RELATIONSHIP BETWEEN ACADEMIC SELF-CONCEPT, MOTIVATION AND ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN KISUMU COUNTY, KENYA

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DECLARATION

I declare that this research project is my original work and has not been presented in any other university/institution for consideration of any certification. This research project has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

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This project has been submitted for appraisal with my approval as university supervisor.

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DEDICATION

I dedicate this work to my family and friends. To my parents Stella Kerubo and Andrew Ondieki who have been of great support in the whole process. To my church members of CITAM Embakasi who have stood by me when I struggle to make the work flow and am low. Special thanks to my husband Derrick Onchaba who has held my hand even when I felt I couldn't make it.

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ABBREVIATIONS AND ACRONYMS

AIDS	: Acquired Immune Deficiency Syndrome
AMS	: Academic Motivation Scale
ASCS	: Academic Self-Concept Scale
CDE	: County Director of Education
HIV	: Human Immunodeficiency Virus
KCSE	: Kenya Certificate of Secondary Education
KNEC	: Kenya National Examination Council
MoE	: Ministry of Education
SPSS	: Statistical Package for Social Sciences
TSC	: Teachers' Service Commission
UK	: United Kingdom
USA	: United States of America

ABSTRACT

Students in Kisumu East Sub-County, Kisumu County have been posting low KCSE mean scores over the last several years albeit having the least number of schools and fewest number of candidates among the Sub-counties of Kisumu County**.** The consequences of this low academic achievement among the candidates in Kisumu East Sub-County might include missing out on lucrative careers and the lowering of their self-esteem. The purpose of the study was to investigate if a relationship existed between academic self-concept, academic motivation and academic achievement among learners in Kisumu East Sub-County. Objectives were to: establish the relationship between academic self-concept and academic achievement, establish the relationship between academic motivation and academic achievement, and determine the interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students in Kisumu East Sub-County. The study was informed by McClelland's Achievement Theory of Motivation**.** Correlational survey design was employed. Simple random sampling, purposive and stratified random sampling were used to select schools and participants. From a target population of 1224 students a sample size of 301 students was obtained. Data was collected using questionnaire adopted from the Academic Motivation Scale and the Academic Self-Concept Scale. Academic achievement was measured using standardized internal exams. A pilot study was conducted on 30 f students selected from three public secondary schools within Kisumu East Sub-County to ascertain validity and reliability of the instruments. Content, construct and face validities of the instruments were ascertained by two experts from educational psychology department. Split half technique was used to establish the reliability of the instruments. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive statistics included frequency counts, percentages, means, standard deviation and variance whereas inferential statistics involved Pearson Product Moment correlation coefficient, simple and multiple regression analysis and ANOVA. The formulated hypotheses were tested at 5% significance level. The results showed that a positive and significant correlation between academic self-concept of students and their academic achievement, r (289) = .54, $p < .05$. There was a strong positive correlation between academic motivation of the students and academic achievement, r (289) =.57, $p < .05$. It was also established that academic self-concept and academic motivation significantly predicted academic achievement, $R = 0.68$. R^2 was .46 which showed that 46% variance in academic achievement can be explained by academic self-concept and academic motivation. The study recommended that the ministry of education should come up with school programs integrated in the course content to promote students' academic self-efficacy and academic motivation in order to enhance learning and academic achievement in secondary schools.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This section contains the background of this study, its problem statement, purpose and the objectives that guide the research. It also has the significance, limitations, delimitations and the assumptions of the study. Furthermore, this section has the theoretical framework, conceptual framework and has also defined the operational definition of terms.

1.2 Background to the Study

Education can be defined as knowledge acquisition, attitudes and skills in either a formal setting such as a school, or in an informal setting. Therefore, education is important in the developmental formation of the youth of a country as it prepares them for adult duties and responsibilities. A number of researchers have found out that the education process not only influences how students develop socially and economically in formal learning set ups but also develops a country socially through good quality of life of its population (Idris et al., 2011; Mphale & Mhlauli, 2014; Villaseñor, 2019). Thus, stakeholders in the field of education including parents and teachers stress on students achieving well academically.

Academic achievement can therefore be referred to as the grades that a student gets from summative evaluation in a school. It refers to the performance outcomes from the

student's ability to study educational material in an examination using both quantitative and qualitative measures during formative and summative evaluation (Schilling & Applegate, 2012; Spinath, 2012). Academic achievement at the end of the secondary school cycle is used to determine entry of the students into tertiary level training and universities besides being a major factor in job placements (Dev, 2016; Regier, 2011).

This entry into the various levels is done through examinations. Its main purpose is to diagnose students' strengths and weaknesses, provide feedback on their academic progress, assess the extent to which the learning objectives were met, assign students' grades, and rank them according to abilities (Kolanchery, 2015; Roediger, et al., 2018). However, the performance in national examinations in Kisumu County in general and Kisumu East Sub-County in particular has been poor over the years. Between 2017 to 2019, Kisumu County had mean scores of 4.02 in 2017, 4.16 in 2018 and 4.49 in 2019 whereas, Kisumu East Sub-County posted mean scores of 3.03 in 2017, 3.21 in 2018 and 3.33 in 2019 in Kenya Certificate of Secondary Education examinations (Education County Director of Education [CDE], 2020). Comparing with the other Sub-counties in Kisumu County registered the lowest mean (appendix I). The consequences of such poor academic achievement include missing out on desired courses at the university, unemployment and lowered self-esteem among the graduates of secondary schools in Kisumu County in particular and Kenya at large.

Due to the importance attached to education, many researchers in education are particular in investigating to find out factors that affect its achievement. Studies carried out have revealed that many internal and external factors come into play to influence academic achievement; leadership styles (Ogalo, 2013), socio economic status (Barry, 2005), students characteristic (Ogweno et al., 2014), academic motivation (Tokan & Imakulata, 2019) and academic self-concept (Gayen & Bahera (2018)). Despite all these researches done, there is still paucity of literature concerning the study's independent variables and their relationship with the student academic achievement in Kisumu East Sub-County. The purpose of the current study was to investigate the interrelationship between the three variables Academic motivation, self-concept and academic achievement. There is empirical evidence that students who get motivated and their self-concept is high experience high academic achievement (Gbollie & Keamu, 2017; Mahakud & Joshi, 2016).

Academic motivation is the internal desire that a student has to meet academic objectives such as passing an examination. It is the drive that causes behaviors that affect academic achievement such as the effort students put into academic pursuits and regulation of their academic work (Mallick, De & Mukhopadhyay, 2017; Usher & Morris, 2012). Ryan and Deci (2000), define motivation as an aspect of being moved to do something. To add on individual's experience totally different motivations, that is academic motivation, which is different from other types of motivation. Therefore,

academic motivation is a drive that makes a student to engage in efforts that result in academic achievement.

Academic motivation can be categorized into intrinsic, extrinsic motivation and amotivation. Where intrinsic motivation is explained as performing an act or task because of the fulfillment you get from doing it (Ryan & Deci, 2000). Moreover, extrinsic motivation has also been defined as performing of an act so as to be given or gain another different outcome from it, whereas amotivation can be explained as not having the thought or zeal to perform a task. Individuals who are believed to be amotivated fail to perceive a relationship between their behavior, such as academic efforts and that behavior's subsequent outcome, such as academic performance (Shen et al., 2010). Intrinsic motivation is important because it indicates the autonomous human tendency to learn, while extrinsic motivation varies considerably in its relative autonomy. In addition, although studies have pointed out that academic achievement is associated with intrinsic motivation, Orvis et al. (2018) found out that students who were enrolled in Chemistry classes were extrinsically motivated more than intrinsically motivated.

Weinstein and Nguyen (2020) studied motivation and found out that motivation affected observed behavior. In addition, Chakandinakira (2016) studied the role of extrinsic motivation using teacher incentives on student achievement in learners in secondary schools and discovered that such extrinsic motivation methods led to improved academic performance among students. Abdurrahman and Garba (2014), Arbabisarjou et al., 2016),

Sivrikaya (2019) and Tella (2007) investigated to find out whether a relationship existed between academic motivation and academic achievement. The result stated a positive relationship existed between the variables.

Academic self-concept is defined as the view a student has over their academic abilities (Ordaz-Villegas et al., 2013). The view students have over their abilities academically is important because it predicts their goals and the subsequent effort expended towards the achievement of that goal (Wilson et al, 2014). Korantwi-Barimah (2017), Dranamu and Balarabe (2013) and Stephen (2011), explored the relationship between achievement and self -concept among students, their study discovered that there was a positive significant correlation between self-concept and academic achievement. Furthermore, Dagnew (2018) and Sikhwari (2017) explored the relationship between self-concept and academic achievement and found out that a significant correlation existed between the two variables in students. They interpreted this to mean that students with high academic self-concept were seen to have high academic achievement.

In Kenya, many educational researchers have carried out studies using the same variables and reported consistent results; for example, Gachigi (2018) and Ritho (2015) did a study in secondary schools in Nairobi County that sought to find out if academic self-concept and motivation respectively predicted learner's achievement. There existed a positive and significant relationship. In Kisumu County, Juma and Simatwa (2014), Makewa et al., 2014) investigated the factors affecting academic achievement of learners and found out

that motivational factors affected the academic performance. Furthermore, Odukah (2016), Okoth and Oluoch (2019) did a study to find out if motivation affects performance in two different learning set ups in Kisumu and reported that a significant relationship existed between motivation and achievement.

The foregoing studies established that academic self-concept and academic motivation had a relationship with academic achievement, however, these studies were carried out in other countries which have different cultural orientations. Many studies have been conducted in Kisumu East Sub-County relating either of the two variables outlined in this study. Despite the various studies and recommendation done by various educational researchers, low academic achievement continues to be registered in the Sub-County (County Director of Education, Kisumu 2020). The current study therefore intended to not only study the variables singly, but also find out the interrelationship between academic self-concept, academic motivation and academic achievement among learners in Kisumu East Sub-County.

1.3 Statement of the Problem

Kisumu East Sub-County has had poor academic achievement for the first three years. Statistics obtained from the Kenya Certificate of Secondary Education examinations results for the years 2017, 2018 and 2019 revealed that Kisumu East Sub-County posted mean scores of 3.03, 3.21 and 3.33 respectively. This was low in comparison with the Kisumu County's mean of 4.02, 4.16 and 4.49 and other six Kisumu counties as seen in

appendix I over the same years (CDE, 2020). The consequences of this low academic achievement among the candidates in Kisumu East Sub-County include missing out on careers that they desire, decreased self -esteem and confidence among continuing students in Kisumu East. In addition, the poor academic performance might discourage parents from paying school fees and buying the requirements for schooling because they might feel that it is an exercise in futility. It might contribute to unemployment which has been characterized as a ticking time-bomb among the young people of the nation.

Several researches have been done to investigate factors that may be leading to poor academic achievement but the researchers looked at other variables such as academic performance of AIDS-orphaned children, impact of parental involvement and cultural factors. Therefore, there is need to investigate the interrelationships between academic self-concept, academic motivation and academic achievement among students in Kisumu East Sub-County because an improvement in the academic achievement among the students in Kisumu East Sub-County would result in an improvement in both the Kisumu County and the national mean score which may impact positively on the future lives of the youths.

1.4 Purpose of the Study

This study was carried out to find out the relationships between academic self-concept, motivation and academic achievement among students in Kisumu East Sub-County.

1.5 Objectives of the Study

i. The objectives of the study were to:
ii. Establish the relationship between academic self-concept and academic achievement among secondary school students in Kisumu East Sub-County.
iii. Determine the relationship between academic motivation and academic achievement among secondary school students in Kisumu East Sub-County.
iv. Find out the interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students in Kisumu East Sub-County.

1.6 Alternative Hypotheses

The study was directed by the following alternative Hypotheses:

i. H_{a1}: There is a relationship between academic self-concept and academic achievement among secondary school students in Kisumu East Sub-County.
ii. H_{a2}: There is a relationship between academic motivation and academic achievement among secondary school students in Kisumu East Sub-County.
iii. H_{a3}: There are interrelationships between academic self-concept, academic motivation and academic achievement among secondary school students in Kisumu East Sub-County.

1.7 Significance of the Study

Beneficiaries from the present study are secondary school: students, teachers, teacher counselors' and parents of students in secondary schools. They may benefit by being able to identify how to improve on academic performance in examinations.

In addition, the Kenya National Examination Council (KNEC) may benefit from this study finding since they may be able to find out some of the psychological factors such as academic self-concept and motivation which might affect students' performance in national examinations and eventually look for modalities on how to enhance them for better academic achievement.

Ministry of Education (MoE) may benefit from this study finding and use it to advise parents and teachers on ways to improve students' performance.

The school counselors may benefit from this study since they may be able to help students in matters regarding self –concept and motivation in school in order to boost their academic achievement.

1.8 Limitation and Delimitation

The limitations and delimitations of the present study were as described below.

1.8.1 Limitations of the Study

This study used self-report in which the respondent might suffer from the social desirability effect. This was minimized by employing anonymity that is the respondents

did not include any of their identity be it names or other aspects on the questionnaire. The questionnaire was also hampered by the fact that it could not probe into the meanings of the respondents. However, this was minimized by the fact that the scales used for collecting data were standardized with high reliability and validity scores so that they could consistently measure the aspects they were to measure.

Another limitation is that the population for the study was secondary school students. Therefore, the findings might not be generalized to students in the other education levels such as primary, college and university levels. In addition, the exam results that were used in analyzing the performance of the students were not standardized across schools. This was offset by using the z-score so that the scores could be compared across the schools.

1.8.2 Delimitations of the Study

This study put into consideration only secondary school that are public in Kisumu East Sub-County due to their accessibility in terms of permits and procedures to be able to carry out the study.

In addition, this study limited itself to the independent variables under study, which were, academic self-concept and academic motivation. This study assumed that the factors might have a relationship with students' academic achievement, and this would have excluded other variables in academic achievement.

In addition, the study delimited itself to McClelland's theory because it combines self-concept, motivation and achievement. The instrument for data collection was a closed ended questionnaire that is considered to be easy to answer, statistically analyze and code as compared to open-ended questionnaires.

1.9 Assumptions of the Study

The study had the assumptions that:

i. All students in Kisumu East Sub-County possess academic self-concept and academic motivation at the same time, especially in the duration of the study.
ii. The study further assumed that all students desire to perform well in the examinations which are administered to them.

