students' successes and failures and external causes were attributed more to success than failure. The findings seem to contradict those of De Michele, Gansneder and Solomon (1998) which revealed that failure was attributed more to external factors.

Contrary to the current findings are also those of Onduso's (2010) who found that the students attributed their failures mainly to external causes. In the current study the respondents perceived internal causes to be the reasons for their success. This suggests the high need for achievement and a disposition to strife to perform better in the future regardless of the performance level.

The study hypothesized that there was no relationship between causal attributions and academic achievement. The current results indicated that there was significant relationship between causal attributions and academic achievement. All twelve dimensions of causal attributions were significantly correlated to academic achievement. This suggests that causal attributions are significantly correlated to academic achievement. The magnitude of the relationship varied from weak to moderate and the directions were either positive or negative.

The study findings validate the theory by Weiner (1985) which asserted that people have diverse attributional style or specific reasons for explaining their academic outcomes based on three dimensions. According to Weiner (Weiner, 2005) if learners attribute success to internal factors such as ability, it generates positive academic motivation and behaviour. Nevertheless, if they attribute success to external factors such as ease of the task or attribute failure to more stable, internal and uncontrollable causes (innate ability), it is detrimental to later motivation and achievement striving. These arguments were similar to those of Fazio and Palm (1998) who established that students who attribute negative outcomes to internal, stable and global causes acquire lower grade points averages (GPA). This is in

comparison to individuals attributing negative events generally to external, unstable and specific factors.

The current findings are consistent with the findings of Gina Cortes-Suarez et al. (2008) whose focus was on the relationship among a high-risk course, low success rates, and attribution by examining the difference in the attributions passing and failing students. After attributing their performance along the dimensions of locus of causality, stability, personal controllability, and external controllability the results indicated that a statistical significance relationship existed between attributional styles of the students and academic achievement.

The present findings support those by Omrod (1999) which found a significant positive relationship between attributing internal causes to success, controllable attributions to success and stable attributions to success and academic achievement. He argued that our interpretation of our experiences affect the particular things we learn and are reflected in subsequent actions and behaviour hence boosting or hindering motivation for future learning. However, the current study partly deviates from that by Sambo et al. (2015) that aimed at establishing the relationship between causal attributions and academic attainment among college students in Nigeria. They used correlation research design with a sample of 389 students. They found no significant correlations among the causal attribution factors and academic attainment of students. Only external attributions of failure reported a significant correlation.

Further analysis through multiple regression revealed that majority of the dimensions of causal attributions were significant predictors of academic achievement. These findings are consistent with Lei (2009) study on causal

attributions of academic achievement among college students, where he found differences in the characteristics of causal attributions towards success and failure. The study found that the characteristics of causal attributions towards success and failure by the college students are a significant parameter of grade.

In conclusion, regardless of the different methodologies, variations in cultural context and the different samples from the present study, this study found a relationship between causal attributions and academic achievement. Specifically, a significant positive relationship was found between causal attributions for success and academic achievement while a significant negative relationship was established between causal attributions for failure and academic achievement. This implies that causal attributions relate to the students' academic achievement in Kenya. When the students formulate favourable attributions, it helps in generation of positive academic motivation and behaviour. On the other hand, if they form biased attributions it leads to a more hopeless situation which is detrimental to achievement striving.

4.5 Students' Academic Expectations and Academic Achievement

The second objective of the study was to determine the relationship between students' academic expectations and academic achievement. Academic expectations had two levels namely, positive and negative academic expectations.

4.5.1 Descriptive Statistics

Descriptive analysis of the participants' academic expectations were carried out. The participants' academic expectations scores were compared across school categories, types of school, and age.

4.5.2 Academic Expectations by Category of School, Type of School and Age

The category of school was national, extra-county and sub-county schools. The types of schools were boys, girls and coeducational schools while the age categories were 13-15, 16-18 and 19-21 years. A descriptive analysis of academic expectations was carried out in order to obtain the mean, standard deviation and skewness of academic expectations across the school categories, types and age. The results are presented in Table 4.21.

Table 4.21

Description of Academic Expectations by School Category, Type of School and Age

School Categories		AE	*M*	*SD*	*Sk*
School Category	NS	PAE	24.61	2.92	-.26
		NAE	15.06	4.90	.39
	SS	PAE	23.45	2.41	-1.409
		NAE	17.23	5.46	1.49
	ECS	PAE	24.64	3.83	-.91
		NAE	16.27	5.52	.20
School Type	BS	PAE	24.42	3.75	-.84
		NAE	15.32	5.23	.50
	GS	PAE	24.64	2.79	-.15
		N AE	16.53	5.37	-.04
	CS	PAE	23.41	2.49	-1.48
		NAE	17.26	5.43	2.03
Age Category	13-15	PAE	22.65	4.38	-.68
		NAE	17.35	5.75	.09
	16-18	PAE	24.34	2.89	-.46
		NAE	16.23	5.37	.93
	19-21	PAE	24.34	3.56	-.78
		NAE	15.91	5.30	.22

Note. *N*=585. NS=national schools; SS= sub-county schools; ECS= extra-county schools; BS=boys schools; GS= girls schools; CS= coeducational schools; AE= academic expectations; PAE= positive academic expectations; NAE=negative academic expectations.

As presented in Table 4.21 extra county schools had the highest mean in positive expectations (*M*= 24.64, *SD*= 3.83), followed by national schools (*M*=24.61, *SD*=2.92) and sub-county schools (*M*=23.45, *SD*=2.41). Positive expectations were negatively skewed. This suggests that all the students rated themselves highly.

Results for negative expectations show that sub-county schools had the highest mean score (*M*=17.23, *SD*=5.46) followed by extra county schools (*M*= 16.27, *SD*=5.52). National schools had the lowest mean in this level (*M*=15.06, *SD*=4.90). Negative expectations were positively skewed across all the categories. This implies that majority of the students rated themselves lowly on this level. These results suggest that all the students appreciate the power of high expectations. This reveals that students in all the categories believed that academic expectations should not be lowered even for students with perceived academic disadvantages.

In terms of types of schools the findings show that girls schools had the highest mean in positive expectations (*M*= 24.64, *SD*= 2.79), followed by boys schools (*M*=24.42, *SD*=3.72) and coeducational schools (*M*=23.41, *SD*=2.419). The score distribution for the positive expectation indicates negative skewness meaning the students rated themselves highly. Results for negative expectations show that coeducational schools had the highest mean score (*M*=17.26, *SD*=5.43) followed by girls schools (*M*= 16.53, *SD*=5.23) with boys schools reporting the lowest mean (*M*=15.32, *SD*=5.23). The coefficient for skewness for the negative expectations was positive for boys, girls and coeducational schools implying that majority of the students rated themselves lowly. These results show that most of the students were still hopeful regardless of their academic outcomes.

In regards to age the results in Table 4.21 indicate that the ages 19-21 and 16-18 had similar mean score in positive expectations of 24.34 (*SD*=3.56, *SD* =2.89) respectively. The ages 13-15 reported the lowest mean score of 22.65 (*SD*=4.38) in positive expectations. Ages 13-15 reported the highest mean score in negative

expectations (*M*=17.35, *SD*=5.75) followed by 16-18 years (*M*=16.23, *SD*=5.37) and the lowest score were reported in ages 19-21 (*M*=15.91, *SD*=5.30). The positive expectations recorded low variability among the age range in comparison to the negative expectations. The summary indicates that the values for skewness are below three, indicating a normal distribution as stated by Schmider et al. (2010).

4.5.3 Descriptive Analysis for the levels of academic expectations

A descriptive analysis was carried out with the purpose of getting the participants range, mean, standard deviation and skewness in the two levels of academic expectations. The results are presented in Table 4.22.

Table 4.22

Descriptive Statistics for Academic Expectations

Variables	Range	Min	Max	*M*	*SD*	Sk	Kurt
PAE	18.00	12.00	30.00	24.22	3.17	-.69	1.59
NAE	48.00	6.00	54.00	16.25	5.40	.74	3.15

Note. *N*= 585. PAE=positive academic expectations; NAE= negative academic expectations

As shown in Table 4.22 the positive academic expectations had the highest mean score (*M*=24.22, *SD*=3.17, Range=18) while negative academic expectations had the lowest mean (*M*=16.25, *SD*=5.40, Range=48). Positive academic expectations scores were negatively skewed meaning that many participants rated themselves highly contrary to negative academic expectations scores that were positively skewed meaning many students rated themselves lowly. The skewness and kurtosis for positive expectations were below three an implication that the scores were approximately normally distributed as per the criteria outlined by Schmider et al. (2010). These findings suggest that students supported the idea of establishing high

expectations for themselves, and appreciated the effectiveness of high expectations regardless of their academic achievement outcomes. They may also have understood they had the capacity to succeed and this may have generated high expectations. The high ratings could also mean that the students may have haboured unrealistic expectations, which may not necessarily result to high academic achievement. According to Kibera (2014) study on factors affecting motivation, academic expectations and aspirations he found out that generally, majority of students had unrealistic academic expectations.

4.5.4 Hypothesis Testing

The second null hypothesis of the study was stated as follows:

H_{02}: There is no significant relationship between students' academic expectations and academic achievement.

To make this hypothesis testable, the researcher formulated two supplementary hypotheses:

$H_{02.1:}$ There is no significant relationship between students' positive academic expectations and academic achievement.

$H_{02.2:}$ There is no significant relationship between students' negative academic expectations and academic achievement.

Having presented the descriptive analysis of the predictor variable the two supplementary null hypotheses were tested. To test these hypotheses, scores for positive academic expectations and negative academic expectations and academic achievement scores were subjected to a bivariate correlational analysis using the Pearson product moment correlation coefficient. The results are shown in Table 4.23.

Table 4.23

Correlation between Academic Expectations and Academic Achievement

Variables	1	2	3
1. PAE	-		
2. NAE	-.31**	-	
3. Acad. Ach	.28**	-.38**	-

Note. *N*=585; **level of significant at .01; PAE= positive academic expectations; NAE= negative academic expectations; Acad. Ach= academic achievement.

Findings in Table 4.23 indicated a significant positive relationship between positive academic expectations and academic achievement (r (583) =.28, p<.01). This suggests that the more the students' portrayed positivity in their academic expectations, the higher the academic achievement scores and the less they showed positivity in their academic expectations the lower the academic achievement scores. Subsequently, the first supplementary null hypothesis, that there was no significant relationship between positive academic expectations and academic achievement was rejected at p=0.05. It was therefore, concluded that there was a significant relationship between students' positive academic expectations and academic achievement.

Similarly, statistically significant negative correlation was established between negative academic expectations and academic achievement (r (583) =-.38, p<.01). This meant that the more the students portrayed negativity in academic expectations the lower the academic achievement scores and vice versa. Therefore, the second null hypothesis that there was no significant relationship between students' negative academic expectations and academic achievement was also rejected. The researcher

subsequently concluded that there was a significant relationship between students' academic expectations and academic achievement.

Based on these findings, the researcher carried out further analysis on academic expectations. A linear regression analysis was performed to establish the differential contribution of the levels of academic expectations to the variance in academic achievement and the extent to which the different levels predicted academic achievement. Table 4.24 shows the summary of the stepwise regression analysis for the levels of academic expectations and academic achievement.