1.10 Theoretical and Conceptual Framework

This study had both theoretical and conceptual frameworks.

1.10.1 Theoretical Framework

This study used McClelland's Achievement Theory of Motivation. This theory postulates that the need for achievement, power and affiliation is what drives an individual (Maharjan, 2018). Furthermore, in relation to this theory, different people are motivated by different factors depending on an individual's self-concept, which is stated as the way an individual evaluates, thinks and the perception they hold of themselves (Maharjan, 2018; McLeod, 2008). Therefore, the academic self-concept refers to how a person

perceives their academic ability. Subsequently, academic achievement would depend on a person's motivation from the need for achievement according to how they perceive themselves academically.

Moore et al., 2010) examined student intentions of taking part in a leadership learning community program in reference to the above theory. The results stated that all the three needs were present but the most common motive was the need for affiliation. However, Moore et al., 2010) did not consider the relationship between learners' academic achievement and McClelland's theory, as is the case in the present study.

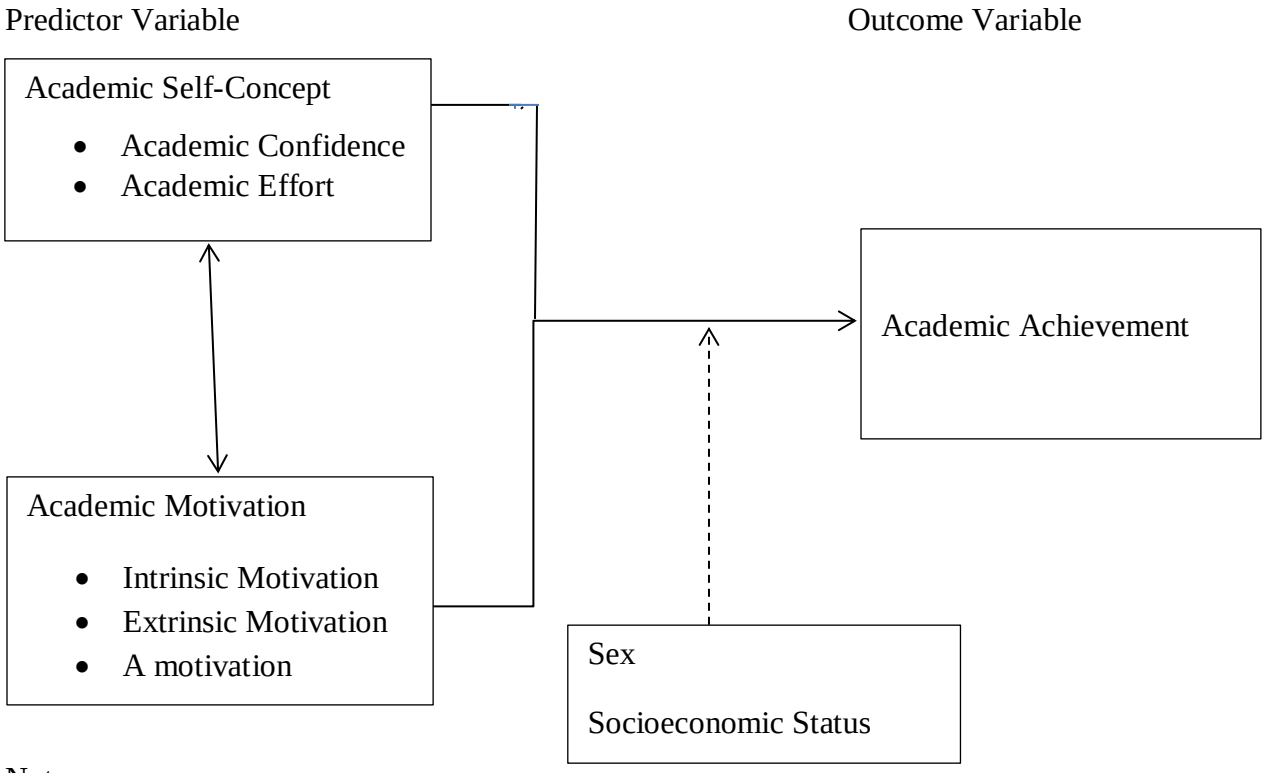
Furthermore, Jha (2010) investigated the needs of McClelland's Achievement theory as independent variables in a study of the empowerment of an individual psychologically. That study concluded that all McClelland's need for achievement, among others, is significant and related positively to psychological empowerment. Nevertheless, the study was conducted among hotel employees unlike in the present study where psychological empowerment is investigated as academic achievement and self -concept.

Therefore, McClelland's Achievement Theory of Motivation and the proposed study relate in that the theory postulates that there might be a relationship between academic self-concept, motivation and achievement because the theory states; people can be motivated by the need for achievement depending on their self-concept.

1.10.2 Conceptual Framework

The conceptual framework indicates that the intervening variables mediate the relationship between predictor variables and outcome variables. The predictor variables are academic self-concept and academic motivation whereas the outcome variable is academic achievement. The sub-variables in the academic self-concept predictor variable are academic confidence and academic effort whereas the sub-variables in the academic motivation variable are extrinsic motivation, intrinsic motivation and a motivation. The intervening variables in the conceptual framework are sex and socioeconomic status.

Figure 1.1: The Relationship between Academic self- concept, Motivation and Academic achievement



Note

⟷ Interrelationship between predictor variables

⟶ Relationship between the predictor variables and outcome variables

⇢ Influence of intervening variables on the interrelationships between the predictor variables and the outcome variables

Source: Researcher (2021)

1.11 Operational Definition of Terms

- **Academic achievement**: The summative score attained in an examination administered at the end of Term II of the Kenyan school calendar. This was obtained through the progressive reports in the Dean of student's office.

- **Academic motivation**: The drive that a student possesses to attain high scores in an examination administered at the end of Term II of the Kenyan school calendar. This was measured using the Academic Motivation Scale (AMS) by Vallerand et al (1989). The scale measures this aspect using 28 items.

- **Extrinsic Motivation:** The performance of a task because of a different outcome that you get from it. This was obtained by getting the total sum of the score obtained from the items that measure extrinsic motivation in the AMS

- **Intrinsic Motivation:** The performance of a task because of the fulfillment you obtain from performing it. This was obtained by getting the sum total of the score obtained from the items that measure intrinsic motivation in the AMS

- **Amotivation:** The sum total of the score obtained from the items that measure a motivation in the AMS.

- **Academic self-concept:** How a student perceives themselves in relation to their academic ability. This was obtained using the Academic Self-Concept Scale (ASCS) by Reynolds et al (1980). The scale has 40 items that measure this aspect.

- **Academic Confidence:** Total score from the items that measure academic confidence in the ASCS.

- **Academic Effort:** The total score from the items that measure academic effort on the ASCS.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The chapter discusses the literature that has been reviewed and is related to the current study on academic self- concept, academic motivation and academic achievement. It is organized as per the study objectives. Finally, a literature summary and identification of gaps indications are presented.

2.2 Relationship between Academic Self-Concept and Academic Achievement

A number of studies have considered the relationship between the variables academic self-concept and academic achievement. In India, Gayen and Bahera (2018) studied the self-concept of post-graduate students of different religions using survey design. The research design was the normative Survey Research method and it used a general self-concept questionnaire in order to obtain data that was analyzed using t-test together with ANOVA for analysis of data. This study discovered that a significant difference in self – concept existed among the post-graduate students based on the academic years that they were in. However, the study did not look into high school students' academic self – concept but rather postgraduate students. The study was also done in India where there can be cultural differences as compared to Kenyan set up.

In Pakistan, Ajmal and Rafifue (2018) conducted a study with the aim of establishing if there was a link between distance learners' academic self-concept and their academic achievement. The Liu and Wang (2005) academic self-concept scale was customized and used to assess distance learners' academic self-concept. Academic effort and academic confidence were the two subscales of the scale. The learners' academic achievement was measured by their last semester's grade. The sample was drawn using a convenient sampling technique, with 427 distance learners from the M.Ed (1 year) program and 373 distance learners from the B.Ed (1.5 year) program of Allama Iqbal Open University. The effect size was estimated using Pearson correlation and independent samples t-test. The findings demonstrated that there is a strong link between distance learners' academic self-concept and their academic accomplishment. The limitation of this study was the fact that it was done in Pakistan in tertiary institutions while the current study focused on secondary school students to enhance knowledge in this area.

In Spain, Herrera et al. (2020) carried a research to examine academic accomplishment, self-concept, personality, and emotional intelligence in relation to the participants' gender and cultural background. The study also examined the aspects of self-concept, personality, and emotional intelligence that are associated with academic success. The study used a sample of 407 learners enrolled during the last two years of primary school. With an average age of 10.74 years, there were 192 boys (47.2 percent) and 215 girls (52.8 percent) by gender. There were 142 students of European descent (34.9 percent) and 265 students of Amazigh descent (65.1 percent). Academic achievement was

assessed using grades from three subjects in school: Natural Sciences, Spanish Language and Literature and Maths. The findings of the study showed that scores in the subject of Spanish Literature and Language varied depending on the sex of the pupils. Gender disparities were also discovered in self-concept, personality, and emotional intelligence. Academic self-concept had a higher predictive value in the predictive modeling for each of the subjects in the Primary Education curriculum. Other aspects of self-concept, personality, and emotional intelligence, on the other hand, did not. This study however focused on primary school pupils in Spain which differ in many ways with the Kenyan context hence the need for the current study.

Arshad et al. (2015) on the other hand investigated if a relationship existed between self-esteem and performance of students academically among selected university students in Pakistan. Purposive sampling was used to obtain this sample. This study employed the Self-Esteem and Academic performance rating scales by Rosenberg to collect quantitative data. Data was analyzed by use of a t-test and Pearson product momentum correlation coefficient *r*. This study concluded that there existed a significant relationship ($r=0.879$, $p<.01$) between the two variables amongst university students. However, this study looked into the variable self –esteem not academic self -concept. The present study may fill the gap by relating academic self -concept to academic achievement.

Furthermore, Mahakud and Joshi (2016) carried out a study to establish whether a relationship existed between self-concept, academic achievement and learning abilities in

disabled primary school pupils in India. Data was collected using self-concept inventory by Saraswat (1984) and Academic Achievement Needs Scale developed by Tanwar and Amalnerkar (2010) in a single case design. The results revealed that children who had learning disabilities had poor self-concept in comparison to skilled learners. As a result, the children who presented as having learning disabilities had poor academic performance than their counterparts. However, the study was limited to primary school children with learning disabilities unlike in the present study where all learners considered are in secondary schools. To add on the study was done in India and data collected using a self -concept inventory as opposed to the current study that was carried out in Kenya and using an academic self -concept scale by Reynold.

In Africa, Shepherd (2017) carried out a study to establish if there existed any relationship between self-concept and academic achievement in Mathematics and Science subjects among grade 9 students in South African Schools. Trends in Mathematics and Science study (2011) was used to get the data. This study discovered that in South Africa 80% of the poorest schools had Grade Nine girls who didn't experience any domain specific performance difference between motivation and self-concept.; contrary to a sample of girls drawn from different subsets in schools that were considered wealthy that were found to be underperforming in Mathematics and science. To add on they possessed motivation and self- concept that was lower to add on the anxiety was also higher. However, the study was carried out in South Africa and among grade 9 students. The data obtained was for 2011 and specific to science subjects. The present study aimed to fill the

gap by conducting the study in secondary school students in Kenya and put into consideration on the performance in all subjects.

In the West African nation of Nigeria, Nne and Ekene (2021) carried out a research to find out if there was a link between students' academic self-concept and self-efficacy beliefs and secondary school students' English language academic achievement in Anambra State. A total of 600 students were chosen from a population of 21204 to participate in the study. The sample was chosen by a multi-stage approach. The data were collected using two standardized research instruments, the Self-Description Questionnaire (SDQ) and the Self-Efficacy Scale (SES) and the students' promotional exams. The findings of the study showed that students' academic self-concept had a low positive link with their self-efficacy views. These characteristics also statistically predicted students' academic achievement in English language. This study was conducted among secondary school students but it was limited to only one subject which was English and therefore it was necessary to investigate if similar results would be obtained on general academic achievement.

In Kenya, Njoki et al. (2019) conducted a study that looked into the levels of correlation between the mathematical achievement of students and their academic self- concept in secondary schools in Nairobi County that were selected. This study employed inferential and descriptive statistics. The study considered students in form 3 who were a total of 9641. A drawn sample from public secondary schools located in Nairobi County, that had

registered students for Kenya Certificate of Secondary Education for the past three years was used. Data collected from a sample of 500 learners was used and the population was arrived at by the use of Simple random sampling and stratified random sampling. The mathematics achievement from the last three terms was used for every participant using Academic Self-Concept Questionnaire. Data analysis used linear regressions, ANOVA and t-test for independent samples. The study found out that academic self-concept positively predicted mathematics performance. However, the study by Njoki et al (2019) only considered the relationship between academic self-concept and mathematics achievement. This study may therefore fill this gap by investigating the relationship between academic self-concept and students' achievement academically in all subjects. Moreover, the study was conducted in Nairobi County, Kenya where KCSE mean performance is much higher than that of Kisumu East Sub-County of Kisumu County. Therefore, there is need to investigate whether academic self-concept and academic achievement have any relationship among students in Kisumu East Sub-County.

2.3 Relationship between Academic Motivation and Academic Achievement

In the Philippines, Inocian et al. (2019) investigated the different levels of academic motivation of high school students in the Philippines in a quantitative study using a questionnaire which collected categorical data that was analyzed using chi-square. The researchers conducted a survey with 100 Senior High School students. The result showed that academic motivation is essential for the students for them to be dedicated enough in

their studies. The Inocian et al. (2019) study was limited by the categorical data that it collected and therefore couldn't yield correlation findings.

In addition, Han et al. (2019) studied demotivating factors affecting EFL university students' English language learning process in Turkey. The study used questionnaire and interview schedule to collect data which was analyzed using inferential statistics and thematic analysis respectively. Qualitative findings indicated that students were demotivated by negative attitudes of the classmates, personal issues, test anxiety and failure experiences among other factors. Moreover, Nauzeer and Jaunky (2019) sought to determine the most robust stimuli of motivation among intrinsic, extrinsic and amotivation. Unmodified and modified SEM was used to identify the relationship between the variables and academic performance using a sample of secondary school students. The study found out that motivation factors such as private tuition and learning resources had positive and significant effect on students' performance. On the other hand, Sukor et al. (2017) investigated motivation towards food science course among non-food science students. Data collected using a validated and reliable questionnaire was analyzed inferentially to reveal that there was a positive significant relationship between overall motivations and academic performance. However, Han et al. (2019), Inocian et al. (2019), Nauzeer and Jaunky (2019) and Sukor et al. (2017) did not study students in an African sociocultural context such as Kenya. Therefore, Tokan and Imakulata (2019) and Müller and Louw studied motivation among students in South Africa.

In Turkey at Balikesir University, Sivrikaya (2019) did a research with the aim of looking into the link between academic motivation and academic accomplishment in physical education and sports students. The study's population consisted of all undergraduates (n = 500) enrolled at Balikesir University. A total of 120 students in physical education and sports education were included in the study. There are three intrinsic motivations, three extrinsic motives, and one amotivational dimension, each with four sub-dimensions and four items. The study found that there was no significant difference in academic motivation between the sexes. The average academic score of females was greater than the average academic score of males. Men had a higher average academic motivation score than women. When kids' academic achievement in physical education and sports school improves, their self-test scores improve as well. This was a study done in a university in Turkey and therefore there was need to find out if similar results would be obtained in the Kenyan context.

In Germany, a study by Steinmayr et al. (2019) stated that success motivation is a broad term that encompasses a number of distinct structures such as ability self-concepts, task values, objectives, and achievement motives. The purpose of this study was to see if earlier findings could be duplicated when ability self-concepts, task values, goals, and achievement motives were all evaluated at the same level of specificity as accomplishment criteria (e.g., hope for success in math and math grades). A sample of 345 eleventh and twelfth grade students (M = 17.48 years old, SD = 1.06) from Germany's highest academic track (Gymnasium) were involved in the study. In math,

German, and school in general, learners self-reported their ability self-concepts, task values, goal orientations, and accomplishment reasons. The study assessed learners IQ with regard to their present and previous grades in Math and German. Edgar et al. (2019), Malau-Aduli et al. (2021) and Sharma and Sharma (2018) concur that academic achievement motivation is a broad term that encompasses a variety of factors which include domain-specific ability, self-concept, motives, task values, and learning goals. The study involved students in Germany and across only two subjects which limits the generalization of the findings to the Kenyan secondary school students.

In Canada, a study by Howard et al. (2021) found out that different types of motivation, such as external incentives, ego-involvement, personal value, and intrinsic interest, influence student outcomes. The different types of motivation as outlined in the self-determination theory lead to different outcomes in educational achievement. In this meta-analysis, the researchers examined how different types of motivation were associated with performance, well-being, goal orientation, and persistence-related outcomes among 344 students. The findings showed that intrinsic motivation is linked to student performance and happiness, while personal worth (identified regulation) was significantly linked to persistence. Interjected regulation and ego-involved motives were positively related to persistence and performance goals. Takahashi (2018) and Flitcrots and Woods (2018) states that motivation is an important construct that need to be considered in learning programs for better performance in assessments and exams. These studies were

based in regions outside Kenya and owing to the dynamic nature of learning behaviour there was need for a similar study in Kenya to compare the results.

Tokan and Imakulata (2019) sought to find out whether the performance of students in biology had a direct relationship with their extrinsic and intrinsic motivation. This study employed correlation research design and collected data using a questionnaire and a document analysis guide. This data was analyzed using path analysis. It revealed that both intrinsic and extrinsic motivations affected achievement of students academically directly in biology education. However, this study confined itself to students who were learning one subject and looked at the two aspects of motivation; extrinsic and intrinsic motivation. Therefore, Müller and Louw (2004) sought to test the theoretical assumptions of the Self Determination Theory in a cross-cultural setting using undergraduate students in South Africa. The results showed that most of the students were intrinsically motivated when provided with individual study interests, and self-determined forms of extrinsic motivation. This study is going to also consider amotivation. To add on this study is considering performance in all subjects.

In Kenya, Muriungi and Mbui (2015) sought to investigate how the acquisition of English language skills was influenced by motivation in day secondary schools in Imenti County. The study was quantitative that analyzed its data using only descriptive statistics using 399 students who were selected from a population of 1954 form two students and 8 teachers. Analysis by descriptive statistics was done with data was that was collected by

questionnaires. The findings showed that motivation greatly influenced students' acquisition of the English language. However, the study did not perform any inferential analysis. In addition, the study only considered the academic achievement in one subject, which was English. For that reason, this study fills this gap in literature by conducting inferential analysis on the data obtained and by considering the achievement in all subjects and not just English.

In Kisumu County, Odanga (2018) sought to identify the strategies for increasing intrinsic motivation for academic improvement among secondary school students using a sample of secondary school students selected using convenient sampling technique. Qualitative data was collected using focus group and analyzed using thematic analysis to yield significant themes. The study found out that intrinsic motivation factors improved students' academic achievement. Therefore, the present study filled this gap by employing the McClelland's Achievement Theory of Motivation which combines both achievement and motivation in a strong theoretical structure.

2.4 Interrelationship Between Academic Self-Concept, Academic Motivation and Academic Achievement

There has been paucity of literature that looked into the three variables academic self-concept, academic motivation and academic achievement. In Iran, Asakereh and Dehghannezhad (2016) investigated the relationships between student self-beliefs and English speaking skills achievement. The study sample consisted of 100 Iranian English

Foreign Language (EFL) undergraduate students. Questionnaires were used to collect data and participants' final scores collected from their instructors was regarded as a measure of speaking skills achievement. Pearson product moment was used for data analysis showed that self-beliefs had significant positive correlations with speaking skills achievement. The current study used Form Three students as study participants focusing on their performance in internal examination as opposed to undergraduate students as study participants and focusing on performance in English speaking skills. In addition, the study by Asakereh and Dehghannezhad (2016) did not specifically consider the independent variables discussed in this study and their relationships to academic achievement, as is the case in the present study.

A study by Nawaz et al. (2021) explored the relationship between achievement motivation, self-efficacy, and academic performance of senior secondary school students in Nigeria. The study's participants were 400 senior high school students from ten secondary schools in Bauchi state. Data were collected using achievement motivation, self-efficacy scales, and student results. The null hypotheses were tested using Pearson correlation. The study's findings demonstrated a significant correlation between accomplishment motivation and academic performance of senior secondary school pupils in Bauchi state (r =.432, p =.002). Academic achievement was found to have a strong association with self-efficacy (r =.230, p = .014). There was a significant relationship between accomplishment motivation and self-efficacy. Achievement motivation and self-

efficacy were found to have a significant association among art students. Achievement motivation and self-efficacy had a significant link among science students.

A study by Veas et al. (2019) was done in Spain with the aim of looking at academic self-concept as a possible mediator in the relationship between academic attitudes and academic achievement in early teenage years of learners. The study involved 1398 high school pupils from Alicante, Spain (47 percent of whom were female, with an average age of 12.5 years). Within-subject effects at the student level and between-subject effects at the class level were measured using multilevel mediation analyses using Monte Carlo confidence intervals. Academic attitudes (attitude toward instructors and attitudes toward learning) and academic self-concept were assessed using validated instruments, whereas academic accomplishment was determined by the students' end-of-term grades in nine disciplines. The findings by Veas et al. (2019) revealed, first, that academic attitude components have significant effects on the mediational and dependent variables at both the primary and secondary levels. Second, at both levels of analysis, academic self-concept was an influential source for all academic attitude components. These findings illustrate the importance of early adolescent academic self-concept and show that academic attitudes are critical for educational achievement. The study however did not include the motivation aspect directly as a variable in this research.

In another study by Zaini et al. (2021) investigated how students were choosing the correct job routes that are important to their futures is undoubtedly one of the most

difficult decisions that most adolescents face. As a result, understanding the factors that influence students' career choices is more crucial in educational settings. The purpose of this study was to look at the effects of academic achievement and academic self-concept on career choice among UPM university students. Questionnaires, one focusing on academic self-concept and the other on vocational decision-making, were sent to respondents via email and social media platforms using Google Forms. The researcher based the data on academic performance on the pupils' current Cumulative Grade Point Average (CGPA) scores. A total of 171 final-year students from Universiti Putra Malaysia were sampled using the multi-stage cluster sampling approach (UPM). SmartPLS 3 was used to analyze the data. The results of ordinary least square method (PLS-SEM) demonstrated that students' academic self-concept influence their professional decision-making directly. Academic performance, on the other hand, was found to have no direct correlation with career choice. Students' intellectual self-concept can help them decide upon their career prospects. The Zaini et al. (2021) study was based on university students' past experience in their teenage school life in Asia and thus the need for the current study to enhance the generalization of the results.

Using the psycho-sociocultural framework in the American continent a research by Beasley et al. (2021) looked at the impact of psychological (students' self-concept and academic engagement perceptions), social (caring student-faculty relationships), and cultural (racial centrality and perceived university environment) variables on Black college students' academic achievement. A total of 247 college students were chosen

from a large, predominantly White institution in the Southwest. The results of structural equation modeling strongly validated hypothesized correlations between variables, accounting for 16% of the variance in GPA, 75% of the variance in academic engagement, and 29% of the variance in students' academic self-concept. The findings demonstrated two positive direct pathways to GPA: Students' academic self-concept played an important role in promoting indirect impact on student engagement and GPA. The findings point to a number of cognitive variables that can help students succeed in school.

In Africa, Sumbwanyambe (2017) assessed some factors that led to female secondary school students in Lusaka to perform poorly. Qualitative data was collected from the study sample of 15 teachers, 24 pupils and 15 parents using interview guides, observation schedule and Focus Group Discussions guide. The analysis done by use of thematic analysis. This study discovered that motivational practices influenced the pupils' academic performance in favor of schools where such motivational practices were practiced. However, like in the case of other studies from other parts of the world, the study did not consider all the variables under study here, which are motivation, academic self-concept and a motivation.

In Kenya, Wara et al. (2018) investigated the relationship between the engagement of a student cognitively and academic achievement in selected secondary schools in Nyamira County. A sample of 11 principals, 11 teachers and 312 students was obtained using

simple random sampling. Mixed methods approach was used in this study with the concurrent triangulation design. Quantitative data collected using questionnaires from the students and interview schedules from the Principals and teachers. Pearson product was used to do correlation for the quantitative data whereas analysis of qualitative data was done thematically. This study revealed that academic achievement among secondary school students was predicted by cognitive engagement. (r=.376, N=312, p =.01). However, motivation and self-concept might be cognitive factors in academic achievement, the study by Wara et al (2018) did not consider academic self-concept and motivation among students.

2.5 Summary of Review of Related Literature and Gap Identification

The literature reviewed dealt with self-concept with some studies considering academic self-concept. It also dealt with motivation and academic achievement. However, there was a paucity of studies on academic self-concept and academic motivation for all areas under study in schools. In addition, there were some studies into the three variables. Some of the reviewed studies used the qualitative approach and collected qualitative data with the use of observed guides, group discussions and scheduled interviews. However, with reputable quantitative data collection tools that have high reliability such as the ASCS and AMS, the constructs of academic self-concept, academic motivation readily lends themselves to quantitative study. For that reason, this study may fill the gap by employing the ASCS and AMS to collect quantitative data.

Gaps in literature were also identified concerning the population used in the reviewed research. Some of the studies reviewed used adult populations such as organizational employees and college students which might be considered older than the population in secondary schools. Therefore, the present study used secondary school students as the population for the study. Moreover, many of the cited studies were conducted in different locations from Kisumu County which might have different socioeconomic and demographic factors from Kisumu East Sub County. And even with the studies that were done in Kisumu, the studies mostly used adults as the study sample and investigated other variables.

In addition, most studies investigated relationships between one of either of the variables that this study is going to consider. But few studies considered the interrelationship between all the three variables. Therefore, the present study may fill these gaps in literature by investigating the variables academic motivation, academic self- concept and academic achievement using quantitative approaches.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The areas under discussion in this chapter include: Research Design, locale of the study, research variables, research variables, research methodology and specific data collection methods, target population, sampling techniques and sample size determination, research instruments, Pre-testing/Piloting Study, Validity, Reliability, Data Collection Techniques, Data Analysis, and Logistical and Ethical Considerations.

3.2 Research Design

The study used the correlational survey design to investigate the relationship between academic self-concept, academic motivation and academic achievement among students in Kisumu East Sub-County. The correlational survey design measured relationship between two variables which don't necessarily have a causal relationship and without the researcher controlling either of them (McCombes, 2020). Therefore, the present study used the correlational survey design because no attempts were to be made to manipulate the variables under study as the events of interest had already occurred or were occurring naturally.

3.3 Locale for Study

The locale for this study was Kisumu East Sub-County of Kisumu County, Kenya. This locale was chosen because the academic achievement in Kisumu East Sub-County had been poor for three consecutive years; 2017 to 2019, as is evidenced in the Kenya Certificate of Secondary Education examinations results. This was lowest in comparison with the other sub counties in Kisumu County as seen in appendix I over the same years (CDE, 2020).

3.4 Variables

The predictor variables for this study were academic self-concept and academic motivation. The outcome variable for this study was academic achievement. Academic self-concept, academic motivation and academic achievement were measured at the interval level of measurement. The intervening variables of sex and socioeconomic status were measured at the nominal level of measurement.

3.5 Research Methodology and Specific Data Collection Methods

The research used Quantitative approach and within it the correlational survey design was used. The merits of using the quantitative approach were that it affords objectivity and accuracy and a larger sample can be used than with the qualitative approach Mathers et al. (2007). The data collection method was administration of questionnaires. Questionnaires were used in the present study because they afford uniformity in the data

collected to the researcher, anonymity to the respondents and it has high validity (Choudhury, 2020).

3.6 Target Population

The target population was constituted of all form three students in Kisumu East Sub-County. The study population comprised of 302 students in form three that were selected from 16 secondary schools that were categorized as public in Kisumu East Sub-County. The number of boys being 151 and Girls 151.The form three students were used as the study population because at their level, they had already chosen subjects, set goals and had a specific career pathway that they believed to be working towards. On the other hand, public secondary schools were used in the study because they were easily accessible unlike private schools that require another permit from their management after the Ministry of Education permit has been given. All Kisumu East Sub- County Secondary schools are Co Educational, and the schools are in two main categories; County Schools (2) and Sub- County schools (14).