Table 4.24

Stepwise Regression Analysis for Academic Expectations and Academic Achievement

	R	R^2	Adjusted R^2	Change Statistics				
				R^2 Change	*F*	*df*1	*df*2	Sig.
1	.38[a]	.14	.14	.14	96.31	1	583	.000
2	.41[b]	.17	.17	.03	19.96	1	582	.000

Note. *N*=585, [a]=negative expectations; [b]=positive expectations

From the model Table 4.24, the results reveal the differential contribution of positive and negative academic expectations variables in explaining the variation in academic achievement. Negative expectations accounted for 14% of the variance (R^2 =.14) while positive expectations explained 3% of the variation in academic achievement (R^2= .03). The results show that negative and positive academic expectations were significant predictors of academic achievement (F (2, 582) =59.70, p<0.05). The predictive weights of the levels of academic expectations on academic achievement were presented in Table 4.25.

Table 4.25

Beta Coefficients for Academic Expectations

		Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.	Collinearity Statistics	
		B	SE	Beta				
1	(Constant)	46.17	3.61		12.80	.000	Tolerance	VIF
	PAE	.56	.13	.18	4.47	.000	.91	1.11
	NAE	-.60	.07	-.32	-8.11	.000	.91	1.11

Note. *N*=585. PAE= positive academic expectations; NAE= negative academic expectations.

The results presented in Table 4.25 indicate that of the two levels of academic expectations, negative academic expectations were found to be the best negative significant predictors of academic achievement (β=-.32, p<.01) than positive academic expectations (β= 0.18, p<.01). A unit increase in positive academic expectations would lead to 0.18 increase in academic achievement while a unit increase in negative academic expectations would lead to a - 0.32 decrease in academic achievement. Collinearity statistics values in Table 4.27 indicate that tolerance for negative expectations and positive expectations were .91 therefore above .20. This meant that two variables were not redundant to each other. Their Variance of Inflation value was 1.11 for positive and negative academic expectations. Since the values were below five it was an indication that their variance was not shared with each other thus showing no evidence of multicollinearity between the two-predictor variables in the model.

4.5.5 Discussion of the Findings on Academic Expectations and Academic Achievement

The current study utilized the Academic Expectancy Scale to evaluate the students' academic expectations. The descriptive statistics indicate that students scored higher in the positive academic expectations than in the negative academic expectations. A

possible speculation is that not only do majority of student support the idea of establishing high expectations but also appreciate the effectiveness of setting equal, high expectations for themselves regardless of their academic ability. The present findings correspond with Lei (2009) interpretations that students who had higher expectations after failure were eager to work hard and willing to make progress. A student who believes that he/she really strains on a standardized test will more likely score poorly on the test. Their actual performance on the test is therefore, influenced by these beliefs.

The descriptive analyses further revealed that the participants in the lower age category had more negative related beliefs than the other age categories. These findings are inconsistent with the findings of and Mac Iver (1989) who found that younger children have more positive achievement-related beliefs than do older children. They argued that children's ability-related beliefs and values become more negative in many ways as they get older, at least through early adolescence. The negative changes in children's achievement-related beliefs have been attributed to their higher ability to understand and interpret the evaluative feedback they get and their more engagement in social comparison with their peers. These processes make children become more accurate or realistic in their self-assessments thus making their beliefs relatively more negative (Stipek and Mac Iver, 1989).

This study also found out that students' academic expectations had a significant relationship with academic achievement. The findings were that positive academic expectations had significant positive relationship with academic achievement while negative academic expectations had significant negative relationship with academic

achievement. These findings suggest that the students who perceived they were expected to perform poorly developed low aspirations, failure expectations, and lacked persistence in working on assignments. This would prevent them in achieving their full academic potential since it damages their self-efficacy. The present findings are consistent with the findings by Bui (2007), and Eccless and Wigfield (2000) who found the existence of a reciprocal relationship between students' achievement and expectations. Students had self-expectations, which significantly influenced their academic achievement.

The current findings were in agreement with the work by Hattie and Dweck (2012) which emphasized on the power of high expectations in closing achievement gaps. Their study suggests that expectations shape the learning experience very powerfully by arguing that higher expectations resulted in higher performance, and that person with high expectations were a higher level than those with low expectations. The current study findings corroborate those of Ichou (2017) who used a longitudinal study to investigate the expectations and achievement in students' academic trajectories using a cohort of 15,770 middle school students until they turn 20 years old. The study's findings were that the correlation between academic achievement and educational expectations is relatively high. Expectations and academic achievement were strongly positively correlated and very unequally distributed between students of different social backgrounds.

The study findings were consistent with those of Nagengast et al. (2011), Gasco and Villarroel (2014), and Guo et al. (2015) who found that expectancy beliefs strongly influence achievement. Further, the study results support those of Levi et al. (2014)

that studied adolescents hope, academic expectations and average grades using 289 high school students. The results demonstrated that hopeful thinking had a direct effect on grade expectations, which in turn predicted academic achievement. The current findings however, negate those of Onduso's (2010) who observed that students had low expectations in comparison to the teachers, which the researcher attributed to low performance in the mathematics achievement. The teachers had high expectations regarding students' future performance while the students were more satisfied with the scores.

The results from the multiple regression indicates that academic expectations were predictors of academic achievement with a regression equation significant (F=59.70, p<.05). The negative academic expectations had a negative significant prediction ability on academic achievement while the positive academic expectations had positive significant prediction on academic achievement. The findings are consistent with those of Mwangi (2015) which found out that high expectations were significant positive predictors of academic achievement since students with high expectations were likely to be academically resilient. The researcher observed that the high expectations were important because the students understood they had the capacity to succeed. Consistent with the findings is the results of Schilling (1999) who found that higher expectations resulted in higher performance, and that persons with high expectations performed at a higher level than those with low expectations, even when their measured abilities were equal.

In conclusion, regardless of the different methodologies, variations in cultural context and the different samples from the present study, this study found a

relationship between academic expectations and academic achievement. Specifically a significant positive relationship was found between positive academic expectations and academic achievement while a significant negative relationship was established between negative academic expectations and academic achievement. This implies that academic expectations relate to the students' academic achievement in Kenya. When the students have positive academic expectations they are hopeful and strive to excel in academic achievement but when they hold negative academic expectations they develop low aspirations and lack persistence in academic tasks leading to low academic achievement.

4.6 Gender Differences in Causal Attributions, Academic Expectations and Academic Achievement

The third objective of the study was to determine whether there were gender differences in the students' causal attributions, academic expectations. Gender differences in academic achievement were also explored.

4.6.1. Hypothesis Testing

The third null hypothesis was stated as follows:

$H_{03:}$ There are no significant gender differences in the students' causal attributions, academic expectations and their academic achievement.

To ensure effective testing of this null hypothesis, three supplementary hypothesis were formulated:

$H_{03.1:}$ There are no significant gender differences in the students' causal attributions.

$H_{03.2:}$ There are no significant gender differences in the students' academic expectations.

$H_{03.3:}$ There are no significant gender differences in the students' academic achievement

a. Testing the First Supplementary Null Hypothesis

$H_{03.1:}$ There are no significant gender differences in the students' causal attributions.

In order to test this hypothesis, the participants' causal attributions by gender were analyzed to find the mean and the standard deviation. The results are presented in Table 4.26.

Table 4.26

Descriptive Statistics for Causal Attributions by Gender

Variables	Gender	*M*	*SD*	*SE*
CAS	Boys	60.51	6.73	.38
	Girls	59.97	7.53	.46
CAF	Male	59.05	7.41	.42
	Female	61.20	7.40	.45

Note. *N*=585. CAS= causal attributions for success; CAF= causal attributions for failure.

The results in Table 4.26 revealed that boys had a higher causal attribution for success score mean (*M* = 60.51, *SD* = 6.73) than girls (*M* = 59.97, *SD* = 7.53). On the other hand girls had higher scores in causal attributions for failure (*M* = 61.20, *SD*= 7.40*)* compared to boys *(M* = 59.05, *SD* = 7.40). To test whether these mean differences were statistically significant, an independent samples t-test for students' causal attributions was performed. The results are presented in Table 4.27.

Table 4.27

Independent Samples t-test for Levels of Causal Attributions

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	*T*	*df*	Sig.)	*MD*
CAS	3.23	.07	.92	583	.357	.54
			.91	544.53	.361	.54
CAF	1.33	.25	-3.59	583	.000	-2.16
			-3.52	569.59	.000	-2.16

Note. *N*=585 *df* = degrees of freedom; *MD* = mean difference; CAS = causal attributions for success, CAF= causal attributions for failure.

The results in Table 4.27 indicate that there were no significant gender differences in the students causal attributions for success (t (583) = -.91, $p > .05$). The assumption of homogeneity of variances was evaluated and satisfied through a Levenes F test. There was homogeneity of variance for causal attributions for success (F (2,583) =3.23, p=07) and causal attributions for failure *(*F (2,583) =1.33, p=.25). The results however, indicate that there were significant gender differences in the students' causal attributions for failure (F (2,583) =3.52, p<.05). This meant that even if the boys had more attributions for success than the girls, the mean differences were not statistically significant.

The researcher further carried out descriptive analyses of the participants' sub-dimensions of causal attributions by gender to find the mean and the standard deviation. The results are presented in Table 4.28.

Table 4.28

Description for Sub -Dimensions of Causal Attributions by Gender

	Boys (315)					Girls (270)				
Variables	*Range*	*M*	*SD*	*Sk*	*Kur*	*Range*	*M*	*SD*	*Sk*	*Kur*
ILCAS	32	45.14	5.79	-.56	.44	38	45.14	5.85	-.56	.44
ILCAF	34	37.18	5.96	-.27	-.10	36	38.48	5.84	.13	-.10
ELCAS	24	15.37	5.00	.68	.55	22	14.83	4.65	.13	.55
ELCAF	24	21.86	5.02	-.47	.03	24	22.73	5.06	-.57	.03
CAS	19	20.37	3.74	-.17	-.15	21	19.76	3.67	-.26	-.15
CAF	20	14.99	4.28	.23	-.43	22	15.68	4.24	.53	-.42
UNCAS	30	35.75	5.85	.45	.21	37	34.59	6.08	.17	.21
UNCAF	34	36.85	5.95	-.74	.11	32	38.41	5.78	-.24	1.05
SAS	21	27.77	4.34	.11	-.52	27	26.31	4.67	-.01	-.52
SAF	25	24.89	4.74	-.22	.08	31	26.06	4.94	-.21	.08
UNSAS	30	32.74	4.19	-.45	1.57	36	33.66	5.18	-1.02	1.57
UNSAF	26	34.16	5.19	-.46	.14	28	35.15	5.59	-.50	.14

Note. *N*=585. ILCAS= internal locus of causality attribution for success; ILCAF= internal locus of causality for failure; ELCAS=external locus of causality for success; ELCAF= external locus of causality for failure; CAS=controllable attribution for success; CAF= controllable attribution for failure; UNCAS= uncontrollable attribution for success; UNCAF= uncontrollable attribution for failure; SAS= stable attribution for success; SAF= stable attribution for failure; UNSAS= unstable attribution for success; UNSAF= unstable attribution for failure.