3.7 Sampling Techniques and Sample Size Determination

3.7.1 Sampling Techniques

Simple random sampling, purposive and stratified random sampling were used to obtain the survey participants.

Purposive sampling technique is a non-random technique that involves the selection of an informant deliberately because of the qualities that they possess (Tongco, 2007). It was used to obtain Form Three students to participate in the study because although it has inherent bias, it stays robust even when tested against other sampling methods. The Form Three students were chosen because unlike the Form One and Form Two students, they had received the school Guidance and Counselling programs aimed at raising their motivation and academic self -concept to the maximum level. On the other hand, unlike the Form Four students, they not encumbered with rigorous preparations for national examinations.

In addition, the present study employed proportionate stratified sampling technique, which is categorized as a random technique. Proportionate stratified random sampling is a sampling technique that involves attaining a homogenous group once division is done. These homogenous groups are what are referred to as strata. A sample is then selected from each stratum using simple random sampling according to its proportion in the study population (Singh & Singh, 2015). This technique was used because it ensured the representation of respondents with different characteristics from various sub-groups (Lynn, 2016; Pu, Gao, Fan & Wang, 2016). The strata used in the current study was gender and category of school, which are non-overlapping strata.

Simple random sampling involves selecting the study participants based on the process of lottery where every participant has an equal chance of being selected (Singh & Singh,

2015). Simple random sampling was used because the strata are homogeneous and it therefore frees the sampling process from bias.

3.7.2 Sample Size Determination

The sample size of the current study was generated using Israel's (2013, p. 4) formula,

$$n = \frac{N}{1 + N\,(e^2)}$$

where n = sample size, N = population size and e = level of precision (p = 0.05).

Therefore, $n = \frac{1224}{1+1224\,(.05^2)} = 301.47 \approx 302$

Table 3.1

Sampling Frame

Type of school	No of schools	Population size		Sample size	
		Boys	Girls	Boys	Girls
County Schools	2	142	163	35	35
Sub-County Schools	15	472	537	116	116
Total	**17**	**614**	**610**	**151**	**151**

Source: Researcher (2021)

Therefore, the population of 1224 students was adequately represented by a sample of 302 students after putting them into categories of schools and gender strata. The study

sample was distributed proportionately between the sexes in public Co-Educational schools. This yielded 151 boys and 151 girls from the Co-Educational schools. The sample from County schools was 70 while the sample from Sub-County schools was 232 students obtained by proportionately dividing the students according to the population of the County schools on one hand and Sub-County schools on the other hand.

3.8 Research Instruments

The study collected quantitative data using questionnaires. The questionnaires had four sections: the demographic section, the section capturing academic achievement, the section measuring academic self-concept and the section measuring academic motivation. Each student required 40 minutes to complete the questionnaire.

Sections I: Demographic information

The researcher constructed a question which helped in gathering information about the participants' sex, category of school and socioeconomic status (Appendix A).

Section II: Academic Achievement

The researcher designed a tool which was aimed at capturing the total marks and aggregate grade of all the research participants.

Section III: Academic Self-Concept Scale

Academic Self-Concept Scale (ASCS) was developed by Reynolds et al (1980). This scale was adopted by the researcher so that it has language and terms that are applicable

to secondary school students. The ASCS has 40 items measuring academic self-concept on a 4-point Likert scale (Appendix E). The ASCS has an original internal reliability using Cronbach's α of 0. 91. Permission to use the ASCS was obtained (Appendix D).

Section IV: Academic Motivation Scale

Academic Motivation Scale (AMS) was originally developed by Vallerand et al (1989) and it was adopted by the researcher so that it had language and terms that were applicable to secondary school students. The AMS had 28 items measuring academic motivation on a 7-point Likert scale, (Appendix D). The internal reliability of the original instrument using Cronbach's α was 0.79. Permission to use the instrument was obtained (Appendix C).

3.9 Pilot Study

Piloting can be defined as conducting small versions of the full-scale study as a way of pre-testing the questionnaires (Teijlingen & Hundley, 2001). Piloting was conducted with students to eliminate ambiguities and biases in the instruments for data collection. The pilot was carried out among schools in Kisumu East Sub-County who were not sampled for the main study. The pilot sample was 30 students, of which 15 were female and 15 were male. The terms changed from the academic motivation questionnaire from "I find it interesting to learn new topics to I find it fun learning new topics". The instruments reliability was determined using Cronbach's α, to determine internal reliability.

3.9.1 Validity of Instrument

Validity can be defined as the degree to which data collection instruments such as questionnaires and data analysis guides measures what it was intended to measure (Trochim, 2006). The data collection instruments was ascertained for face validity. Face validity is whether an instrument for data collection appears to measure that which it is supposed to measure (Smith, 2010). Face and content validity of the data collection instruments were ascertained by lecturers from the department of Psychology at Kenyatta University. The language used in some of the items was changed to fit the level of form three students in the Kenyan context.

3.9.2 Reliability of Instrument

Reliability can be defined as the extent of consistency and stability of an instrument across independent measurements against chance factors or environmental conditions (Cherry, 2010; DeLamater & Myers, 2011). Split half technique was used to test the reliability of the research instruments and the results are shown in Table 3.2.

Table 3.2

Reliability Statistics

Academic Self Concept Scale Cronbach's Alpha	Part 1	Value	.78
		N of Items	20[a]
	Part 2	Value	.72
		N of Items	20[b]
	Total N of Items		40
Academic Motivation Scale Cronbach's Alpha	Part 1	Value	.76
		N of Items	14[a]
	Part 2	Value	.81
		N of Items	14[b]
	Total N of Items		28

The present study established the questionnaires internal reliability by use of Cronbach's reliability coefficient, alpha (α) was used to establish questionnaire internal reliability using Gliem and Gliem (2003) formula, $\alpha = rk \div [1 + (k - 1) r]$, where k = number of items considered and r = mean of the inter-item correlations. The results showed that the questionnaires were reliable since the acceptable alpha level for the reliability coefficient was 0.7 or more.

3.10 Data Collection Technique

The researcher made visits to the schools, met the heads of the schools and shared on the research's purpose, nature and eventually scheduled the dates for collection of data. Once a consensus was reached on the date for data collection the researcher went ahead and visited the schools on the agreed for data collection. The purpose and nature of the research were explained to the students before administration of the questionnaire. Learners were then given questionnaires to fill in within 40 minutes and those who were

not able to complete within 40 minutes were added more time. The returned questionnaires were coded so that academic achievement from academic progress records may be added thereto.

3.11 Data Analysis

Data were analyzed quantitatively by use of statistical procedures in Statistical Package for Social Sciences (SPSS) (Version 21). The null hypotheses were tested at the 95% level of confidence and if the value of *p* was less than .05, then this study's null hypothesis was rejected and the alternative hypothesis accepted. The null hypotheses for each objective was tested using Pearson's correlation and regression analysis as indicated in the table below.

Table 3.3

Data Analysis

Null Hypothesis	Test	p-value
H_{01}: There is no significant relationship between academic self-concept and academic achievement	Pearson's *r*	.05
H_{02}: There is no significant relationship between academic motivation and academic achievement	Pearson's *r*	.05
H_{03}: There are no significant interrelationships between academic self-concept, academic motivation and academic achievement	Regression	.05

3.12 Logistical and Ethical Considerations

The following were the logistical and ethical considerations for this study:

3.12.1 Logistical Considerations

Through Kenyatta University the researcher sought a permit from the National Council for Science, Technology and Innovation. Thereafter, research permit copies were sent that have an attachment of notification letters to the County Director of Education, Kisumu East Sub-County Education Officer and to heads of schools sampled for the study.

3.12.2 Ethical Considerations

Ethical requirements such as confidentiality, autonomy, benevolence and fidelity were met in the process of data collection. Confidentiality was maintained by keeping the respondents anonymous by not writing their names on the questionnaires; autonomy was achieved by respecting respondents' freedom of choice to participate in the study; benevolence was attained through the benefits of the study, and fidelity by transcribing respondents' responses into the data used for the analysis in this study without alteration.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

In this chapter, we present the findings of the study, interpretation of the findings and discussions of the results in relation to the results of previous studies. It starts with general and background information and presentation of the results as per the study objectives.

4.2 General and Background Information

This sub section presents the questionnaire response rate and information on gender and SES of the parents/guardians.

4.2.1 Questionnaire Return Rate

The results of the questionnaire return rate is presented in Table 4.1.

Table 4.1

Questionnaire Return Rate

School Category	Schools Sampled	Questionnaires Administered		Return Rate			
		Boys	Girls	Boys	%	Girls	%
County Schools	2	35	35	34	97	29	83
Sub County	15	116	116	115	99	111	96
Sub total		151	151	149	99	140	93
Total	17	302		289			(96%)

Source: Research data (2021)

In the County Schools, 70 questionnaires were administered while 232 questionnaires were administered in Sub-County schools. To guarantee the quality of data collected, the researcher administered the questionnaires in person, explaining to the respondents what the research intended to achieve and how they were expected to respond. Out of the 302 questionnaires administered, 289 questionnaires were collected at the end of the exercise with a response rate of 96%, which was adequate for data analysis. Some of the questionnaires were not returned while others were excluded because they had many questions unanswered.

4.2.2 Gender of the Respondents

The questionnaires were distributed to the students selected using proportionate sampling from the two categories of schools in the Sub- County. The gender response rate was as shown in Table 4.2.

Table 4.2

Gender Response Rate

	f	%
Male	149	51.6
Female	140	48.4
Total	289	100.0

The results reveal that 149 of the respondents were males, representing 51.6% of the total respondents while 140 were females representing 48.4% of the total respondents. The

number of male respondents exceeded the females due to non-response from some male students. Further analysis on gender was also done based on the school category as shown in Table 4.3.

Table 4.3

Gender by School Category

		School category		Total
		Sub -County	County	
Gender	Male	115	34	149
	Female	111	29	140
Total		226	63	289

Table 4.3 shows that out of the 226 respondents from Sub- County schools, 115 (50.9%) were males while 111 (49.1%) were females. In County schools, 54% of the respondents were males while 46% were females.

4.2.3 Average Educational, Income and Occupational Level of Parents/Guardians

The researcher sought to find out the educational level, income level and occupational levels of the parents/guardians of the respondents and the results were as presented in Table 4.4.

Table 4.4

Average Educational, Income and Occupational Level of Parents/Guardians

Category	Educational Level		Income Level		Occupational Level	
	f	%	*f*	%	*F*	%
High	28	9.7	19	6.6	22	7.6
middle	219	75.8	57	19.7	74	25.6
Low	42	14.5	213	73.7	193	66.8
Total	289	100.0	289	100.0	289	100.0

Concerning the education level, the parents/guardians of majority of the respondents (75.8%) had middle level of education, 9.7% had attained high educational level while 14.5% had low level of education. Regarding the income level, 73.7% of the parents/guardians of the respondents were low-income earners while 6.6% were high income earners. Majority of the students (66.8%) indicated that the parents/guardians had low level of occupation while the minority (7.6%) had high level of occupation.

4.3 Relationship between Academic Self-Concept and Academic Achievement

The researcher sought to find out the association between academic self-concept and academic achievement of the respondents. This was done by conducting descriptive analysis of academic self-concept and academic scores. The data collected was then subjected to further analysis for hypothesis testing.

4.3.1 Academic Self-Concept Descriptive Statistics

The scores of the respondents on academic self-concept and academic achievement were analyzed to get the minimum score, maximum score, range, mean, standard deviation, skewness, and kurtosis. The findings are shown in Table 4.5.

Table 4.5

Descriptive Statistics of Academic Self-Concept Scores

	N	Min	Max	Range	*M*	*SD*	Sk	Kur
Academic Self-Concept	289	90.00	156.00	66.00	111.41	13.66	0.48	-0.21

The results indicate that the maximum score was 156 while the minimum score was 90. The mean score was 111.41 with a standard deviation of 13.66. The findings indicate that on the average the respondents had fairly high academic self-concept. The coefficient of skewness was 0.48, which implies that the academic self-concept scores were near normal distribution.

Academic self-concept was also analyzed based on gender. This was intended to bring out the differences in academic self-concept on either gender and the results are presented in Table 4.6.

Table 4.6

Academic Self-Concept Descriptive Statistics by Gender

Gender	*N*	Min	Max	*M*	*SD*	Sk	Kur
Male	115	91.00	156.00	111.79	13.48	0.45	-0.06
Female	111	90.00	145.00	111.00	13.88	0.53	-0.31

The results indicate that the maximum score for male students was 156 while that of female students was 145. The minimum score for the male respondents was 115 while that of the female students was 111. The mean score for the males was 111.79 while that of the females was 111. The standard deviation for the male respondents was 13.48 while that for the females was 13.88. These outcomes indicate that the boys had a slightly better academic self-concept compared to girls.

Descriptive analysis of academic self-concept was also done based on the school category. The results are summarized in Table 4.7.

Table 4.7

Academic Self-Concept Descriptive Statistics by School Category

School Category	*N*	Min	Max	Range	*M*	*SD*	Sk	Kur
Sub - County	226	90.00	145.00	55.00	110.80	13.79	0.52	-0.36
County	63	91.00	156.00	65.00	113.60	13.03	0.43	0.73

The results indicate that the maximum score for the self-concept of students from Sub-County schools was 145 while that of students from County schools was 156. The minimum score for the Sub County schools was 90 while that of the County schools was 91. The mean score was 110.80 for Sub County schools while that of the County schools was 113.60. The standard deviation for the Sub County schools was 13.79 while that of the County schools was 13.03. The findings show that the respondents had moderate self-concept irrespective of the school category. The coefficient of skewness was 0.52 for Sub County schools while that of the County schools was 0.43, which infers that self-concept scores were nearly symmetrical for the two categories of schools. The Kurtosis coefficient was -0.36 for Sub-County schools and 0.73 for County schools, which was less than three implying that the distribution of the scores was platykurtic.

The researcher further investigated the frequencies of the different levels of academic self-concept. The results are shown on Table 4.8.