The results in Table 4.28 show that boys (*M*=45.14, *SD*=5.79) and girls (*M*=45.14, *SD*=5.85) had the similar means in internal locus of causality attributions for success. Girls had a higher mean (*M*= 38.48, *SD*= 5.84) for internal locus of causality for failure than boys (*M*=37.18, *SD*= 5.96). Boys had a higher mean (*M*=15.37, *SD*=5.02) in external locus of causality attributions for success than girls (*M*= 14.83 *SD*=4.65). Girls had a higher mean (*M*=22.73, *SD*=5.06) in external locus of causality attribution for failure than boys (*M*=21.86, *SD*=5.00). In the following dimensions of causal attributions, girls had a higher mean than boys; controllable attributions for failure (*M*=15.68, *SD*=4.24), uncontrollable attributions for failure (*M*=38.41, *SD*=5.78), stable attributions for failure (*M*=26.09, *SD*=4.94), unstable attributions for success (*M*=33.66, *SD*=5.18) and unstable attributions for failure (*M*=35.15, *SD*=5.59). Boys had a higher mean in the following dimensions of causal

attributions: controllable attributions for success (*M*=20.37, *SD*=3.74), uncontrollable attributions for success (*M*=35.75, *SD*=5.85) and in stable attributions for success (*M*= 27.77, *SD*=4.34). From these figures, the researcher concluded that both boys and the girls primarily attributed their success and failure to internal causes. This pattern of attribution was favourable since it suggested that success and failure was within their control. In terms of controllability, both boys and girl attributed failure mainly to uncontrollable causes. This pattern of attribution was unhealthy because it would mean that the students would not be able to escape or avoid failure (Weiner, 1985).

To test whether these mean differences were statistically significant, an independent samples t-test for students' sub- dimensions of causal attributions was run. The results are presented in Table 4.29.

Table 4.29

Independent Sample T-test for Gender Differences in Causal Attributions

	Levene's Test for Equality of Variances		t-test for Equality of Means			
Variable	*F*	Sig.	*T*	*Df*	Sig	*MD*
ILCAS	.25	.62	.002	583	.99	.00
ILCAF	.54	.46	2.65	583	.01	1.30
ELCAS	.21	.64	-1.36	583	.18	-.55
ELCAF	.00	.98	2.06	583	.03	.86
CAS	.07	.79	-2.01	583	.04	-.62
CAF	.70	.44	1.96	583	.05	.69
UNCAS	1.07	.30	-2.36	583	.02	-1.16
UNCAF	.00	.98	3.19	583	.00	1.55
SAS	.09	.77	-3.91	583	.00	-1.46
SAF	.35	.56	2.92	583	.00	1.17
UNSAS	6.08	.01	2.36	583	.01	.91
UNSAF	1.92	.17	2.22	583	.03	.99

Note. N=585. ILCAS= internal locus of causality attribution for success; ILCAF= internal locus of causality for failure; ELCAS=external locus of causality for success; ELCAF= external locus of causality for failure; CAS=controllable attribution for success; CAF= controllable attribution for failure; UNCAS=

uncontrollable attribution for success; UNCAF= uncontrollable attribution for failure; SAS= stable attribution for success; SAF= stable attribution for failure; UNSAS= unstable attribution for success; UNSAF= unstable attribution for failure.

As presented in Table 4.29 the data was tested for homogeneity through a Levene's *F* test. All of the sub-dimensions of causal attribution indicated homogeneity of variance between the boys and girls except unstable attributions for success *F* (2,583) =6.08, $p<0.5$) which indicates a violation of the assumption. Results indicate that out of the 12 dimensions for causal attributions 10 reported had statistically significant gender differences at $p<0.05$. The exceptions were internal locus of causality attribution for success (t (583) =0.00, $p>0.05$) and external locus of causality for success (t (583) = -1.36, $p>0.05$). These results imply that most sub-dimensions of causal attributions were responsive to gender.

b. Testing the Second Supplementary Null Hypothesis

$H_{03.2:}$ There are no significant gender differences in the students' academic expectations.

In order to test this hypothesis, descriptive analyses of the participants' academic expectations by gender were tabulated to establish the mean and the standard deviation. The results are presented in Table 4.30.

Table 4.30

Descriptive Statistics for Academic Expectations by Gender

Variables	AE	*Range*	*M*	*SD*	Sk	Kurt
Girls	PAE	17	24.14	2.89	-.53	1.70
	NAE	48	17.07	5.63	.98	5.69
Boys	PAE	18	24.28	3.40	-.78	1.44
	NAE	22	15.55	5.07	.41	-.45
Total	PAE	18	24.22	3.17	-.69	1.60
	NAE	48	16.25	5.39	.74	3.15

Note. *N*=585. AE= academic expectations; PAE=positive academic expectations; NAE= negative academic expectations.

As presented in Table 4.30 the mean score for positive academic expectations for the boys was higher (*M*=24.28, *SD*=3.40, Range=18) than for girls (*M*=24.14, *SD*=2.89, Range=17). Girls mean score in negative academic expectations was higher (*M*= 17.07, *SD*=5.63, Range=48) than that of the boys which was (*M*=15.55, *SD*=5.07, Range=22). The students' scores for positive academic expectations were negatively skewed meaning the students rated themselves highly in this level regardless of gender. On the other hand, the distribution of respondents scores on negative expectations were positively skewed meaning that most of the participants rated themselves lowly on this level. The skewness for positive and negative expectations was below three. This meant that the scores were normally distributed thus satisfied the criteria outlined by Schmider et al. (2010).

To test whether these mean differences were statistically significant, the students' academic expectations were subjected to an independent samples t-test. The results are presented in Table 4.31.

Table 4.31

I*ndependent Sample T –test for Gender Differences in Academic Expectations*

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	*t*	*df*	Sig. (2-tailed)	*MD*	*SED*
PAE	8.72	.00	-.66	583	.50	-.030	.047
			-.64	581.07	.50	-.030	.045
NAE	5.12	.02	-2.98	583	.00	-.23	.078
			-2.96	554.32	.00	-.23	.078

Note. *N*=585. PAE=positive academic expectations; NAE=negative academic expectations

The assumption of homogeneity of variances was evaluated and satisfied through a Levenes *F* test. The assumption of homogeneity of variance had been violated for positive academic expectations (*F* (2,583) =8.72, *p*<05). This means that the two

groups had high variability in positive academic expectations. The results in Table 4.32 indicate that there were no significant gender differences in the students positive academic expectations (F (2,583) =.64, p=.61). The assumption of homogeneity of variance for negative academic expectations had also been violated (*F (2,583)* =5.12, p<.05). There was heterogeneity in the scores of negative academic expectation. The results indicate that there were significant gender differences in the students negative academic expectations (F (2,583) =-2.96 p<.05). The researcher upheld the null hypothesis that there were significant gender differences in students' positive academic expectations. The researcher however rejected the null hypothesis that there were no significant gender differences in the students' negative academic expectations. There were significant gender differences between the boys and the girls in their negative academic expectations. These findings presume that negative academic expectations were gender responsive.

Nevertheless, the gender differences were not statistically significant for positive academic expectations. The *t*-test statistical findings indicate a *t*-value of -.50, p> 0.05. This shows that the boys and girls scored relatively similarly in the positive academic expectations regardless of their academic achievement. The researcher therefore, retained the hypothesized null hypothesis that there were no significant gender difference in positive academic expectations. This suggests that positive academic expectations are not gender responsive.

c. Testing the Third Supplementary Null Hypothesis

$H_{03.3:}$ There are no significant gender differences in the students' academic achievement.

In order to test this hypothesis, descriptive analyses of the participants' academic achievement by gender were analyzed to find the mean and the standard deviation. The results are presented in Table 4.32.

Table 4.32

Description of Academic Achievement by Gender

Variable	Gender	Range	*M*	*SD*	*Sk*	*Kur*
Academic Achievement	Boys(315)	45	51.90	9.55	-.57	-.20
	Girls(270)	51	47.78	10.07	-.43	.-43
	Total	51	50	10.00	-.47	-.34

Note. N=585 *M*=mean; *SD*=standard deviation.

The findings in Table 4.32 reveal that the mean for academic achievement for boys was (*M*=51.90, *SD*=9.55) and girls (*M*= 47.78, *SD*=10.07). Boys therefore had a higher mean in the academic achievement than the girls. Since both girls and boys academic achievement scores were negatively skewed which implies that the scores were high. The reason could be explained by the fact that most of the students were represented by national and extra-county schools whose performance at KCPE is higher than the sub-county schools. To test whether these mean differences were statistically significant, an independent samples t-test for students' academic achievement was tabulated. The results are presented in Table 4.33

Table 4.33

Independent Sample T –test for Gender Differences in Academic Achievement

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	*t*	*df*	Sig	*MD*
Acad. Ach	1.09	.295	-5.08	583	.000	-4.12

Note. *N*=585. Acad. Ach=academic achievement.

Levenes test indicated that the assumption of homogeneity of variance had not been violated (*F* (2,583) =1.09, p=.30). The results in Table 4.33 show that there were

significant gender differences in the students' academic achievement (F (2, 583) =5.08, p< 0. 05). Therefore, the study assumes there were key aspects in gender that were responsive to academic achievement. The third supplementary null hypothesis there were no significant differences between gender and academic achievement was thus rejected at p=.05. It was concluded that, there were gender differences in academic achievement of the students. The differences were in favour of the boys whose mean score in academic achievement was higher than that of girls.

4.6.2 Discussion on Findings of Gender Differences in Causal Attributions, Academic Expectations and Academic Achievement

The third objective of the study sought to find out whether there were gender differences in the students' causal attributions and academic expectations. The descriptive statistics indicated differences in the attributional style of boys and girls in their causal attributions. The current study revealed that generally, both boys and girls attributed success and failure mostly to internal than external causes, to uncontrollable than controllable factors and to unstable than stable factors. However, boys attributed success mostly to internal, uncontrollable and stable factors while the girls attributed success mainly to unstable causes. These findings were consistent with those of Abodunrin (1998) who found out that males perceived success to be a result of stable causes such as ability and failure to changeable causes such as effort while females attributed success to unstable factors such as effort. The current findings are also consistent with those by Onduso (2010), which showed that boys perceived success to be caused by internal causes more than girl.

On the other hand, the current study reported that the girls had more internal and uncontrollable explanations for failure while the boys explained failure in terms of unstable factors. These findings support those of Mok et, al. (2011) whose study among 325 secondary school students in China found that the females explained their academic failure in relation to their lack of ability and strategy use than the males. However, the findings of this study negate those of Onduso (2010) who reported that boys perceived failure to be caused by internal and external causes more than girls.

The study reported significant gender differences in the causal attributions for failure while the differences in causal attributions for success were not significant. These findings are inconsistent with those of Farid (2012) who conducted a study on causal attributions among Pakistan children with a sample of 396 (224 females, 172 males) students. The results revealed there were significant gender differences in causal attributional pattern. The results are also in disagreement with those of Mok et al. (2011) who reported significant gender differences in causal interpretations for school performance for students with similar cultural backgrounds.

Regarding gender and academic expectations the current results indicated that there were statistically significant gender differences in the academic expectations. The results also revealed a significant mean difference in negative academic expectations. However, the mean differences in the positive academic expectations were not significant. The descriptive statistics revealed that boys had higher positive academic expectations than girls. On the other hand, girls had higher negative academic expectations than boys. The present findings support those by Rosenbaum

et, al (1999) which reported gender variations in achievement related beliefs. Girls had more negative achievement related beliefs than boys. The girls' expectations for higher grades were also lower. Girls were more depressive in style than boys and perceived their failure to be caused by stable factors while success by external factors.

The findings of the study, however, negate the findings of Lei (2009) who reported that gender has little effect on being successful or not. They are also inconsistent with the findings of Deal (2003) who examined the gender differences in expectations of success in math among college students in USA using a sample of 222 students. The results indicated that the effect of the variable gender was insignificant when determining students' success expectations in Mathematics. No female Math's expectancy either matched or surpassed male expectancy for achievement of the highest level of mathematical success. The differences could be attributed to the fact that Deal (2003) used a specific domain (Mathematics) while the current study used various domains. There may also be a possibility of intervening cultural diversity.