Table 4.8

Levels of Academic Self-Concept

Category	*f*	%
Low	75	26.0
Average	161	55.7
High	53	18.3
Total	289	100.0

The results show that majority of the respondents representing 55.7% had average level of academic self-concept while those with low level of academic self-concept represented 26% of the sample size. Those with high level of academic self-concept represented 18.3%.

4.3.2 Academic Achievement Descriptive Statistics

Academic achievement of the students was measured using the average score of points in seven subjects in the end of term examination. In order to make the scores of academic achievement comparable across all the schools, the raw scores were standardized and the results are presented in Table 4.9.

Table 4.9

Description of Academic Achievement Standardized Scores

	N	Range	Min	Max	*M*	*SD*	Sk	Kur
Standardized scores of academic achievement	289	51.43	24.55	75.98	50.00	10.00	-0.03	-.40

The minimum standardized scores was 24.55 and the maximum scores was 75.98. The mean score was 50.00 while the standard deviation stood at 10.00. The coefficient of skewness stood at -0.03 while the kurtosis coefficient was -0.40 indicating an approximately normal distribution. The range of the standardized scores was 51.43 with

the minimum score being 24.55 and maximum score being 75.98. The mean of the scores was 50 (*SD* = 10).

Descriptive analysis of the academic achievement scores was also done on either gender and the results are shown in Table 4.10.

Table 4.9

Descriptive Statistics of Academic Achievement by Gender

Gender	*N*	Min	Max	*M*	*SD*	Sk	Kur
Male	115	24.55	75.98	50.38	9.68	0.04	-0.45
Female	111	25.28	73.04	49.29	10.09	-0.08	-0.38

For the male respondents, the minimum score was 24.55 while the maximum score was 75.98. The mean score for the academic achievement of male students was 50.38 while the standard deviation was 9.68. The coefficient of skewness was 0.04 while kurtosis coefficient was -0.45 indicating approximately normal distribution. For the female respondents, the minimum score was 25.28 while the maximum score was 73.04. The mean score for their academic achievement was 49.29 while the standard deviation stood at 10.09. The coefficient of skewness was 0.04 while kurtosis coefficient was -0.45.

Descriptive analysis was also conducted to test whether there was any significant difference in the performance based on school category. The results are shown in Table 4.11.

Table 4.11

Descriptive Statistics of Academic Achievement by School Category

School Category	*N*	Min	Max	*M*	*SD*	Sk	Kur
Sub County	226	24.55	73.04	48.74	10.19	0.07	-0.59
County	63	34.84	75.98	53.84	7.41	0.40	0.64

In the Sub County schools, the minimum score was 24.55 while the maximum score was 73.04. The mean score was 48.74 while the standard deviation was 10.19. The coefficient of skewness was 0.07 while that of kurtosis coefficient was -0.59. The results for the County schools shows that the minimum score was 34.84 while the maximum score was 75.98. The mean score was 53.84 while the standard deviation was 7.41. The coefficient of skewness was 0.40 while that of kurtosis was 0.64.

Academic achievement was categorized into three levels namely; low, average and high. Low academic achievement scores ranged from 0 to 40, average scores ranged from 41 to 59 and 60 and above indicated high academic achievement. The distribution of the respondents in the levels was as shown in Table 4.12.

Table 4.12

Levels of Academic Achievement

	f	%
Low	87	30.1
Average	183	63.3
High	19	6.6
Total	289	100.0

Table 4.12 shows the levels of academic achievement of the students. As shown in the table, majority of the respondents (63.3%) had an average score on academic achievement, followed by those with low academic achievement at 30.1%. Those with high academic achievement represented 6.6%.

4.3.3 Hypothesis Testing

In the first objective, the study aimed to if there is a significant relationship between academic self-concept and academic achievement among secondary school students. The researcher proposed the following null hypothesis.

H_{01}**:** There is no significant relationship between academic self-concept and academic achievement among secondary school students.

In order to achieve the above objective, academic self-concept and academic achievement scores were subjected to bivariate correlation analysis. The results are presented on Table 4.13.

Table 4.13

Correlation between Academic Self-Concept and Academic Achievement

		Academic Achievement
Academic Self-Concept	Pearson Correlation	.54**
	Sig. (2-tailed)	.00
	N	289

The results in Table 4.13 shows that there was a moderate, positive and significant correlation between academic self-concept of students and their academic achievement, r (289) = .54, $p < .05$. Therefore, the null hypothesis was rejected and the alternative hypothesis which stated that there is a significant relationship between academic self-concept and academic achievement was adopted. The results imply that the higher the academic self-concept the greater the academic achievement. These results agree with descriptive analysis findings which established that most of the students had average academic achievements since majority of them had average level of academic self-concept.

The researcher further tested whether there was a significant correlation between the domains of academic self-concept and academic achievement. The two variables (academic confidence and academic effort) were subjected to Pearson correlation test and the results were as shown in Table 4.14.

Table 4.14

Correlation between Domains of Academic Self-Concept and Academic Achievement

		Academic Achievement
Academic Confidence	Pearson Correlation	.44**
	Sig. (2-tailed)	.00
	N	289
Academic Effort	Pearson Correlation	.58**
	Sig. (2-tailed)	.00
	N	289

The results in Table 4.14 indicate that there was a moderate positive correlation between the academic confidence and academic achievement, r (289) =.44, $p < .05$. There was a strong positive correlation between academic effort and academic achievement, r (289) =.58, $p < .05$.

Regression analysis was done to establish whether academic self-concept can be used to predict academic achievement and the results were as shown in Table 4.15.

Table 4.15

Regression Model Summary for the Prediction of Academic Achievement from the Domains of Academic Self-Concept

Model	*R*	R^2	Adjusted R^2	SEE
1	.59[a]	.35	.34	7.99

a. Predictors: (Constant), AE, AC

Note. AE – Academic Effort; AC – Academic Confidence; Standard Error of the Estimate

The results from Table 4.15 indicates that the domains of academic self-concept moderately predict academic achievement, R =.59. The value of R^2 indicates that academic effort and academic confidence accounts for 35% of the total variance in student's academic achievement. Table 4.16 indicates the predictive weights of academic confidence and academic effort on academic achievement.

Table 4.16

ANOVA Summary for the Prediction of Academic Achievement from the Domains of Academic Self Concept

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	9790.44	2	4895.22	76.52	.00[b]
	Residual	18296.74	286	63.98		
	Total	28087.18	288			

a. Dependent Variable: T_Score

b. Predictors: (Constant), AE, AC

Note. AE – Academic Effort; AC – Academic Confidence

The results in Table 4.16 indicates that academic effort and academic confidence significantly predicted academic achievement, F (2, 286) = 76.52, P < .05. This implies that students who put more academic effort and those with high academic confidence perform better than those with low academic effort and low academic confidence.

Further analysis was done to come up with the predictive values of academic confidence and academic effort on academic achievement and the regression coefficients were as shown in Table 4.17.

Table 4.17

Regression Coefficients for the Prediction of Academic Achievement from the Domains of Academic Self Concept

Model	Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.
	β	Std. Error	Beta		
(Constant)	9.87	3.58		2.76	.01
Academic Confidence	.35	.13	.27	2.73	.01
Academic Effort	1.11	.14	.82	8.16	.00

From the results, academic confidence had a significant predictive weight, β =.35, $p < .05$. This indicated that academic confidence is a significant predictor of academic achievement. Academic effort was also a significant predictor of academic achievement, β =1.11, $p < .05$. The results indicate that academic effort was a better predictor of academic achievement than academic confidence. Academic achievement can be predicted from academic confidence and academic effort using the following equation;

$\hat{y} = 9.87 + 0.35\ AC + 1.11\ AE$ where $\hat{y}$ is predicted academic achievement, AC – Academic Confidence, AE – Academic Effort

Academic concept of the students was categorized into three levels namely; low, moderate and high. Post Hoc analysis was also conducted using Tukey's Honestly Significant Difference to determine which level of academic self-concept had a major impact on academic achievement. The results were as shown on Table 4.18.

Table 4.10

Level of Academic Self Concept and Academic Achievement

Level of academic Self Concept	N	Academic achievement Mean Score	SD
Low	75	46.73	8.70
Moderate	161	48.72	10.22
High	53	51.41	9.57
Total	289	50.00	10.00

From the results in Table 4.18, students with high level of academic self-concept scored the highest mean score while students with low level of academic self-concept scored the lowest mean score in academics. To establish if the mean differences were significant, ANOVA was conducted and the results are presented in Table 4.19.

Table 4.19

ANOVA for Mean Differences in Academic Achievement

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	1005.29	2	502.63	5.31	.01
Within Groups	27081.89	286	94.69		
Total	28087.18	288			

The outcomes in Table 4.19 indicate that there were significant mean differences in academic achievement scores based on academic self-concept level of the students, F (2, 286) = 5.31, $p < .05$). The value of the sum of the squares within the group was too large indicating a large degree of variability from the mean. This implies that there is a significant difference in academic achievement between the three groups. Table 4.20 shows the differences in academic achievement between each of the levels.

Table 4.11

Tukey HSD for the Academic Mean Scores

(I) Self-concept Levels	(J) Self-concept Levels	Mean Difference (I-J)	Std. Error	Sig.
Low	Average	-1.99	1.36	.12
	High	-4.68	1.74	.49
Average	Low	1.99	1.36	.12
	High	-2.69*	1.54	.01
High	Low	4.68	1.74	.48
	Average	2.69*	1.54	.01

The outcomes on Table 4.20 show that there was a significant mean difference in academic achievement of students with average academic self-concept and high academic self-concept. The mean differences between the other levels were not statistically significant.

4.3.4 Discussion of the Results

The first objective of the study was to establish whether there was a significant relationship between academic self-concept and academic achievement among secondary school students. The researcher subjected the academic self-concept and academic achievement scores to correlation analysis and the findings revealed a positive and significant relationship between the two variables. This findings support some of the literature reviewed. In India, Gayen and Bahera (2018) studied the self-concept of post-graduate students of different religions using survey design. This study discovered that a significant difference in self –concept existed among the post-graduate students based on the academic years that they were in. This demonstrates that regardless of level of study and culture, academic self-concept is an important construct in academic achievement. The findings were consistent with the postulations of the theory that informed this study. The perception that students have about their academic ability determines their effort to accomplish academic tasks and how they perform in academics.

Similar results were found by Mahakud and Joshi (2016) in a research carried out to establish whether a relationship existed between self-concept, academic achievement and

learning abilities in disabled primary school pupils in India. The results revealed that children who had learning disabilities had poor self-concept in comparison to skilled learners. As a result, the children who presented as having learning disabilities had poor academic performance than their counterparts. The results suggest that even at childhood, the belief that learners have regarding their academic ability is important in learning and academic achievement. This was demonstrated even among students without disability that self-concept is significantly related to academic scores. The current research found that a majority of the pupils had moderate level of academic self-concept. Therefore, the challenges of academic achievement experienced in the area of the study may be attributed to the moderate and low level of academic self-concept among a majority of the pupils.

Contrary findings have also been reported on the relationship between self-concept and academic achievement. Shepherd (2017) carried out a study to establish if there existed any relationship between self-concept and academic achievement in Mathematics and Science subjects among grade 9 students in South African Schools. Trends in Mathematics and Science study (2011) was used to get the data. This study found that in South Africa 80% of the poorest schools had Grade Nine girls who didn't experience any domain specific performance difference between motivation and self-concept.; contrary to a sample of girls drawn from different subsets in schools that were considered wealthy that were found to be underperforming in Mathematics and science subjects. These

findings are contrary to the findings of our study. The findings may be attributed to socio-economic status of the learners which was not investigated in the current study.

The results that academic confidence is significantly associated with academic achievement is supported by the research done by Njoki et al. (2019). The study established that students who were more confident performed better in academics than those who were less confident. However, the same researchers came up with a contrary conclusion that the academic effort negatively and insignificantly predicted the students' achievement. This can be attributed to the fact that there may be differences in the relationship between academic effort and academic achievement depending on the subject studied. For instance, the study by Njoki et al. focused on mathematics achievement while the current study looked at general academic achievement.

4.4 Relationship Between Academic Motivation and Academic Achievement

This sub-section presents the findings on the relationship between academic motivation and academic achievement. It starts with the descriptive statistics of academic motivation followed by hypothesis testing and then discussion of the results.

4.4.1 Academic Motivation Descriptive Statistics

The researcher analyzed the descriptive statistics of academic motivation in order to determine the mean score and dispersion. The formula to calculate academic motivation was adapted from Vallerand et al. (1992).

2{(know+acc+stim/3)} + iden – {(intro+reg/2) + 2amo}= Academic Motivation.

know = intrinsic motivation to know; acc = intrinsic motivation to accomplishments; stim = intrinsic motivation to experience stimulation; iden = 139 identification; intro = introjected regulation; external regulation; amo = amotivation.

This formula gave scores ranging from -18 (very little academic motivation) to +18 (high academic motivation). The results of the analysis were as shown in Table 4.21.

Table 4.12

Academic Motivation Descriptive Statistics

	N	Range	Min	Max	*M*	*SD*	*Sk*	*Kur*
Academic Motivation	289	15.83	-7.17	8.67	3.09	2.85	-0.53	0.34

The results indicate that maximum academic motivation score was 8.67 while the minimum score was -7.17. The mean score of the academic motivation scores was 3.09 with a standard deviation of 2.85. The coefficient of skewness was -0.53, which indicates that the academic motivation scores were approximately normally distributed. The kurtosis coefficient was 0.34 indicating that the distribution was platykurtic.

The researcher further conducted academic motivation descriptive statistics based on gender. Table 4.22 shows the results that were obtained.

Table 4.22

Academic Motivation Descriptive Statistics by Gender

Gender	Min	Max	Range	*M*	*SD*	*Sk*	*Kur*
Male	-3.42	8.50	11.92	3.42	2.79	-.29	-.45
Female	-7.17	8.67	15.83	2.74	2.87	-.77	.92

The outcomes indicate that the maximum score for male respondents was 8.50 while that of female students was 2.74. The minimum score for the male respondents was -3.42 while that for the female students was -7.17. The mean score for the male students was 3.42 while that for the female students was 2.74. The standard deviation for the male respondents was 2.79 while that for the female students was 2.87. The results indicate that male students achieved highly in academic motivation compared to females.

Further analysis was conducted to determine the description of academic motivation as per the school type. The researcher wanted to find out if there were differences in academic motivation in the different school categories involved in the study. The outcomes were as shown on Table 4.23.

Table 4.23

Academic Motivation Descriptive Statistics by School Type

School Category	Min	Max	Range	M	SD	Sk	Kur
Sub County	-7.17	8.67	15.83	2.10	2.89	-.59	.56
County	-2.83	8.25	11.08	4.04	2.74	-.24	-.60

The results indicate that the maximum score for academic motivation of students from Sub County schools was 8.67 while that of students from County schools was 8.25. The minimum score for the Sub County schools was -7.17 while that of students from County schools was -2.83. The mean score was 2.10 for the Sub County schools while that of the County schools was 4.04. The standard deviation for the Sub County schools was 2.89 while that of the County schools was 2.74. The findings indicate that on average the respondents from County schools scored better in academic motivation than respondents from Sub County schools. The coefficient of skewness was -0.59 for the Sub County schools while that of the County schools stood was -0.24. The Kurtosis coefficient was 0.56 for Sub County schools and -0.60 for County schools which was less than 3 implying that the distribution of the scores platykurtic.

The frequencies on the levels of academic motivation were also analyzed. Any student with a score ranging from -18 to -7 was considered as having low academic motivation, -

8 to 7 was considered to be average while 8 and above was considered to be high academic motivation. The findings were as presented in Table 4.24.

Table 4.24

Levels of Academic Motivation

Category	*f*	%
Low	98	33.9
Average	170	58.8
High	21	7.3
Total	289	100.0

As shown in the table, most of the respondents (58.8%) had average academic motivation, followed by those with low academic motivation represented 33.9%. Those with high academic motivation represented 7.3%. The results indicate that a majority of the students had average level of academic motivation.

The researcher also conducted descriptive analysis of the sub scales of academic motivation and the results were as shown in Table 4.25.

Table 4.25

Descriptive Statistics of Academic Motivation Sub Scales

	N	Range	Min	Max	Mean	*SD*	Sk	Kur
Intrinsic Motivation	289	57.00	13.00	70.00	48.09	10.26	-.27	-.51
Extrinsic Motivation	289	27.00	21.00	48.00	36.75	4.05	-.23	.91
Amotivation	289	12.00	5.00	17.00	12.65	2.07	-.37	.06

The results indicate that the mean score for intrinsic motivation was 48.09. The minimum score in this sub scale was 13 while the maximum score was 70. The mean score for extrinsic motivation sub scale was 36.75 (*SD* = 4.05). In this sub scale, the minimum score was 21 while the maximum score was 48. The minimum score in amotivation sub scale was 5 while the maximum score was 17. The mean was 12.65 (SD = 2.07). The results indicate that the students performed better in intrinsic motivation than the other two sub scales.

4.4.2 Hypothesis Testing

In the second objective, the researcher aimed to determine whether there exists a significant relationship between academic motivation and academic achievement among secondary school students. To achieve the following hypothesis was advanced;

H_{02} There is no significant relationship between academic motivation and academic achievement among secondary school students.

In order to determine the correlation between academic motivation and academic achievement, the researcher subjected academic motivation and academic achievement scores to bivariate correlation analysis. The results were as shown in Table 4.26.

Table 4.26

Correlation Between Academic Motivation and Academic Achievement

		Academic Achievement
Academic Motivation	Pearson Correlation	.57**
	Sig. (2-tailed)	.00
	N	289

The results show that there was a strong positive correlation between academic motivation of the students and academic achievement, r (289) =.57, $p < .05$. The alpha value of .00 indicates that the relationship is statistically significant. The null hypothesis was therefore rejected and the alternative one which stated that there is a significant correlation between academic motivation and academic achievement was adopted. The findings imply that the higher the academic motivation the greater the academic achievement. Therefore, students with high academic motivation had high academic achievement compared to those with low academic motivation.

To further understand this relationship, the researcher subjected the sub scales of academic motivation to Pearson correlation test to determine if they had an influence on academic achievement. Table 4.27 shows the findings of the analysis.

Table 4.27

Correlation between Domains of Academic Motivation and Academic Achievement

		Academic Achievement
Intrinsic Motivation	Pearson Correlation	.58**
	Sig. (2-tailed)	.00
	N	289
Extrinsic Motivation	Pearson Correlation	.45**
	Sig. (2-tailed)	.00
	N	289
Amotivation	Pearson Correlation	-.41**
	Sig. (2-tailed)	.00
	N	289

The results in Table 4.27 reveal that there existed a strong positive correlation between intrinsic motivation and academic achievement, r (289) =.58, $p < .05$. The relationship was statistically significant. The results also show that a moderate correlation existed between extrinsic motivation and academic achievement, r (289) =.45, $P < .05$. The correlation was statistically significant. On the amotivation domain, a moderate negative correlation was found between this sub scale and academic achievement, r (289) = -.41, $p < .05$. The results imply that high intrinsic and extrinsic motivation leads to high academic achievement while high amotivation leads to low academic achievement.

In order to determine if the domains of the academic motivation can be used to significantly predict academic achievement, regression analysis was done and the findings were as presented.

Table 4.28

Regression Model Summary for the Prediction of Academic Achievement from the Domains of Academic motivation

Model	*R*	R^2	Adjusted R^2	*SE*
1	.71[a]	.50	.49	7.01

a. Predictors: (Constant), Amotivation, Extrinsic Motivation, Intrinsic motivation

The results in Table 4.28 shows that amotivation, extrinsic motivation, intrinsic motivation domains strongly predict academic achievement, $R = .71$. The R^2 value shows that the academic motivation accounted for about 50% of the total variance in academic achievement. To establish if the domains of academic motivation significantly predicted academic achievement, were ANOVA test was conducted and the results were as shown in Table 4.29.

Table 4.29

ANOVA Summary for the Prediction of Academic Achievement from the Domains of Academic Motivation

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	14074.08	3	4691.36	95.41	.00[b]
	Residual	14013.09	285	49.16		
	Total	28087.17	288			

a. Dependent Variable: T Score

b. Predictors: (Constant), Amotivation, Extrinsic Motivation, Intrinsic Motivation

The results in Table 4.29 shows that amotivation, extrinsic motivation and intrinsic motivation significantly predicted academic achievement, F (3, 285) = 95.41, $p < .05$.

Further analysis was done to come up with the predictive values of intrinsic motivation, extrinsic motivation and amotivation on academic achievement and the results of the analysis were as shown in Table 4.30.

Table 4.30

Regression Coefficients for the Prediction of Academic Achievement from the Domains of Academic Motivation

Model		Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.
		β	Std. Error	Beta		
1	(Constant)	6.01	5.61		1.07	.28
	Intrinsic Motivation	.43	.04	.45	9.52	.00
	Extrinsic Motivation	.91	.10	.37	8.81	.00
	Amotivation	-.83	.22	-.17	-3.68	.00

a. Dependent Variable: Academic achievement

From the results, intrinsic motivation significantly predicts academic achievement, β =.43, *p* =.00. Extrinsic motivation was also a significant predictor of academic achievement, β = .91, *p* =.00. Amotivation had a negative significant predictive weight on academic achievement, β = -.83, *p* =.00. This implies that for every increase in one unit of amotivation domain, academic achievement decreases by – 0.83.

The prediction equation was as follows;

$\hat{y}$ = 0.43IM + 0.91 EM – 0.83A Amotivation where $\hat{y}$ is predicted academic achievement, IM – Intrinsic motivation, EM – Extrinsic Motivation and A – Amotivation.

Academic motivation was categorized into low, moderate and high. Post hoc analysis was conducted using Tukey's Honestly Significant Difference to determine how each level of academic motivation differed from one another in academic achievement. The results were as shown in Table 4.31.

Table 4.31

Academic Motivation Levels and Academic Achievement Mean Score

Academic Motivation Levels	*N*	Academic Achievement Mean Score	*SD*
Low level	98	43.79	10.23
Moderate level	170	52.19	6.25
High level	21	59.23	15.75
Total	289	50.00	10.00

From the results in Table 4.31, students with high level of academic motivation had the highest mean score while those with low level of academic motivation had the lowest mean score in academic achievement.

To establish if the mean differences were statistically significant, the scores were subjected to one-way ANOVA and the results are shown in Table 4.32.

Table 4.32

ANOVA for Academic Motivation Levels and Academic Achievement Mean Score

	Sum of Squares	*Df*	Mean Square	*F*	Sig.
Between Groups	6370.89	2	3185.45	41.95	.00
Within Groups	21716.29	286	75.93		
Total	28087.18	288			

The results in Table 4.32 show that there were significant mean differences in academic achievement scores of the students with different levels of academic motivation, F (2, 286) = 41.95, $p < .05$. These findings agree with those in Table 4.326, which revealed that there was a positive association between the academic motivation and academic achievement.

To establish how each of the groups differed in academic achievement, Tukey HSD was conducted and the results are presented in Table 4.33.

Table 4.33

Tukey HSD for Academic Motivation Levels and Academic Achievement Mean Score

(I) AM Levels	(J) AM Levels	Mean Difference (I-J)	Std. Error	Sig.
Low	Average	-8.39*	1.10	.00
	High	-15.43*	2.09	.00
Average	Low	8.39*	1.10	.00
	High	-7.03*	2.01	.00
High	Low	15.43*	2.09	.00
	Average	7.03*	2.01	.00

Note. AM – Academic Motivation

The outcomes in Table 4.33 show that there were significant mean differences in academic achievement across all the levels of academic motivation. The results imply that the level of academic motivation of students has a significant relationship with academic achievement.

4.4.3 Discussion of the Results

The second objective of the research was to determine if there is a significant relationship between academic motivation and academic achievement among secondary school students. The findings of the study revealed that the two variables were positively correlated. The correlation was statistically significant implying that the higher the academic motivation the higher the academic achievement. On the domains of academic motivation, the findings of the study revealed that there is a strong correlation between intrinsic motivation and academic achievement. A significant correlation was also

established between extrinsic motivation and academic achievement. The results suggest that students who are highly motivated either for personal reasons or because of external factors put more effort in academics which leads to better academic scores. A strong negative correlation existed between amotivation and academic achievement. This implied that students who were not motivated in any way performed poorly in academics. These findings generally implied that there is a significant relationship between the domains of academic motivation and academic achievements. The findings further revealed that the domains of academic motivation can be used to predict academic achievement.

These findings are consistent with the literature reviewed in chapter two. In the Philippines, Inocian et al. (2019) investigated the different levels of academic motivation and academic achievement of high school students in the Philippines. The results showed that academic motivation is essential for the students' academic achievement. The results of this study confirm the importance of academic motivation in academic achievement. The current study found that a majority of the students involved in the study had moderate levels of academic motivation which may explain why a majority of them were not performing well in academics.

Tokan and Imakulata (2019) who sought to investigate whether the performance of students in biology had a direct relationship with their extrinsic and intrinsic motivation reported similar findings. This study employed correlation research design and collected

data using a questionnaire and a document analysis guide. Their findings revealed that both intrinsic and extrinsic motivations affected achievement of students academically in biology education. Students who had high intrinsic and extrinsic motivation performed better in biology than those who had low intrinsic and extrinsic motivation. In line with the results of this study, academic motivation is a key psychological construct in learning regardless of the measure that is used to show the extent of academic achievement.

Similar studies have been conducted in Kenya and the results support the findings of the present study. In Kisumu County, Odanga (2018) sought to identify the strategies for increasing intrinsic motivation for academic improvement among secondary school students using a sample of secondary school students. The study found out that intrinsic motivation factors improved students' academic achievement, which is similar to the findings of this study. The results imply that students with high intrinsic motivation perform better than those with low achievement motivation. Highly motivated students create more time to concentrate on their studies and put more effort to accomplish learning goals. Such efforts lead to improved academic achievement.

Njoki et al. (2019) in their research reported similar findings on the relationship between academic motivation and academic achievement in Mathematics. The researchers used four scales of academic motivation including perceived probability of success, interest in learning mathematics, satisfaction and relevance. Their study found that academic motivation positively and significantly predicted mathematics achievement. Out of their

four domains, satisfaction in learning mathematics was the best predictor of achievement in mathematics, which is similar intrinsic motivation. The current study revealed that intrinsic motivation is the best predictor of academic achievement. The results also confirm the value of academic motivation in academic achievement.

4.5 Interrelationship Between Academic Self-Concept, Academic Motivation and Academic Achievement

In the third objective, the researcher aimed to investigate the interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students. To achieve this, the researcher explored the descriptive statistics of academic self-concept, academic motivation and academic achievement followed by hypothesis testing and then discussion of the findings.

4.5.1 Descriptive Statistics of Academic Self-Concept and Academic Motivation

The respondents' self-concept scores were analyzed using descriptive statistics to determine the minimum score, maximum score, the range, the mean, standard deviation, coefficient of skewness and kurtosis coefficient. Table 4.34 shows the results of the findings.

Table 4.34

Academic Self-Concept Descriptive Statistics

	N	Min	Max	Range	*M*	*SD*	Sk	Kur
Academic Self-Concept	289	90.00	156.00	66.00	111.41	13.66	0.48	-0.21

The results show that the minimum score was 90 while the maximum scores was 156. The mean score was 111.41 while the standard deviation was 13.66. The researcher further found out that the coefficient of skewness was 0.48 while the kurtosis coefficient stood at -0.21.

The researcher examined the students' self-concept based on gender in order to establish if gender significantly moderated the prediction of academic achievement. Table 4.35 shows the results.

Table 4.35

Academic Self-Concept Descriptive Statistics by Gender

Gender	*N*	Min	Max	*M*	*SD*	Sk	Kur
Male	115	91.00	156.00	111.79	13.48	0.45	-0.06
Female	111	90.00	145.00	111.00	13.88	0.53	-0.31

From the results obtained in Table 4.35, the mean score of boys was 111.79 (*SD* = 13.48) while that of the girls was 111 (*SD* = 111). The results indicate that the boys perform better than the girls in academic self-efficacy.

Analysis of self-concept based on school category was also done because the study aimed to find out how school category moderated the prediction of academic achievement. Table 4.36 shows the results from the analysis.