In reference to gender and academic achievement, the findings were that boys had a higher mean score in academic achievement than girls. The study reported significant gender differences in the students' academic achievement. These findings were inconsistent with those by Ireri (2015) who found no significant sex difference in academic achievement in his study on academic identity status and achievement goal orientation as predictors of academic achievement among form three students in Embu County.

4.7 Interaction Effect of Causal Attributions and Academic Expectations on Academic Achievement

The fourth objective of the study sought to determine the interaction effect of causal attributions and academic expectations in determining academic achievement.

A correlation matrix of students' causal attributions, academic expectations and academic achievement was tabulated followed by inferential statistics used to test the hypothesis.

4.7.1 Hypothesis Testing

The fourth hypothesis stated as follows:

H_{04}: There was no significant interaction effect between the causal attributions, academic expectations and academic achievement.

This hypothesis comprised two predictor variables, which were causal attributions and academic expectations, and the criterion variable, which was academic achievement. To test this hypothesis, data was first subjected to a bivariate correlational analysis using Pearsons product moment correlation coefficient and the results were presented in Table 4.34.

Table 4.34

Correlation Matrix of Causal Attributions, Academic Expectations and Academic Achievement

Variables		1	2	3	4	5
1	CAS	1				
2	CAF	-.09*	1			
3	PAE	.18**	.19**	1		
4	NAE	.09*	-.16**	-.29**	1	*
5	Acad. Ach	.11**	-.11**	.28**	-.38**	1

Note. *N*=585*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The findings in Table 4.34 indicated that the causal attributions for success were positively significantly correlated to positive academic expectations (r (583) =.18, p<.05) and were positively significantly correlated to negative academic expectations (r (583) =.09, p<.01). This implies that when students endorsed appropriate causal attributions for success, they were likely to have positive academic related beliefs and if they were not appropriate, they were likely to habour negative related academic beliefs. Causal attributions for failure on the other hand, were positively significantly correlated to positive academic expectations (r (583) =.19, p<.01) and negatively significantly correlated to negative academic expectations (r (583) =-.16, p<.01). This means that the relationship depended on specific attribution attributed to failure. If the attributions were healthy for instance attributing failure to external, controllable and stable attributes it may lead to positive academic expectations and if biased attributions are used it is likely to lead to negative academic attributions.

All the dimensions of the predictor variables were significantly correlated to academic achievement. These relationships were differing in the magnitudes and the directions. Causal attributions for success had a significant positive correlation with academic achievement (r (583) = .11, p<.01) while causal attributions for failure had significant negative correlation with academic achievement (r (583) =-.11, p<.01). The results suggest that causal attributions for success led to high academic achievement and endorsement of causal attributions for failure led to low academic achievement. Positive academic expectations had a positive significant positive correlation (r (583) = .28, p<.01) while the negative academic expectations had a significant negative relationship (r (583) =-.38, p<.01) with academic achievement.

These results imply that positive academic expectations led to high academic achievement while negative academic expectations led to low academic achievement. The results indicate that there were interrelationships between the predictor variables of causal attributions and academic expectations. On the interaction effect of causal attribution processes to expectancy and then to academic achievement the results indicate that all the causal attributions were significantly correlated to academic achievement and conversely correlated to either positive or negative academic expectations except stable attribution to failure. According to Stipek (1998), causal attributions of previous performance can affect the subsequent expectations.

As expected and based on the literature review there was therefore interaction effect between the causal attributions, academic expectations and academic achievement. Based on the findings, the null hypothesis there is no interaction effect between causal attributions, academic expectations and academic achievement was rejected at p=0.05

Based on these findings, the researcher conducted a further analysis to establish whether there was interaction between the sub-dimensions of causal attributions, academic expectations on academic achievement. This was achieved by running a bivariate correlation analysis between the sub-dimensions of causal attributions for success, academic expectations and academic achievement using the Pearson product moment correlation coefficient. The results are presented in Table 4.35.

Table 4.35

Correlation Matrix of Causal Attributions for Success, Academic Expectations and Academic Achievement

		1	2	3	4	5	6	7	8	9
1	ILCAS	1								
2	ELCAS	-.12**	1							
3	CAS	.71**	-.04	1						
4	UNCAS	.35**	.79**	.59**	1					
5	SAS	.54**	.47**	.78**	.86**	1				
6	UNSAS	.59**	.43**	.10*	.40**	.19**	1			
7	PAE	.33**	-.15**	.29**	.07	.14**	-.12**	1		
8	NAE	-.19**	.30**	-.10*	.18**	.02	.06	-.31**	1	
9	Acad. Ach	.15**	-.11**	.32**	.11*	.19**	-.12**	.28**	-.38**	1

Note. *N*=585 ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed

The findings in Table 4.35 revealed that positive academic expectations were significantly correlated to all the sub-dimensions of causal attributions except uncontrollable attributions for success. The correlations were from weak to moderate. The strongest positive significant correlation was between internal locus of causality for success and positive academic expectations (r (583) = .33, p<.01). This meant that when students attributed success to internal factors they scored high in positive academic expectations. There was a negative significant correlation between positive academic expectations and unstable attributions for success (r (583) = -.12, p<.01 and external locus of causality for success (r (583) = -.15, p<.01). This implied that when students attributed academic success to either external or unstable factors they scored low in positive academic expectations.

Negative academic expectations were significantly correlated to all the sub-dimensions of causal attributions except stable attributions for success and unstable attributions for success. The correlations were from weak to moderate. The strongest positive significant correlation was between external locus of causality for success

and negative academic expectations (r (583) = .30, p<.01). This meant that when students attributed success to external factors they scored high in negative academic expectations. There was a negative significant correlation between negative academic expectations and internal locus of causality for success (r (583) = -.19, p<.01 and controllable attributions for success (r (583) = -.10, p<.01). This implied that when students attributed academic success to internal or controllable factors they scored low in negative academic expectations.

A bivariate correlation analysis between the sub-dimensions of causal attributions for failure, academic expectations and academic achievement using the Pearson product moment correlation coefficient was also performed. The results are presented in Table 4.36.

Table 4.36

Correlation Matrix of Causal Attributions for failure, Academic Expectations and, Academic Achievement

		1	2	3	4	5	6	7	8	9
1	ILCAF	1								
2	ELCAF	-.08	1							
3	CAF	.65**	-.20**	1						
4	UNCAF	.40**	.71**	.55**	1					
5	SAF	.49**	.45**	.73**	.91**	1				
6	UNSAF	.58**	.45**	-.13**	.29**	.06	1			
7	PAE	.11**	.17**	.08	-.09*	.02	.26**	1		
8	NAE	.06	-.37**	-.23**	-.14**	.00	-.28**	-.33**	1	
9	Acad. Ach	-.17**	.16**	-.33**	-.10*	-.20**	.15**	.28**	-.38**	1

Note. *N*-585

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

* Correlation is significant at the 0.05 level (2-tailed).

The results in Table 4.36 indicate that positive academic expectations were moderately significantly correlated to all the sub-dimensions of causal attributions for failure except controllable attributions for failure and stable attributions for

failure. The correlations for the sub-dimensions and positive academic expectations are as follows, unstable attributions for failure (r (583) = .26, p<.01), followed by external locus of causality attributions for failure (r (583) = .17, p<.01), internal locus of causality for failure (r (583) = .11, p<.01). This meant that when students attributed failure to these attributions they scored high in positive academic expectations. This may be attributed to the fact that these types of attributions were healthy since they gave hopes of success in the next task.

Similarly, negative academic expectations were moderately significantly correlated to all the sub-dimensions of causal attributions for failure except internal locus of causality attributions for failure and stable attributions for failure. Surprisingly, all the significant correlations were inversely correlated. The correlations with negative academic expectations were as follows, external locus of causality attributions for failure (r (583) = -.37, p<.01), controllable attributions for failure (r (583) = -.23, p<.01), uncontrollable attributions for failure (r (583) = -.14, p<.01) unstable attributions for failure (r (583) = -.28, p<.01). This implied that when students endorsed these attributions for failure they scored low in negative academic expectations.

Following the findings further statistical analysis was carried out. The data was subjected to multiple linear regression using enter method to find out the extent to which causal attributions and academic expectations predicted academic achievement. All the six sub-dimensions of causal attributions for success (internal locus of causality for success, external locus of causality for success, controllable attributions for success, uncontrollable attributions for success, stable attributions for

success and unstable attributions for success) and the 6 dimensions of causal attributions for failure (internal locus of causality for failure, external locus of causality for failure, controllable attributions for failure, uncontrollable attributions for failure, stable attributions for failure and unstable attributions for failure) were entered followed by entering the levels of academic expectations. The results are presented in Table 4.37.

Table 4.37

Model Summary of Causal Attributions, Academic Expectations and Academic Achievement

Model	*R*	R Square	Adjusted R^2	SE
1	.49[a]	.25	.24	8.74
2	.57[b]	.34	.32	8.23

Note. *N*=585, Dependant variable= academic achievement; [a]=causal attributions for success (causal attributions for failure; [b]=positive academic expectations, negative academic expectations.

As shown in the model in Table 4.37 the results show the differential contribution of causal attributions and academic expectations in explaining the variation in academic achievement. The highest contributors were causal attributions (R^2 = .24). This implied that students' causal attributions explained 24% of the variations in academic achievement. Academic expectations contributed attributions (R^2 = .08). This implied that students' academic expectations explained 8% of the variations in academic achievement. The two predictor variables combined explained 32% (R^2=.32) in the variation of academic achievement. The results imply that 68% of the variations in academic achievement was unaccounted for. However, it can be concluded that when causal attributions and academic expectations are combined when studying academic achievement they strengthen each other. These findings prompted the researcher to perform a further analysis to establish whether students' causal attributions

and academic expectations predicted academic achievement significantly or not. The findings are as presented in Table 4.38.

Table 4.38

Regression Analysis of Causal Attributions, Academic Expectations and Academic Achievement

Model		*SS*	*df*	*MS*	*F*	Sig.
1	Regression	14368.90	8	1796.11	23.50	.00[b]
	Residual	44031.07	576	76.44		
	Total	58400.00	584			
2	Regression	19483.81	10	1948.38	28.74	.00[c]
	Residual	38916.19	574	67.780		
	Total	58400.00	584			

Note. N=585.Dependent Variable: Academic achievement

[b]. Predictors: (Constant Causal Attributions

[c]. Predictors: (Constant), Causal Attributions and Academic Expectations

As observed in Table 4.38, students' causal attributions and academic expectations were significant predictors of academic achievement (F (10,574) = 28.74, $p < .05$). The researcher further sought to determine the predictive weight of the causal attributions combined with academic expectations on academic achievement. The results are presented in Table 4.39. The findings revealed that that controllable attributions for success were the best predictors of academic achievement ($\beta = .49$, $p < .05$) implying that a unit increase in controllable attributions for success would lead to 0.49 increase in academic achievement.

Table 4.39

Predictive Weight of Causal Attributions and Academic Expectations on Academic Achievement

Model	Unstandardized Coefficients		Standardized Coefficients	*T*	Sig.
	B	*SE*	*Beta*		
(Constant)	51.76	5.01		10.33	.00
ELCAS	.66	.16	.33	4.36	.00
ELCAF	-.15	.19	-.08	-.79	.43
CAS	1.32	.24	.49	5.60	.00
CAF	-.78	.26	-.33	-2.99	.00
SAS	.66	.22	.30	-3.06	.00
SAF	-.22	.26	-.11	.86	.39
UNSAS	-.62	.10	-.29	-6.40	.00
UNSAF	.24	.09	.13	2.80	.00
PAE	.40	.12	.13	3.29	.00
NAE	-.52	.07	-.28	-7.03	.00

Note. N = 585; ELCAS= External locus causality attribution for success; ELCAF= external locus of causality for failure; CAS= controllable attributions for success; CAF= controllable attributions for failure; SAS= stable attributions for success; SAF= Stable attributions for failure; UNSAS= unstable attributions for success; UNSAF= unstable attributions for failure; PAE= positive academic expectations; NAE= negative academic expectations; dependent Variable: academic achievement.