Table 4.36

Academic Self-Concept Descriptive Statistics by School Category

School Category	*N*	Min	Max	Range	*M*	*SD*	*Sk*	*Kur*
Sub County	226	90.00	145.00	55.00	110.80	13.79	0.52	-0.36
County	63	91.00	156.00	65.00	113.60	13.03	0.43	0.73

Although Sub County schools a had higher number of respondents at 226 compared to the 63 from County schools, the final results as shown in Table 4.36 indicate that students from County schools had a higher mean score of 113.60 (*SD* = 13.03) than students from day schools who scored a mean of 110.80 (*SD* = 13.79).

Descriptive analysis was also conducted on academic motivation scores in order to determine the range, minimum score, maximum score, mean score, standard deviation score, skewness and kurtosis and results obtained are shown in Table 4.37.

Table 4.37

Academic Motivation Descriptive Statistics

	N	Range	Min	Max	*M*	*SD*	Sk	Kur
Academic Motivation	289	15.83	-7.17	8.67	3.09	2.85	-0.53	0.34

The range of academic motivation scores was 15.83 and the mean score was 3.09. The minimum and maximum scores were -7.17 and 8.67 respectively. The coefficient of skewness indicated approximately normal distribution while the kurtosis coefficient displayed a platykurtic distribution (scores lying around the median).

The analysis done to ascertain whether there were gender differences in academic motivation revealed the findings in Table 4.38.

Table 4.38

Academic Motivation Descriptive Statistics by Gender

Gender	*N*	Min	Max	Range	*M*	*SD*	Sk	Kur
Male	115	-3.42	8.50	11.92	3.42	2.79	-.29	-.45
Female	111	-7.17	8.67	15.83	2.74	2.87	-.77	.92

The outcomes indicate that the mean score for male and female respondents were 3.42 and 2.74 respectively. The boys had a higher mean score in academic motivation compared to the girls.

Analysis was also done to check if there were differences in academic motivation based on school category and how it affected the prediction of academic achievement. The findings were as indicated in Table 4.39.

Table 4.39

Academic Motivation Descriptive Statistics by School Type

School Category	*N*	Min	Max	*M*	*SD*	Sk	Kur
Sub County	226	-7.17	8.67	2.89	2.89	-0.59	.56
County	63	-2.83	8.25	4.04	2.74	-0.24	-.60

The mean score for Sub County schools was 2.89 while that for the County schools was 4.04. The coefficient for kurtosis for Sub County schools was 0.56 while that of County schools was -0.60, both displaying platykurtic distribution. The results reveal that on average the respondents from County schools had higher mean score in academic motivation than those from Sub County schools. The coefficient of skewness was -0.59 for Sub County schools while that of the County schools was -0.24 implying that in the two categories of schools, the scores were near normal distribution.

4.5.2 Hypothesis Testing

In this third section of hypothesis testing, the researcher investigated whether there exists a significant interrelationship between academic self-concept, academic motivation and

academic achievement among secondary school students. This was achieved by testing the following hypothesis:

H_{03}: There is no significant interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students.

Moderated multiple regression analysis was conducted to investigate whether academic motivation and academic self-concept can be used in predicting academic achievement taking gender and school category as moderator variables. Table 4.40 shows the outcomes.

Table 4.40

Model Summary for the Prediction of Academic Achievement

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
1	.68[a]	.46	.46	7.24
2	.69[b]	.48	.47	7.19

Note. a. Predictors: (Constant), AM, ASC
b. Predictors: (Constant), AM , ASC, Gender , School category
AM- Academic motivation; ASC- Academic self-concept;

The results in Table 4.40 shows that academic self-concept and academic motivation significantly predict academic achievement, $R = 0.68$. R^2 was .46 which means that 46% variance in academic achievement can be explained by academic self-concept and

academic motivation. This infers that the academic motivation and academic self-concept can be used in predicting academic achievements.

In model 2, the predictor variables were academic self-concept, academic motivation, gender and school category. The results indicated a strong positive relationship between the predictor variables and academic achievement as indicated by the value of R=.69. The R^2 value shows that gender and school category accounts for 2% variance in the prediction of academic achievement from academic self-concept and academic motivation.

The researcher investigated whether both academic self-concept and academic motivation can significantly predict academic achievement using model 1, and whether the inclusion of both gender and school type significantly influence this prediction using model 2. The results are shown on Table 4.41.

Table 4.41

ANOVA Summary for the Prediction of Academic Achievement

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	13058.17	2	6529.08	124.24	.00[b]
	Residual	15029.01	286	52.54		
	Total	28087.17	288			
2	Regression	13386.44	4	3346.61	64.65	.00[c]
	Residual	14700.73	284	51.76		
	Total	28087.18	288			

a. Dependent Variable: T Score

b. Predictors: (Constant), AM, SC

c. Predictors: (Constant), AM, SC, Gender , School category

From Table 4.41, academic self-concept and academic motivation were used to predict academic achievement. The results (F (2, 286) = 124.24, $p < .05$) show that self-concept and academic motivation significantly predict academic achievement. In model 2, both gender and school type were included in determining whether they can significantly predict academic achievement. The results (F (4, 284) = 64.65, $p < .05$) show that when gender and school type were included, still academic self-concept and academic motivation significantly predict academic achievement.

The researcher conducted regression analysis to come up with prediction equation for academic achievement from academic self-concept, academic motivation, gender and school category. The results were as shown in Table 4.42.

Table 4.42

Regression Coefficients for the Prediction of Academic Achievement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	(Constant)	-5.66	3.72		-1.51	.13
	ASC	.28	.03	.39	8.67	.00
	AM	.19	.02	.44	9.64	.00
2	(Constant)	-6.18	4.01		-1.53	.12
	ASC	.28	.03	.39	8.64	.00
	AM	.18	.02	.42	9.20	.00
	Gender	-.78	.84	-.04	-.92	.35
	School category	2.41	1.04	.10	2.31	.02

a. Dependent Variable: Academic Achievement

Note. AM- Academic Motivation; ASC- Academic Self Concept;

In model 1, academic self-concept had β = .28, p = .00 which indicated that academic self-concept is a significant predictor of academic achievement. Academic motivation had a β = .19, p = .00 indicating that it is a significant predictor of academic achievement.

In model 2, the regression coefficient of gender was β =.-78, p = .35. This was statistically insignificant because the p = .35 is greater than significance p = .05. The school category coefficient (β = 2.41, p = .02) is a significant predictor of academic achievement.

Regression equations;

Model 1 : $\hat{y}$ = 0.28 ASC + 0.19 AM

Model 2 : $\hat{y}$ = 0.28 ASC + 0.18 AM + 2.41 School category

Where $\hat{y}$ is predicted academic achievement, AM- Academic Motivation and ASC-

Academic Self Concept

The results suggest that a unit change in academic self-concept leads to 0.28 change in academic achievement. For academic motivation, a unit change in this variable leads to 0.19 and 0.18 change in academic achievement for model 1 and model 2 respectively. School category is associated with 2.41 change in academic achievement.

The researcher further investigated the interrelationships between the domains of academic self-concept, academic motivation and academic achievement by running further regression analysis. The results are shown on Table 4.43.

Table 4.43

Model Summary Interrelationships Between the Domains of Academic Self-Concept, Academic Motivation and Academic Achievement

Model	*R*	R^2	Adjusted R^2	*SE*
1	.78[a]	.61	.60	6.22

a. Predictors: (Constant), Amotivation, Academic confidence, Intrinsic motivation, extrinsic motivation, academic effort

The results presented in Table 4.43 shows a strong positive relationship between amotivation, academic confidence, intrinsic motivation, extrinsic motivation, academic effort and academic achievement, R =.78. The R^2 value shows that the domains of academic self-concept and academic motivation variable accounted for about 61% of the total variance in academic achievement.

To find out if the domains significantly predicted academic achievement, ANOVA was conducted and the results are presented in Table 4.44.

Table 4.44

ANOVA Summary for the Domains of Self-Concept and Motivation

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	17106.85	5	3421.37	88.18	.00[b]
	Residual	10980.32	283	38.80		
	Total	28087.17	288			

a. Dependent Variable: Academic achievement

b. Predictors: (Constant), Amotivation, Academic confidence, Intrinsic motivation, extrinsic motivation, academic effort

The regression analysis shown in Table 4.44 indicates that the domains of academic self-concept and academic motivation significantly predict academic achievement, F (5, 283) = 88.18, $p < .05$). These findings imply that there is a significant interrelationship between academic achievement and the predictors (amotivation, academic confidence, intrinsic motivation, extrinsic motivation, academic effort).

Multiple linear regression analysis was done to determine the predictive values of each of the five predictors (amotivation, academic confidence, intrinsic motivation, extrinsic motivation and academic effort) on academic achievement and the findings were as shown in Table 4.46.

Table 4. 45

Regression Coefficients of the Domains of Self Concept and Motivation

Model		Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.
		β	Std. Error	Beta		
1	(Constant)	-4.51	5.12		-.88	.379
	Academic confidence	.34	.11	.26	3.12	.00
	Academic effort	.77	.11	.57	6.91	.00
	Intrinsic Motivation	.33	.04	.34	7.94	.00
	Amotivation	-.78	.20	-.16	-3.93	.00
	Extrinsic motivation	.69	.10	.28	6.45	.00

a. Dependent Variable: Academic achievement

The outcomes shown in Table 4.47 indicates that academic confidence had β =.34, *p* =.00, which implied that it is a significant predictor of academic achievement. Academic effort had β =.77, *p* =.00, implying that it is a significant predictor of academic achievement. Intrinsic motivation had β =.33, *p* =.00, implying that it is a significant predictor of academic achievement. Extrinsic motivation had β =.69, *p* =.00, implying that it is a significant predictor of academic achievement. Amotivation had β =-.78, *p*

=.00, implying that it is a significant predictor of academic achievement. The negative beta value implies that for every increase in one unit of amotivation domain, academic achievement decreases by 0.78.

The prediction equation of academic achievement from the sub scales was as follows:

$\hat{y} = 0.34\ AC + 0.77\ AE + 0.33\ IM - 0.78A + 0.69\ EM$

Where $\hat{y}$ is predicted academic achievement, AC is academic confidence, AE is academic effort, IM is intrinsic motivation, A is amotivation and EM is extrinsic motivation.

4.5.3 Discussion of Results

The third objective of this research was to determine if there is an interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students. The findings from the analysis showed a strong positive interrelationship between academic motivation and academic self-concept in predicting academic achievement. This implies that academic motivation and academic self-concept can be used in predicting academic achievement. There was a strong positive relationship between the predictors (academic self-concept, academic motivation, and gender and school category) and academic achievement. The results showed a strong positive relationship between amotivation, academic confidence, intrinsic motivation, extrinsic motivation, academic effort and academic achievement. The implication is that the domains of academic self-concept and academic motivation significantly predict

academic achievement. This means that if students' academic motivation and academic self-concept can be enhanced, this will improve their academic achievement.

Results from the previous studies are consistent with the above findings. A study done by Asakereh and Dehghannezhad (2016) in Iran investigated the relationships between student self-beliefs and English speaking skills achievement and found similar results. Their findings showed that self-beliefs had significant positive correlations with speaking skills achievement. The variables significantly predicted achievement in speaking skills. Learners with high self-beliefs performed better in speaking skills achievement compared to learners with low self-beliefs.

Another study by Sumbwanyambe (2017) assessed some factors that led to female secondary school students in Lusaka to perform poorly and reported same results. This study revealed that motivational practices influenced the pupils' academic performance. However, like in the case of other studies from other parts of the world, the study did not consider all the variables under study here, which are motivation, academic self-concept and a motivation. The current study examined how academic motivation and academic self-concept jointly predict academic achievement among secondary school students to address the gap that existed. Based on the results obtained, if students' academic motivation and academic self-concept were jointly enhanced, this can lead to improvement in academic achievement.

Similar results were posted by Njoki et al. (2019) while studying academic self-concept, motivation and resilience as predictors of mathematics achievement. They found results that are congruent with findings of the current research. Multiple regression analysis results revealed that the three variables collectively and significantly predicted mathematics achievement. In the current study, it was found that a majority of the student had moderate and low academic self-concept and academic motivation, a factor that may be associated with academic achievement challenges in the area of the study. According to the achievement theory of motivation, the way individuals perceive themselves determines the effort they invest to achieve their goals. In this regard, students who have high self-concept and academic motivation put more effort to attain high scores in academic achievement.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, we present the summary of the findings, conclusions based on the findings of the study and study objectives and recommendations.

5.2 Summary of the Findings

The main objectives of this study were to establish the relationship between academic self-concept and academic achievement; determine the relationship between academic motivation and academic achievement, and find out the interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students. The summary of the findings is presented based on the three objectives of the study.

On the relationship between academic self-concept and academic achievement, the findings revealed the existence of a significant positive relationship between the two variables. It was noted that majority of the students had low and moderate academic self-concept as depicted by the mean score.

On the level of academic self-concept, majority of the respondents had average level of academic self-concept. Further investigations done to test whether gender had an

influence on academic self-concept and academic achievement, the results revealed an insignificant disparity, which was inconsequential in the overall interpretation of the results. Analysis done to investigate whether the academic self-concept based on the school category influenced academic performance, it was noted that County schools' students had higher academic self-concept compared to those of Sub County schools.

Further analysis revealed that majority of the students had an average score in academic achievement. The correlation analysis conducted to test the relationship between the two variables indicated the existence of a positive correlation between academic self-concept and academic achievement amongst the students. This implies that the higher the academic self-concept the greater the academic achievement. Regression analysis conducted revealed that academic self-concept is a strong predictor of academic achievement. It was also noted that students with high level of academic self-concept performed better than those with lower level of academic self-concept.

Concerning the relationship between academic motivation and academic achievement, the descriptive statistics of academic motivation revealed moderately skewed scores with many scores lying around the median (platykurtic distribution). The mean score obtained revealed academic motivation scores of most of the students were average. The correlation analysis done showed a strong correlation between academic motivation and academic achievement. The findings infer that the higher the academic motivation the greater the academic achievement. Further analysis done to investigate whether gender

had an effect on academic motivation and academic achievement discovered a mean score of 124.20 for the male respondents and 124.04 for the female respondents indicating a minimal and inconsequential disparity in the overall interpretation of results. Correlation analysis done on the domains of academic motivation against academic achievement indicated a strong positive correlation between intrinsic motivation and academic achievement, moderate correlation between extrinsic motivation and academic achievement and a moderate negative correlation between amotivation and academic achievement which implies that higher amotivation results in decrease in academic achievement. The analysis done to test the difference in academic motivation in Sub County schools and County schools revealed a small disparity. The regression analysis done on the academic motivation domains revealed a strong positive relationship with academic achievements implying that the domains can be used in predicting academic achievement.