This meant that, controllable attributions for success contributed positively to academic achievement. External locus of causality for failure also had a positive significant predictive weight on academic achievement (β = .33, p < .05) implying that a unit increase in external locus of causality for success would lead to 0.33 increase in academic achievement. Controllable attributions for failure negatively predicted academic achievement (β = -.33, p < .05) meaning that a unit increase in controllable attributions for failure would lead to 0.33 decrease in academic achievement.

On the other hand, stable attributions for success positively predicted academic achievement (β = .30, p < .05) implying that a unit increase in these attributions would lead to 0.30 increase in academic achievement. Unstable attributions for success had a negative prediction ability on academic achievement (β = - .29, p < .05) implying that a

unit increase in the attribution would lead to 0.29 decrease in academic achievement. Unstable attributions for failure had a positive prediction ability on academic achievement (β = .13, p < .05) implying that a unit increase in these attributions would lead to 0.13 increase in academic achievement. In terms of academic expectations, positive academic expectations had a positive prediction ability (β = .13, p < .05) implying that a unit increase in positive academic expectations would lead to 0.13 increase in academic achievement. On the other hand, negative academic expectations negatively predicted academic achievement (β = -.28, p < .05), implying that a unit increase in negative academic expectations would lead to 0.28 decrease in academic achievement. Contrary, there was no significant prediction ability for attributions of external locus of causality attributions for failure (β = -.08, p > .05) and stable attributions for failure (β = -.11, p > .05).

Based on the results in Table 4.39 the regression equation is as follows:

$\tilde{y}$ =51.76 +.66(ELCAS)-.15(ECLAF) +1.32(CAS) + -.78(CAF) +.66(SAS)-.22(SAF) -.62(UNSAS) +.24(UNSAF) +.40(PAE)-.52(NAE), p<.05

Where: $\tilde{y}$=academic achievement; ELCAS=external locus causality attribution for success; ELCAF=external locus of causality for failure; CAS= controllable attributions for success; CAF= controllable attributions for failure; SAS= stable attributions for success; SAF= stable attributions for failure; UNSAS= unstable attributions for success; UNSAF= unstable attributions for failure; PAE= positive academic expectations; NAE= negative academic expectations. These study findings demonstrate that causal attributions and academic expectations were significant predictors of academic achievement.

4.7.2 Discussion of the Findings on Interaction Effect of Causal Attributions and Academic Expectations on Academic Achievement

The present study aimed at establishing the interaction effect between causal attributions, academic expectations and academic achievement. The findings revealed that causal attributions and academic expectations were correlated to each other and are significantly correlated to academic achievement. They also significantly predicted academic achievement. The current findings showed that causal attributions for success were significantly and positively correlated to positive academic expectations. On the other hand, positive academic expectations are positively and significantly correlated to academic achievement. The correlation matrix also indicates that attributing external causes to failure was positively correlated to negative academic expectations. Negative academic expectations were significantly negatively correlated to academic achievement.

The regression analysis showed that the two-predictor variables jointly contributed significantly to changes in students' academic achievement. The model for predicting academic achievement from causal attributions accounted for 24% of the variation in academic achievement while the model for predicting academic achievement from academic expectations accounted for 8%. The model involving both causal attributions and academic expectations for predicting academic achievement explained 32% of the variance in academic achievement. The results show that both the causal attributions and the academic achievement are stronger when studied jointly. It can be concluded, that some other factors explain the remaining variance in the students' academic achievement. Findings also indicate that students' causal attributions interact with academic expectations to influence

their academic achievement. Notably, the two had important differences in their contributions. This may be an indication that both can explain the individual differences in the students' academic achievement.

The findings on the interrelationships of causal attributions and academic expectations on academic achievement validate the theory of Weiner (1985) that hypothesizes that the causal explanation of the individual's achievement outcomes will determine the subsequent achievement and exerted effort. He argued that individual's causal attributions of achievement behaviours affect subsequent achievement behaviours and motivation; future achievement expectancies; persistence at similar tasks; pride or shame felt following success or failure.

The findings on possible interaction between casual attributions and academic expectations on academic achievement further supports the study by Batool & Akhter (2012) that found out that students who attributed their failure to external and uncontrollable factors usually consider themselves more helpless in the face of any academic related task. The students were more likely to believe that future success was highly probable when they attributed their successes to high ability than if they attribute their success to other factors. In contrast, the attribution of an outcome to low ability makes future failure seem highly probable. There is more devastation when one thinks that failure is by virtue of low ability, than when believes that failure is due to bad luck, task difficulty, or lack of effort.

The study findings corroborate those of Mok et, al (2011) who found that students who typically perform better compared to their peers have a tendency of attributing their superior performances to high ability; consequently, they anticipate future

success. When on occasion they encounter episodes of failure, they attribute their difficulties to bad luck or lack of effort. Expectancy, does therefore, have effects on causal attributions and so do causal attributions have effects on academic expectancy and both thus having an interaction effect on academic striving.

The present findings also support those by Lei (2009) in a study on causal attributions of academic achievement in college students in China. He used a sample of 1400 students. The results revealed that there exists an internal relationship between the stable causal attributions and expectations for success. The current findings are also consistent with those of Raymond (1999) who argues the individuals' attribution to events can determine how they behave in future occasions and hence affect academic achievement. Perceiving success to be a product of factors that are controllable such as motivation, efforts, and diligence develops high expectations.

The findings on the interaction effect between causal attributions and academic expectations echo those by Weiner (1985) who stated that students who attributed failure to internal, uncontrollable and stable factors may be a hindrance to future achievement behaviour. When the students attribute failure to something uncontrollable they develop lowered expectation for success in the future and could feel hopeless and frustrated. Similarly, if good grades are attributed to uncontrollable, external factors i.e. an easy test, then successful people doubt whether this high level of achievement can be maintained. When failing people belief they can control the cause of the poor performance, they then expect to overcome these constraints in the future.

The students who employ a favourable attributional pattern increase their expectations for success in future, which lead them to exert more effort. Contrary, students who employ unfavorable pattern of attribution, end up developing persistent expectancies that success is not possible, and they lose motivation of exerting effort. Students must therefore, be encouraged to make appropriate attributional patterns and unbiased academic related beliefs.

4.8 Exploratory Analysis

Based on the descriptive statistics of causal attributions and academic expectations across the school categories, types of schools and age range, the researcher sought to explore whether there were statistically significant mean differences. Although this was not part of the objectives of the study, it would provide further insights into the findings of this study.

4.8.1 School Category, Causal Attributions and Academic Expectations

To examine whether there significant mean differences in the causal attribution dimensions and academic expectations across school categories the data was analyzed using analysis of variance (*ANOVA*). The results are summarized in Table 4.40.

Table 4.40

ANOVA for Mean Differences in Causal Attributions across School Categories

Causal Attribution		*SS*	*df*	*MS*	*F*	*Sig.*
CAS	Between Groups	1651.95	2	825.98	1.74	.18
	Within Groups	275993.61	582	474.22		
	Total	277645.56	584			
CAF	Between Groups	23902.78	2	11951.39	26.24	.00
	Within Groups	265052.67	582	455.42		
	Total	288955.45	584			

Note. *N*=585. CAS=causal attributions for success; CAF= causal attributions for failure;

The findings as presented in Table 4.41 indicated that there were no significant mean differences in causal attributions for success scores across the school categories (F (2,582) =1.74, p=.18). This could be attributed to the fact that majority of the students attributed their success more to effort regardless of the school category. However, significant mean differences were found in causal attribution for failure (F (2,582) =26.24, p<.05). This implies that the category of schools is among the factors that affect students' causal attributions for failure and the consequently, academic achievement. There could be important aspects in the different school categories that may affect the causal attributions of the students. Further statistical analysis was found appropriate for causal attributions for failure to determine the nature of the differences in the variable given the categories of schools. A post hoc analysis (Tukey's HSD) was carried out. The results are summarized in Table 4.41.

Table 4.41

School Category and Differences in Mean of Causal Attributions for Failure Scores

Causal Attributions	(I) School Cat	(J) School Cat	M D (I-J)	SE	Sig.
CAF	NS	SS	-16.02*	2.21	.00
		ECS	-9.45*	2.20	.00
	SS	NS	16.02*	2.21	.00
		ECS	6.57*	2.10	.00
	ECS	NS	9.45*	2.20	.00
		SS	-6.57*	2.10	.00

Note. *N*=585. CAF=causal attributions for failure; NS= national schools; ECS=extra-county schools; SS=sub-county schools

* The mean difference is significant at the 0.05 level.

Table 4.41 results indicated that the mean differences in causal attributions for failure among students from the different school categories were found to be significant. The mean difference was in favour of national schools, which were

found to have the lowest mean in causal attribution scores for failure. The sub-county schools had the highest mean in causal attributions for failure, which could be contributing to the low academic achievement in comparison to the other categories since there was a negative significant relationship between causal attributions for failure and academic achievement.

Analysis of variance was carried out to further determine the mean differences in academic expectations across the categories of schools. The data was examined using one-way analysis of variance (*ANOVA*). The results are presented in Table 4.42.

Table 4.42

ANOVA for Mean Differences in Academic Expectations across School Categories

AE		*SS*	*df*	*MS*	*F*	Sig.
PAE	Between Groups	183.18	2	91.59	9.38	.00
	Within Groups	5685.68	582	9.77		
	Total	5868.86	584			
NAE	Between Groups	437.85	2	218.93	7.72	.00
	Within Groups	16498.70	582	28.35		
	Total	16936.56	584			

Note. *N*=585. AE=academic expectations; PAE=positive academic expectations; NAE=negative academic expectations.

Table 4.42 show that there were significant mean differences for positive academic expectations (F (2,582) =9.38, p<.05). The mean differences were also significant for negative academic expectations (F (2,582) =7.77, p< .05). This implied that school categories were among the factors that affect positive and negative academic expectations and the subsequent academic achievement. There could therefore be essential attributes in the different school categories that may influence students' academic expectations and subsequently their academic achievement.

Following these findings, a post hoc analysis (Tukey's HSD) was used to determine the nature of the differences in academic expectations. The results are presented in Table 4.43.

Table 4.43

School Category and Differences in Means of Academic Expectations Scores

						95% CI	
Dependent Variable	(I) School Cat	(J) school cat	M D (I-J)	SE	Sig.	LL	UL
PAE	NS	SS	1.16*	.32	.00	.40	1.91
		ECS	-.03	.32	.99	-.78	.73
	SS	NS	-1.16*	.32	.00	-1.92	-.40
		ECS	-1.18*	.31	.00	-1.91	-.46
	ECS	NS	.03	.32	.99	-.73	.78
		SS	1.18*	.31	.00	.46	1.90
NAE	NS	SS	-2.17*	.55	.00	-3.47	-.87
		ECS	-1.21	.55	.07	-2.50	.08
	SS	NS	2.17*	.55	.00	.87	3.46
		ECS	.96	.52	.15	-.27	2.19
	ECS	NS	1.21	.55	.07	-.08	2.50
		SS	-.96	.52	.15	-2.19	.27

Note. N=585. PAE=positive academic expectations; NAE=negative academic expectations; NS= national schools; ECS=extra-county schools; SS= =sub-county schools.
* The mean difference is significant at the 0.05 level

The results in Table 4.43 indicate that there were significant mean differences in the positive academic expectations scores between national and sub-county schools and between extra-county and sub-county schools while the mean differences for positive academic expectations were insignificant for national and extra-county schools. With regard to negative academic expectations, the mean differences were significant between national and sub-county schools. The mean differences were not significant between national and extra-county schools. Likewise, the mean differences were not significant between extra-county schools and sub-county schools.

As shown in Table 4.43 the mean differences in the positive academic expectations were in favour of students from national schools. Students in county schools had the least mean score in positive academic expectations and the highest in negative academic expectations. This may explain the low scores in academic achievement in sub-county schools since there was a significant negative relationship between negative academic expectations and academic achievement

4.8.2 Types of Schools, Causal Attributions and Academic Expectations

The researcher examined whether there were significant mean differences in the causal attributions and academic expectations across types of schools. The data was analyzed using analysis of variance (*ANOVA*). The results are presented in Table 4.44.

Table 4.44

ANOVA for Mean Differences in Causal Attributions across Types of Schools

Causal Attributions		*SS*	*df*	*MS*	*F*	Sig.
CAS	Between Groups	675.67	2	337.84	.71	.49
	Within Groups	276969.89	582	475.89		
	Total	277645.56	584			
CAF	Between Groups	12619.58	2	6309.79	13.29	.00
	Within Groups	276335.87	582	474.80		
	Total	288955.45	584			

Note. N=585. CAS=causal attributions for success; CAF=causal attributions for failure; SS= sum of squares; MS= mean square.

The results in Table 4.44 show there were statistically significant mean differences between types of schools in the causal attributions for failure scores (F (2, 582) =13.29, p<.05) while there were no statistically significant mean differences between the types of schools and causal attributions for success. These results suggest that causal attributions for failure were responsive to types of schools. These findings suggest that there could be key factors in the types of schools that may

influence students' causal attributions for failure and probably academic achievement.

Following these findings further investigation were necessary. A post hoc analysis using Tukey (*HSD*) method was used to establish where the differences occurred between the groups. Table 4.45 presents the findings.

Table 4.45

Type of School and Differences in Means of Causal Attributions for Failure Scores

Causal Attributions	(I) Sch Type	(J) Sch Type	*M D* (I-J)	*SE*	Sig.
CAF	BS	GS	-7.57*	2.12	.00
		CS	-10.99*	2.24	.00
	GS	BS	7.57*	2.12	.00
		CS	-3.42	2.32	.30
	CS	BS	10.99*	2.24	.00
		GS	3.42	2.32	.30

Note. *N*=585. CAF=causal attributions for failure; Sch= school; BS=boys school; GS= girls; Cs=coeducational school; *. The mean difference is significant at the 0.05 level

The results in Table 4.45 indicated that there were statistically significant mean differences in causal attributions for failure mean scores between boys and girls schools and between boys and coeducational schools. However, there were no significant mean differences in causal attribution for failure scores between girls schools and coeducational schools.

Analysis of variance was carried out to further determine the mean differences in academic expectations across types of schools. The data was examined using one-way analysis of variance (*ANOVA*). The results are shown in Table 4.46

Table 4.46
ANOVA for Mean Differences in Academic Expectations across Types of Schools

AE		Sum of Squares	Df	Mean Square	F	Sig.
PAE	Between Groups	149.03	2	74.51	7.58	.00
	Within Groups	5719.83	582	9.83		
	Total	5868.86	584			
NAE	Between Groups	377.70	2	188.85	6.64	.00
	Within Groups	16558.86	582	28.45		
	Total	16936.56	584			

Note. *N*=585. AE=academic expectations; PAE= positive academic expectations; NAE= negative academic expectations.

The results in Table 4.46 revealed that there were statistically significant mean differences in positive academic expectations given the type of school (F (2,582) =7.58, p<0.05). Similarly, there were statistically significant mean differences in negative academic expectations (F (2,582) = 6.64, p<.05). This suggests that academic expectations are responsive to types of schools. This implies that there could be important factors in the types of schools that may influence students' academic achievement. Following these findings, a post hoc analysis was run to confirm where the differences occurred between the groups. The results are presented in Table 4.47.

Table 4.47
Type of School and Differences in Means of Academic Expectations Scores

AE	(I) Sch Type	(J) School Type	M D (I-J)	*SE*	Sig.
PAE	BS	GS	-.21	.31	.76
		CS	1.02*	.32	.00
	GS	BS	.21	.31	.76
		CS	1.23*	.33	.00
	CS	BS	-1.02*	.32	.00
		GS	-1.23*	.33	.00
NAE	BS	GS	-1.22	.52	.05
		CS	-1.94*	.55	.00
	GS	BS	1.22	.52	.05
		CS	-.72	.57	.41
	CS	BS	1.94*	.55	.00
		GS	.72	.57	.41

Note. *N*=585. AE= academic expectations; PAE= positive academic expectations; NAE=negative academic expectations; BS=boys school; GS=girls school; CS =coeducational school; * mean difference is significant at the 0.05 level.

The results in Table 4.47 indicated that there were significant mean differences in the positive academic expectations scores between boys and co-educational schools and between girls and co-educational schools. The mean differences for positive academic expectations were however, insignificant for girls and boys schools. Findings on negative academic expectations show significant mean differences between girls and boys schools and between coeducational and boys schools. There were no significant mean differences between coeducational and girls schools.

The difference in positive academic expectations was in favour of students from girls schools. Coeducational schools were found to have the least mean score in positive academic expectations scores and the highest in negative academic expectations. This may explain the low scores in academic achievement in coeducational schools since there was a significant negative relationship between negative academic expectations and academic achievement.

4.8.3 Age, Causal Attributions and Academic Expectations

The researcher also explored whether there were significant mean differences in students causal attributions and academic expectations across the age categories. The findings are shown in Table 4.48. The findings presented in Table 4.48 revealed that there were no significant mean differences in the causal attribution for success given age (F (2,582) = 2.28, p>.05). Similarly no significant mean differences existed in causal attributions for failure given age (F (2, 582) = 1.48, p> .05).

Table 4.48

ANOVA for Mean Differences between Causal Attributions by Age Category

Causal Attributions		*SS*	*Df*	*MS*	*F*	Sig.
	Between Groups	2154.89	2	1077.44	2.28	.10
CAS	Within Groups	275490.68	582	473.35		
	Total	277645.56	584			
	Between Groups	1459.60	2	729.80	1.48	.23
CAF	Within Groups	287495.85	582	493.98		
	Total	288955.45	584			

Note. *N*= 585. CAS= causal attributions for success; CAF= causal attributions for failure

This suggests that when age category is included among the factors that predict students' causal attributions and the consequent academic achievement, it has no influence on prediction ability. This may be attributed to the fact that the participants were close in ages. Probably there would be differences if the ages were more distinct.

Analysis of variance was carried out to further determine the mean differences in academic expectations across age categories of the respondents. The summary of the results is presented in Table 4.49.

Table 4.49

ANOVA for Mean Differences in Academic Expectations by Age Category

AE		*SS*	*df*	Mean Square	*F*	Sig.
	Between Groups	113.56	2	56.78	5.74	.00
PAE	Within Groups	5755.30	582	9.89		
	Total	5868.86	584			
	Between Groups	64.67	2	32.33	1.11	.32
NAE	Within Groups	16871.89	582	28.99		
	Total	16936.56	584			

Note. *N*= 585. AE= academic expectations; PAE=positive academic expectations; NAE= negative academic expectations

Findings in Table 4.49 indicated that there were statistically significant mean differences in positive academic expectations between the age categories (F (2,582) =5.74, p<.05), but the means for negative academic expectations did not significantly differ (F (2, 582) =1.11, p>.05). This suggests that positive academic expectations are responsive to age. It also implies that there could be important aspects in the age ranges that may influence students' positive academic expectations. A post hoc analysis (Tukey's *HSD*) was run to confirm which specific groups differed. The results are presented in Table 4.50.

Table 4.50

Age Category and Differences in Means of Positive Academic Expectations Scores

AE	(I) Age category	(J) Age category	M D (I-J)	SE	Sig.
PAE	13-15	16-18	-1.69*	.50	.00
		19-21	-1.69*	.57	.00
	16-18	13-15	1.69*	.50	.00
		19-21	-.00	.34	1.00
	19-21	13-15	1.69	.57	.00
		16-18	.00	.34	1.00

Note. N=585. AE=academic expectations; PAE=positive academic expectations
*The mean difference is significant at the 0.05 level.

The findings in Table 4.50 indicated that the ages 13-15 had significant mean differences from ages 16-18 and 19-21 but there were no significant mean differences between ages 16-18 and 19-21. Analysis on descriptive statistics on academic expectations and age reveal that students in ages 14-15 scored low in positive academic expectations (M=22.65, SD= 4.38) than students in ages 16-18 (M= 24.34, SD=2.89) and ages 19-21 (M= 24.34, SD= 3.56).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is divided into four sections. Section one gives a summary of the study's findings. The second section presents the implications of the findings followed by the conclusions based on the findings. The last section outlines the study's recommendations relating to policy and areas of further research.

5.2 Summary of the Study

The study was conducted to investigate causal attributions and academic expectations as correlates of academic achievement among form three students in Kiambu County. The study investigated whether there was a significant relationship between causal attributions and academic achievement. The study also investigated whether there was a significant relationship between academic expectations and academic achievement. It further sought to establish gender differences in the students' causal attributions and academic expectations. Lastly, the study evaluated the interaction effect between the students' causal attributions, academic expectations and academic achievement.

The first objective sought to establish if there was a significant relationship between causal attributions and academic achievement. Causal attribution had four factors namely ability, effort, luck and task difficulty. The four factors were conceptualized into the dimensions of locus of causality (external or internal), controllability (controllable or uncontrollable) and stability (stable or unstable) with an indication of their contribution in either success or failure. The correlation analysis results

revealed that all the twelve dimensions of causal attributions had moderate positive or negative relationships with academic achievement. All the relationships were statistically significant. The causal attributions for success and failure varied according to the category of school, type of school and age. The exploratory analysis reported no significant mean differences in causal attributions for success among the school categories and types of schools. There were, however, significant mean differences in the students' causal attributions for failure among the school categories and the school types. There were no significant mean differences in causal attributions for success or failure among the different age categories.

The second objective of the study sought to determine the relationship between academic expectations and academic achievement. The academic expectations were categorized as either positive or negative. The correlation results generally validated the hypothesized relationship. The positive academic expectations had significant positive relationship with academic achievement while negative academic expectations had a significant negative relationship with academic achievement. The positive academic expectations significantly varied according to the category of school and type of school. The negative academic expectations also significantly varied given the categories and type of schools. There were significant differences in the positive academic expectations among the different categories of age. Nevertheless, there were no significant differences in the negative academic expectations among the different categories of age.

The third objective of the study tested the gender differences in students' causal attributions and their academic expectations. The descriptive analysis revealed that

both boys and girls attributed success and failure mostly to internal than external causes, uncontrollable than controllable factor, and to unstable, than stable factors. The study reported significant gender differences in the causal attributions for failure. No statistically significant gender mean differences were found in causal attributions for success. The descriptive analysis on the gender differences and academic expectations reveal that boys had higher positive academic expectations while girls had higher negative academic expectations. There were significant gender differences in negative academic expectations scores. There were however, no significant gender differences in positive academic expectations scores.

The last objective of the study determined whether there was an interaction effect between the students' causal attributions and academic expectations in determinig academic achievement. The correlation analysis revealed that the causal attributions and academic expectations were correlated to each other and were significantly correlated to academic achievement. Regression analysis further revealed that causal attributions and academic expectations had significant predictive value in determining students' academic achievement. Causal attribution was a better predictor than academic expectations. When studied jointly the two predictor variables accounted for more variance in the students' academic achievement and should therefore be seen as complementing each other.

5.3 Conclusions

The results illustrated that causal attributions and academic expectations significantly correlated with academic achievement. Positive and negative significant relationships were found between the dimensions of causal attributions

and academic achievement. Attributing success to controllable factors had the highest and positive correlation value while the highest negative correlation was in attributing failure to controllable causes. These findings will be important in understating how the dimensions of causal attribution correlate with academic achievement. The students employing inappropriate patterns of attributions develop persistent beliefs that success is not possible, and they loose motivation of putting more effort. Those employing favourable attributional patterns increase their expectations for success in the future leading them to put more effort. Therefore, there is need to retrain students to make appropriate attributions. This may help them to fully reach their potentials in academic achievement.

The study found that both positive and negative academic expectations were correlated to academic achievement. Positive academic expectations were positively correlated to academic achievement. Negative academic expectations were negatively correlated to academic achievement. The findings indicate that the students' academic expectations can affect their motivation and engagement in their academic activities therefore influencing their academic achievement. They can either enhance or hinder high academic achievement. Students hold academic related expectations regardless of whether these expectations are good, bad, correct, or misguided. It is important to ensure that the expectations formed have a positive and motivating influence on student learning, rather than be a hindrance to success. This information will enhance the learners and teachers ability to establish a clear and logical link between the academic expectations and academic achievement.

On the gender differences and causal attributions, the study revealed there were no significant gender differences in mean causal attributions score for success. The study nevertheless revealed that gender might account for the differences in the students' causal attributions for failure. The findings indicate that girls more consistently attributed failure to internal and uncontrollable factors, which could elicit feelings of hopelessness and frustration. This suggests that the girls employed a more biased patterns of attributional style. On gender difference and academic expectations, girls were more pessimistic in their academic expectations since they recorded higher negative expectations than boys. Boys recorded higher positive expectations than girls. No significant gender differences were found in the positive academic expectations scores. However, significant mean gender differences were found in negative academic expectations. There is need for interventions that target girls to train them to make desirable attributional styles and help boost their positive academic related beliefs.

The study findings established an interaction effect between causal attributions and academic expectations in their influence on academic achievement. The correlations between the sub-dimensions of causal attributions took different magnitudes and directions. However, most of these correlations were significant. When the causal attributions and academic expectations were jointly studied their contribution to the variance in academic achievement increased. The results seem to support the documented evidence that causal attributions affect learners' responses, expectancy to future success and subsequent behaviour thus influencing the learner's academic achievement. Nevertheless, there could be other factors that could be influencing academic achievement. More research is necessary in the area of study.

5.4 Recommendations

Based on the study findings, the following recommendations for policy and further research were made:

5.4.1 Policy Recommendations

i. This study found there was a relationship between causal attributions and academic achievement. Most students in the present study attributed failure to internal and uncontrollable causes. These attributions were undesirable attribution patterns, which may negatively influence their academic achievement. This makes them detrimental to academic striving. It is therefore, of great importance that parents, schools and educators should assist the students in understanding their achievement related behaviour in terms of the attribution styles they make. The education stakeholders should formulate guidelines, appropriate intervention and modification measures that would help in improving their academic achievement. The students should be retrained to shift their attributional styles from inappropriate to more favourable.

ii. The findings revealed that there was a relationship between academic expectations and academic achievement. These findings may assist the teachers and parents to identify and monitor potentially inaccurate and harmful negative academic related beliefs among the students and provide an opportunity for shaping the students' beliefs to positive beliefs to enhance achievement striving. The school administration should come up with strategic intervention programmes that will help identify biases present

in the students' formations of academic expectations so that they may not become barriers to attainment of high academic achievement.

iii. The results indicated there were significant gender differences in causal attributions for failure and in negative academic expectations. The girls were found to have formed biased causal attributions and pessimistic academic expectations that were detrimental to academic striving. The educators should come up with educational measures that target girls with the aim of retraining them in their attributional style and boosting their positive academic related beliefs. The boys should also be encouraged and supported to form causal attributions and academic expectations that will encourage success in academic achievement.

iv. The study also established there was an interaction effect between causal attributions and academic expectations in determining academic achievement. Those employing appropriate attributional pattern increase their expectations for success in the future leading them to put more effort. On the other hand, the students employing unfavourable patterns of attribution develop persistent beliefs that success is not possible, and they lose motivation of putting more effort. The educators should use this knowledge to devise techniques inclined towards meeting full potentiality of the learner.

5.4.2 Recommendations for Further Research

i. This study comprised form three students from Kiambu county and therefore, the generalization of the findings beyond this population may be limited. The

study can be replicated in other counties due to the effect of cultural or geographical factors that may affect the results.

ii. The researcher recommends for a more elaborate study on the variables especially on the causes of the significant mean differences in causal attributions and academic expectations across category of school, type of school and age categories.

iii. The study corroborated many other findings on the interaction effect between academic expectations and academic achievement. Further studies can be carried out in the other forms, or post secondary schools to help extend the knowledge.

iv. Data analysis was based mainly on correlational procedures and therefore the results did not indicate the causes of the established relationships among the variables. The findings also gave limited knowledge about how each factor influences and/or is influenced by other factors. The researcher recommends for use of other research designs.

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APPENDIX A

LETTER OF INTRODUCTION

Susan Njeri Ngunu
Department of Educational Psychology,
School of Education,
Kenyatta University,
P.O.Box 43844-00100,
Nairobi.

Dear Respondent,

RE: DATA COLLECTION

Iam a student at Kenyatta University pursuing a degree in Doctor of Philosophy (PhD) in Educational Psychology. As part of the requirement for the award of the degree, am carrying out a research on "Causal Attributions and Academic Expectations as Correlates of Academic Achievement in Public Secondary Schools, Kiambu County, Kenya".

Your school has been selected to participate in the study. Iam kindly asking for your assistance to be able to collect the data from the institution. The information received from the school will be treated with utmost confidentiality and will only be used for the intended academic purposes. Your cooperation will be highly appreciated.

Thanks in advance

Yours faithfully

Susan Njeri Ngunu

APPENDIX B

CONSENT FORM

Dear Respondent,

I am Susan Njeri Ngunu, a student of Kenyatta University currently pursuing a Doctor of Philosophy (PhD) in Educational Psychology. As part of requirement for the award of the degree, I am conducting a research on "Causal Attributions and Academic Expectations as Correlates of Academic Achievement in Public Secondary Schools, Kiambu County, Kenya".

You have been selected to participate in the study as a respondent and I have attached a questionnaire for you to answer. As a participant you have the freedom to participate/ or withdraw at whatever stage of the study if you feel that this research will cause any form of physical, emotional or psychological harm. The information given will be treated with outmost privacy and confidentiality.

Please answer all the questions as honestly as possible to facilitate the successful completion of the study. The information received shall only be used for the intended academic purpose. Your cooperation will be highly appreciated.

Thanks in advance

Signature.....

Name.....

APPENDIX C

STUDENTS QUESTIONNAIRE

Section I: Instructions

The purpose of the questionnaire is to collect information about the causes of success or failure in academic performance and the academic expectations so that possible solutions may be identified. Please help fill this questionnaire, which is about the causes of success or failure in academic performance and your expectations for future performance. The answers are divided into 5 rankings, ranging from "Strongly Agree (SA), Agree (A), Uncertain (U), Disagree (D) to "Strongly disagree (SD)". Please answer each question honestly and frankly with the mark "√" according to your own experience. There are no "correct" answers. All the data collected will be highly confidential and will be used for the research only. Do not write your name on this paper.

Section II: Background Information

Code Number _____

School Category (tick) a) National school b) Boys School

Extra County School Girls School

County School Mixed School

Sex (Please tick√) Female: ..... Male: .....

Age (Please tick√) 13-15 ____ 16-18____ 19-21____

Section III Multidimensional Multi- Attributional Causality Scale

	Ability Attributions for Success	**SD**	**D**	**U**	**A**	**SA**
1	My academic ability is the most important reason in getting good grades	1	2	3	4	5
2	I believe that my academic ability is directly reflected by my grades	1	2	3	4	5
3	My academic competence is the reason I get good grades	1	2	3	4	5
4	My high ability is the reason I do well	1	2	3	4	5
5	I feel that my ability is the reason I succeed	1	2	3	4	5
6	The reason I do well is because of my ability	1	2	3	4	5
	Ability attributions for Failure	**SD**	**D**	**U**	**A**	**SA**
7	I question my academic ability when I attain low marks	1	2	3	4	5
8	I attribute lack of skill in an area I don't do well	1	2	3	4	5
9	My assumption is that I lack ability when I receive poor grades	1	2	3	4	5
10	Low ability is the cause of my poor performance	1	2	3	4	5
11	My low ability is the cause of my poor results	1	2	3	4	5
12	The reason I have not done well at times in the past is due to my low ability	1	2	3	4	5

	Effort Attribution for Success	**SD**	**D**	**U**	**A**	**SA**
13	My efforts directly results to the good grades I get	1	2	3	4	5
14	The reason I attain good grades, is because I have studied hard	1	2	3	4	5
15	My hard work can help me overcome all barriers in the path of academic achievement	1	2	3	4	5
16	Working hard results to my doing well	1	2	3	4	5
17	I owe my successes to hard work	1	2	3	4	5
18	My hard work can explain my doing well	1	2	3	4	5
	Effort Attributions for Failure	**SD**	**D**	**U**	**A**	**SA**
19	Attainment of poor grade, makes me feel that it is because mainly I haven't studied enough	1	2	3	4	5
20	When I perform at a lower level than expected, it is mainly due to lack of effort from my side	1	2	3	4	5
21	Poor grades tell me that I haven't tried hard enough	1	2	3	4	5
22	Poor performance is attributed to lack of hard work	1	2	3	4	5
23	Receiving poor results is an indication that I haven't studied enough	1	2	3	4	5
24	The reason I have not done well in the past is because of lack of effort	1	2	3	4	5

	External Attributions for Success	SD	D	U	A	SA
25	Occasionally my success in examinations is dependent on luck	1	2	3	4	5
26	I have a feeling that sometimes my good grades are dependant considerably on luck e.g. having the right questions turn up in an test	1	2	3	4	5
27	I have this feeling that at times am just lucky for the good grades I receive	1	2	3	4	5
28	Sometimes I get a good grade because the teacher's grading scheme is easy	1	2	3	4	5
29	The reason I at times get good grades in some courses is simply that they were easier courses	1	2	3	4	5
30	My attainment of good grades is mainly because the course content was easy to learn	1	2	3	4	5
	External Attributions for Failure	**SD**	**D**	**U**	**A**	**SA**
31	Bad luck seems to be the reason for some of my lower grades	1	2	3	4	5
32	Sometimes my academic low points make me think I was just lucky	1	2	3	4	5
33	I feel bad luck contributes to my bad grades sometimes	1	2	3	4	5

34	My experience is that when a teacher thinks you are a low achiever, one is much more likely to receive poor grades than if handled by someone else	1	2	3	4	5
35	Often my getting grades that are poor in some courses is because the teacher has not made them interesting	1	2	3	4	5
36	Sometimes I received low grades because some teachers are just mean with marks	1	2	3	4	5

Section IV: Academic Expectancy Scale

	Expectations for Future Success	**SD**	**D**	**U**	**A**	**SA**
37	I am capable of getting smarter if I work harder	1	2	3	4	5
38	Any student who is smart will always be successful	1	2	3	4	5
39	Every student can do better if they worked hard	1	2	3	4	5
40	When the performance is poor I look forward to a better performance in the next assignment	1	2	3	4	5
41	Have a high expectation after failure	1	2	3	4	5
42	I'm willing to work hard to make progress	1	2	3	4	5
	Expectations for Future Failure	**SD**	**D**	**U**	**A**	**SA**

43	When I attain a good score I'm not sure how I'm going to get that score again	1	2	3	4	5
44	I am always negative about my future performance no matter how well my previous performance	1	2	3	4	5
45	I don't know how to prevent future failure	1	2	3	4	5
46	Incase I get poor grades I'm not sure how I can minimize the chances of that happening again	1	2	3	4	5
47	Have given up in some subjects	1	2	3	4	5
48	Have little chance of doing well	1	2	3	4	5

THANK YOU FOR PARTICIPATING IN THE STUDY.

APPENDIX D

Pro Forma Summary of Student's Examination Results

Participant's Code Number……..

Student's Academic Achievement Form 3 Examinations

Examination	**Subjects**							**Mean Score**
	1	**2**	**3**	**4**	**5**	**6**	**7**	
Mid- Term One 2017								
End of Term One 2017								

APPENDIX E

KCSE ANALYSIS 2014-2018

Table E. 1

K.C.S.E Performance by Grade

Year	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
2014	3042	11584	28931	37964	19450	58399	70405	47113	73198	47436	75887	5562
2015	2685	21927	21927	44581	44581	54770	64913	74115	79157	79555	48658	5350
2016	141	4645	10975	23745	23745	32207	44792	61026	80951	112135	149929	33399
2017	142	2714	7344	12628	19385	27860	40474	61040	68447	135550	179381	35536
2018	315	3417	8268	16403	26156	35818	49707	71047	96512	147918	165139	30840
Total	**5868**	**44486**	**61833**	**106290**	**87776**	**145376**	**180110**	**182254**	**233306**	**239126**	**274474**	**14311**

Table E. 2

K.C.S.E Grade Analyses 2014-2018

Year	C+ and above		C to D+		D to E	
	No.	%	No.	%	No.	%
2018	90377	13.77	217266	32.90	437274	66.23
2017	70073	11.4	169961	27.6	350467	56.9
2016	88929	15.57	186769	32.7	295463	51.73
2015	166009	31.8	215350	41.86	131826	25.62
2014	148084	30.9	204691	39.83	126196	26.92
Total	**403022**	**25.7**	**606810**	**38.6**	**553485**	**35.226**

APPENDIX F

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MS. SUSAN NJERI NGUNU
of KENYATTA UNIVERSITY, 0-1000
THIKA,has been permitted to conduct
research in *Kiambu County*

on the topic: *CAUSAL ATTRIBUTIONS AND ACADEMIC EXPECTATIONS OF TEACHERS AND STUDENTS AS CORRELATES OF ACADEMIC ACHIEVEMENT IN SECONDARY SCHOOLS IN KIAMBU COUNTY, KENYA*

for the period ending:
6th December,2017

.....
Applicant's Signature

Permit No : NACOSTI/P/16/57394/14702
Date Of Issue : 6th December,2016
Fee Recieved :ksh 2000

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

CONDITIONS

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

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 12166

CONDITIONS: see back page

APPENDIX G

RESEARCH AUTHORIZATION

NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/16/57394/14702**

Date: **6th December, 2016**

Susan Njeri Ngunu
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Causal attributions and academic expectations of teachers and students as correlates of academic achievement in secondary schools in Kiambu County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for the period ending **6th December, 2017.**

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

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
COUNTY COMMISSIONER, KIAMBU

Telephone: 066-2022709
Fax: 066-2022644
E-mail: countycommkiambu@yahoo.com
When replying please quote

County Commissioner
Kiambu County
P.O. Box 32-00900
KIAMBU

Ref.No: **ED.12/1/VOL.V/185**

3rd October, 2017

Susan Njeri Ngunu
Kenyatta University
P. O. Box 43844-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

Reference is made to National Commission for Science, Technology and Innovation letter Ref No. **NACOSTI/P/16/57394/14702** dated **6th December, 2016.**

You have been authorized to conduct research on ***"Causal attributions and academic expectations of teachers and students as correlates of academic achievement in secondary schools in Kiambu County, Kenya".*** The data collection will be carried out in ***Kiambu County*** *for a period ending* ***6th December, 2017.***

You are requested to share your findings with the County Education Office upon completion of your research.

J. A. RATEMO
FOR: COUNTY COMMISSIONER
KIAMBU COUNTY

Cc County Director of Education
KIAMBU COUNTY

National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
NAIROBI

All Deputy County Commissioners (***For information and record purposes***)
KIAMBU COUNTY

APPENDIX G

MINISTRY OF EDUCATION
State Department of Education

Telephone:Kiambu (office) 020-2044686
FAX NO. 020-2090948
Email:directoreducationkiambu@yahoo.com

When replying please quote

COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P. O. Box 2300
KIAMBU

KBU/CDE/HR/4/VOL.III/50

3rd October, 2017

Susan Njeri Ngunu
Kenyatta University
P.O. Box 43844 - 00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Reference is made to the National Commission for Science Technology and Innovation letter Ref. No NACOSTI/P/16/57394/14702 dated 6th December, 2016.

The above named has been authorized to carry out research on ***"Causal attributions and academic expectations of teachers and students as correlates of academic achievement in secondary schools in Kiambu County, Kenya"*** for a period ending 6th December, 2017.

Please accord her the necessary assistance.

COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P. O. Box 2300-00900
KIAMBU

LEAH ROIKO
For: COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY

APPENDIX H

MAP OF KIAMBU COUNTY

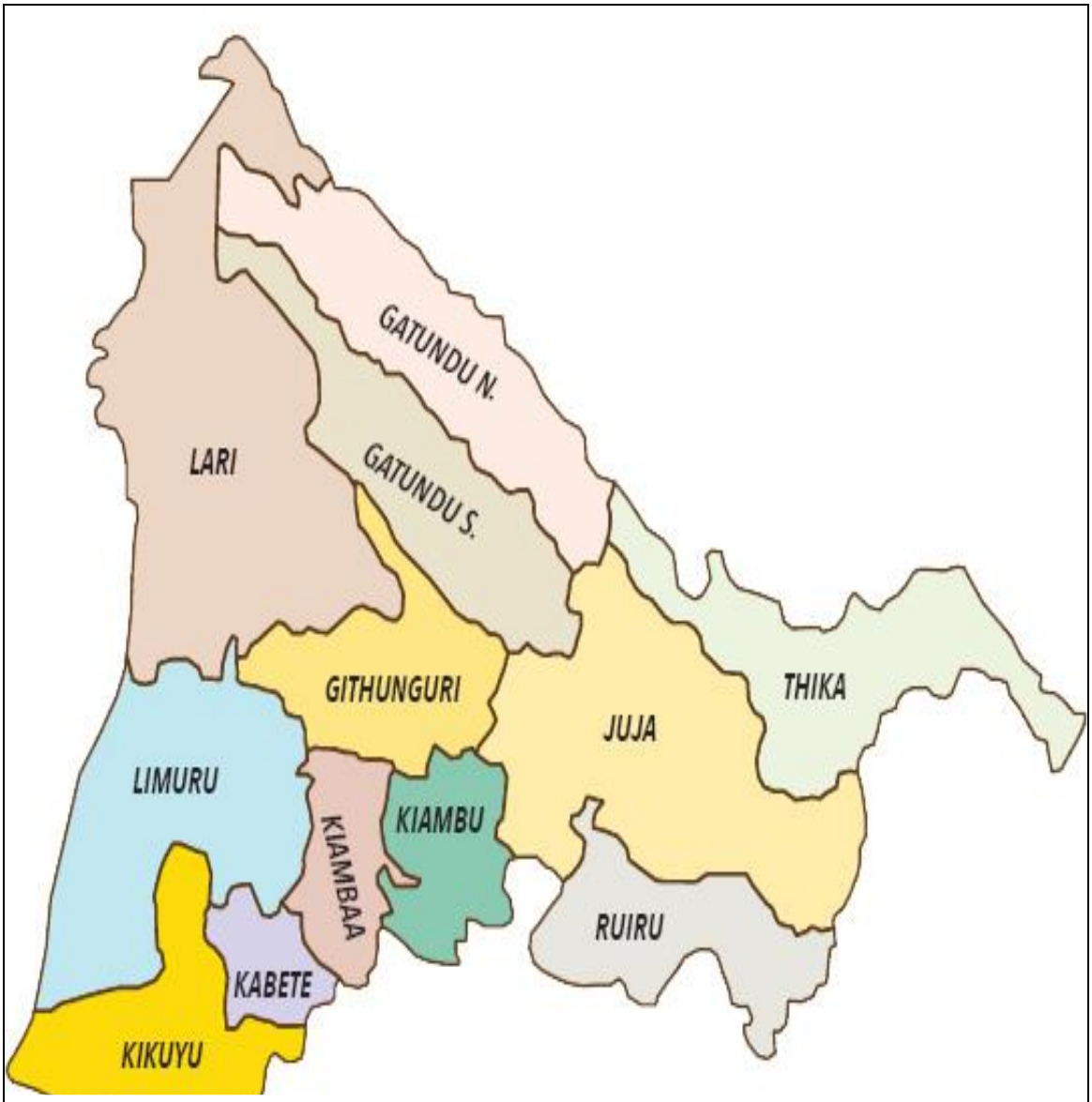

Figure H.1: Map of Kiambu County

APPENIDIX I

Re: PERMISSION TO USE THE INSTRUMENT MULTIDIMENSIONAL MULTIATTRIBUTIONAL CAUSALITY SCALE

Tuesday, September 15, 2015 6:20 PM

From: "Carl L von Baeyer" <carl.vonbaeyer@usask.ca>

To: "susan Ngunu" <njeringunu@yahoo.com>

Raw Message Printable View

Dear Susan,
Permission is not mine to give - I was only a student assistant on this project - but as the first author is dead and nobody will be monitoring this, I'd suggest you go ahead and use the MMCS. I'm sorry that I can't provide any other information. Good luck with your study.

CvB

On 15/09/2015 10:09 AM, Susan Ngunu wrote:
My name is SUSAN NJERI NGUNU. Am a PhD student at Kenyatta University , School of Education, Department of Educational Psychology, Kenya. Am carrying out a study on "Students' and teachers' causal attributions and academic expectations as correlates of the students academic performance". Iam kindly requesting you and the others who have formulated the above instrument to allow me use it in data collection on the students' and teachers causal attributions.
Will highly appreciate your kind gesture. Thanks in advance.

APPENDIX J

EXPLORATORY FACTOR ANALYSIS (EFA)

Rotated Component Matrix[a]

	Component		
	1	2	3
I don't know how I prevent future failure	.730	-.111	-.048
When I attain a good score I'm not sure how I'm going to get that score again	.728	.004	-.144
Incase I get poor grades I'm not sure how I can minimize the chances that happening again	.702	.071	.098
Have given up in some subjects	.507	-.445	-.039
I am always negative about my future performance no matter how well my previous performance	.364	-.127	-.231
I am capable of getting smarter if I work harder	-.075	.648	.199
Every student can do better if they worked hard	-.094	.617	.235
I'm willing to work hard to make progress	.074	.607	.035
Have little chance of doing well	.368	-.488	.043
Any student who is smart will always be successful	-.184	-.140	.720
Have a high expectation after failure	-.001	.308	.662
When the performance is poor I look forward to a better performance in the next assignment	.027	.303	.547

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.