Further analysis done on the level of academic motivation amongst the respondents revealed that majority had average academic motivation and a few had high level of academic motivation. The one-way ANOVA test conducted revealed significant mean differences in academic achievement scores with different levels of academic motivation. The findings show that students with high level of academic motivation performed better than those with low academic motivation. Furthermore, students with high intrinsic motivation performed better than those with high extrinsic motivation. Descriptive analysis revealed that most of the students in both Sub County and County schools

performed better in school for personal gains or personal rewards. Regression analysis done on the academic motivation domains showed that both intrinsic and extrinsic motivation had positive beta coefficient values indicating an increase in any of the two results in an increase in academic achievement. Amotivation registered a negative beta coefficient value implying that for every increase in amotivation domain, the academic achievement decreases by equal measure. These findings from the three domains of academic motivation show that they can be used as significant predictors of academic achievement. One way ANOVA test conducted on the levels of academic motivation avers significant mean differences in academic achievement scores of students with different levels of academic motivation.

Regarding interrelationship between academic self-concept, academic motivation and academic achievement, the regression analysis conducted to investigate whether academic motivation and academic self-concept significantly predict academic achievement revealed a strong positive relationship between academic motivation and academic self-concept and academic achievement. This implies that academic motivation and academic self-concept can be used in predicting academic achievement among students. When the predictors -academic self-concept, academic motivation, gender and school category- were tested to confirm whether they can predict academic achievement, the results indicated a strong positive relationship between them.

The R^2 value shows that gender and school category accounts for 2% variance in the prediction of academic achievement from academic self-concept and academic motivation. However, the regression coefficients revealed that the regression coefficient of gender was not statistically significant in predicting academic achievement. Further investigations conducted to test the interrelationships between the domains of academic self-concept, academic motivation and academic achievement revealed a strong positive relationship between amotivation, academic confidence, intrinsic motivation, extrinsic motivation, academic effort and the variable academic achievement. These findings imply that there is a significant interrelationship between academic achievement and amotivation, academic confidence, intrinsic motivation, extrinsic motivation and academic effort.

5.3 Conclusion

The study sought to find out the relationships between academic self-concept, motivation and academic achievement among students in Kisumu East Sub-County.

The first objective of the study was to establish whether there was a relationship between academic self-concept and academic achievement among secondary school students. The results from our analysis indicates a significant positive correlation. This implies that the higher the self-concept, the higher the academic achievement score. The secondary school students with high self-concept were found to perform better than those with low self-concept in academic achievement.

The second objective of the research was to determine if there was a significant relationship between academic motivation and academic achievement. The results of the study revealed a positive significant relationship between academic motivation and academic achievement.

In the third objective, the researcher was interested in determining if there was an interrelationship between academic self-concept, academic motivation and academic achievement among secondary school students. The results show that academic self-concept and the domains of academic motivation (amotivation, intrinsic motivation, extrinsic motivation) including academic confidence and academic effort significantly predict academic achievement.

5.4 Recommendations

Based on the study findings, the following recommendations were made on education practice and further research in this field.

5.4.1 Policy Recommendations

i. The study recommended that teachers need to put more emphasis on the already existing ways of helping learners improve on their academic motivation levels in order to improve their academic achievement.

ii. The teachers, student counsellor and school principals need to help learners in development of academic self-concept and academic motivation to improve academic achievement.

iii. The ministry of education should enhance school programs integrated in the course content to promote students' academic self-efficacy and academic motivation in order to enhance learning and academic achievement in secondary schools.

5.4.2 Recommendations for Further Research

i. A similar study can be conducted using mixed method approach in other sub Counties in Kenya.

ii. The study focused on secondary school students in Sub County and County schools in Kisumu East Sub-County. A Similar study can be carried out in other sub-counties in Kisumu County for purposes of generalization of results.

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APPENDICES

APPENDIX A: LETTER OF CONSENT FOR STUDENTS

LETTER OF CONSENT

Department of Educational

Kenyatta University

Dear Student,

My name is Naomi Kemunto Ondieki, a Master of Education (Guidance and Counselling) student at Kenyatta University. I am conducting a study into relationships between academic self-concept, motivation and academic achievement among secondary school students in Kisumu County, Kenya. The findings of this study might contribute in developing ways of improving students' performance. Steps will be taken to protect your anonymity and identity such as you not writing your name on the questionnaire nor will the researcher mention your name as a participant in this research.

I have read the above information regarding this research study on relationships between academic self-concept, motivation and academic achievement among secondary school students in Kisumu County, Kenya, and consent to participate in this study.

(Name) _____

(Signature) _____

(Date)

APPENDIX B: DEMOGRAPHIC AND ACADEMIC ACHEIVEMENT

SECTIONS OF QUESTIONNAIRE

Instructions

This is not an examination. This is a questionnaire seeking to investigate the relationships between academic self-concept, motivation and academic achievement among secondary school students in Kisumu County, Kenya.

Kindly read the items carefully and respond in a way that reflects your position as accurately as possible by putting a tick or mark on your response.

Demographic Section (Tick or mark appropriately)

1. Sex
   Male ☐ Female ☐

2. Category of school
   Sub-County ☐ County ☐

3. Socioeconomic status

	High	**Middle**	**Low**
What is the average **Educational** level of the parents/guardians who take care of you where you spend most of your time away from school?			
What is the average **Income** level of the parents/guardians who take care of you where you spend most of your time away from school?			
What is the average **Occupational** level of the parents/guardians who take care of you where you spend most of your time away from school?			

Academic Achievement Section

Student's Code	Total Marks	Aggregate Grade

APPENDIX C: ACADEMIC SELF CONCEPT SCALE

Kindly indicate 1= strongly Disagree, 2 = Disagree, 3 = Agree 4 = Strongly agree, about the items below as is applicable to you

ITEM	Strongly Disagree	Disagree	Agree	Strongly agree
1. Its fulfilling being a student	1	2	3	4
2. In case I put in extra effort I will attain a good score	1	2	3	4
3. I get appreciated for the effort I put in school	1	2	3	4
4. However much effort I put in my studies I never do well	1	2	3	4
5. It doesn't surprise me when I don't do well in exams	1	2	3	4
6. I still feel I have the ability to do well	1	2	3	4
7. Because I give my studies a lot of time I am able to do well	1	2	3	4
8. My parents don't feel contented with my grades	1	2	3	4
9. People view me as intelligent	1	2	3	4
10. I understand most subjects easily	1	2	3	4
11. I get feelings of dropping out of school sometimes	1	2	3	4
12. A majority of individuals in my class bit me in school	1	2	3	4

13. Most teachers that teach us think am a smart student	1	2	3	4
14. Sometimes I feel it's hard being in high school	1	2	3	4
15. Am still confident in my high school grades.	1	2	3	4
16. I believe in myself majority of the time I take my exams	1	2	3	4
17. I am able to assist my classmates in their work	1	2	3	4
18. The teachers have set very high standards for me	1	2	3	4
19. Its not easy for me to follow up on my classwork	1	2	3	4
20. Whenever I hand in work for marking am contented with it	1	2	3	4
21. There are times I feel like I have failed	1	2	3	4
22. I get the feeling that I don't read well before exams	1	2	3	4
23. I find exams to cheap	1	2	3	4
24. I am not confident that I will pass my K.C.S.E	1	2	3	4
25. If I work hard its rewarding	1	2	3	4
26. I find it difficult staying in school	1	2	3	4
27. I stand out when it comes to planning my time	1	2	3	4
28. Am fairly aware of what I need academically	1	2	3	4

29. I would wish to be a better learner than I am now	1	2	3	4
30. I become discouraged about school	1	2	3	4
31. I find it pleasurable doing my homework	1	2	3	4
32. I look at myself as a smart learner	1	2	3	4
33. My get good grades in my subjects	1	2	3	4
34. I don't read as much as a supposed to	1	2	3	4
35. By end of the week I feel I have done my best in my work	1	2	3	4
36. Some people think am smart	1	2	3	4
37. I am smarter than an average high school student	1	2	3	4
38. My classmates understand better some subjects than I do	1	2	3	4
39. My ability does not match the core subjects that I need in my university cluster entry.	1	2	3	4
40. My reading habits are bad	1	2	3	4

APPENDIX D: ACADEMIC MOTIVATION SCALE

Using the scale below, indicate to what extent each of the following items presently resembles one of the reasons why you go to school.

Does not correspond at all	***Corresponds a little***		***Corresponds moderately***	***Correspon ds a lot***		***Corresponds Exactly***
1	***2***	***3***	***4***	***5***	***6***	***7***

I am going to school because?	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. I am working to get a good secondary school certificate in order to be admitted for a competitive course in the university							
2. I find it to be fun when my teachers or fellow students teach me something new							
3. I think my secondary school education helps me prepare for the choice of course I will take at the university							
4. I really enjoy going to school							
5. Sometimes I feel like am not making good use of my time when am at home							
6. It becomes enjoyable when i score grades higher than my set targets in exams							
7. I need to convince myself that am able to finish my secondary school							
8. I would like to get good scores in my KCSE exams							
9. I find it more fun when I know new things							
10. I will be able to get a good grade and join the university of my choice							

11. I enjoy being in school							
12. Initially I had several good reasons to attend secondary school, I don't know if I should continue believing in them							
13. I find it enjoyable when I score higher than my desired grade.							
14. If I do well in my exams I will feel like am a very great person in this life							
15. I would want to be admitted to the best course in the university							
16. I find it fun in learning new topics in my best subjects							
17. This will make me choose the right course in the field of study that I want							
18. I feel fun when most of my time is taken learning what I love.							
19. Every sibling of mine is attending school							
20. Its fulfilling when am trying to finish hard assignments.							
21. I am proofing to myself that am a bright student							
22. I want to be mentioned among the top students in the country in my KCSE							
23. Being in class gives me the chance to know new things every time.							
24. I believe staying in school for my last two years in secondary will have a positive impact on my grade.							
25. I feel very nice studying topics that interest me.							
26. My parents paid fees for me to be here							

27. Being in school makes me feel like I am happy and working towards good grades							
28. I want to proof that I can excel academically							

APPENDIX E: PERMISSION BY VALLERAND ET AL TO USE THE AMS

Hello,

Please find in attached file the **ACADEMIC MOTIVATION SCALE (AMS) – College Version**. You'll be able to find the other AMS versions (High School, Elementary) on our website: https://www.lrcs.uqam.ca/en/scales/

The key for AMS is at the end of the scale, also these 3 articles (in the attached documents) will help you **interpret this scale**.
Make sure to cite the appropriate reference in your work:
Vallerand, R.J., Blais, M.R., Brière, N.M., & Pelletier, L.G. (1989). Construction et validation de l'Échelle de Motivation en Education (EME). Revue canadienne des sciences du comportement, 21, 323-349.

Hoping to reach your satisfaction.

Take care,

APPENDIX F: PERMISSION BY REYNOLDS ET AL TO USE THE ASCS

William M Reynolds <william.reynolds@humboldt.edu> Wed, Jun 2, 8:45 PM

to me

Dear Naomi,

My apology for the delay. Attached is a copy of the ASCS and a short form (along with information on this form). You have my permission to translate and use either of these measures.

Good luck with your research,

Bill Reynolds

On Tue, Apr 27, 2021 at 9:40 PM Naomi Kemunto <n_kemunto@riaraschools.ac.ke> wrote:
Good Morning? My name is Kemunto Naomi a student from Kenyatta University taking Masters in Education. One of the tools I chose to use was Academic self-concept which was authored by you. I appreciate your good work. My request is for you to grant me permission to use the tool for my study and kindly share the original version in English. Thank you.

3 Attachments

Thank you very much.

Thanks a lot.

This is great, thank you so much!

Reply Forward

APPENDIX I: KCSE PERFORMANCE STATISTICS OF SUB-COUNTIES IN KISUMU

SUB – COUNTY	2017	2018	2019
Nyakach	4.15	4.13	4.34
Kisumu Central	4.60	4.78	5.25
Nyando	3.57	3.88	4.20
Muhoroni	4.60	4.18	4.64
Seme	3.51	3.85	4.23
Kisumu West	4.23	4.62	5.01
Kisumu East	3.03	3.21	3.33

Source: Kisumu County Education Office (2020)

APPENDIX J: RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **648536**

Date of Issue: **13/January/2022**

RESEARCH LICENSE

This is to Certify that Ms.. Naomi Kemunto Ondieki of Kenyatta University, has been licensed to conduct research in Kisumu on the topic: RELATIONSHIP BETWEEN ACADEMIC SELF-CONCEPT, MOTIVATION AND ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN KISUMU COUNTY, KENYA for the period ending : 13/January/2023.

License No: **NACOSTI/P/22/15195**

648536

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

APPENDIX K: RESEARCH AUTHORIZATION LETTERS

OFFICE OF THE PRESIDENT

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telephone: Kisumu 2022219/Fax: 2022219
Email: ckisumucounty@gmail.com

COUNTY COMMISSIONER
KISUMU COUNTY
P.O. BOX 1912-40100
KISUMU.

Ref: CC/KC/R.ES/1//3/VOL.IV (246)

Date: 20th January, 2022

ALL DEPUTY COUNTY COMMISSIONERS
KISUMU COUNTY

RE: RESEARCH AUTHORIZATION – MS. NAOMI KEMUNTO ONDIEKI

Reference is made to a letter from the National Commission for Science, Technology and Innovation no. NACOSTI/P/22/15195 of 13th January, 2022 on the above underlined subject matter.

The above named is from Kenyatta University. She has been authorized to carry out a research on ***"Relationship between Academic Self-Concept, Motivation and Academic Achievement among Secondary School Students in Kisumu County."*** The research period ends on 13th January, 2023.

Kindly accord her the necessary assistance.

JOSEPHINE OUKO
COUNTY COMMISSIONER
KISUMU COUNTY.

Cc: Ms. Naomi Kemunto Ondieki
Kenyatta University.

REPUBLIC OF KENYA

MINISTRY OF EDUCATION
State Department of Early Learning and Basic Education

Telegrams:"schooling",Kisumu
Telephone: Kisumu 057 - 2024599
Email:
countyeducation.kisumu@gmail.com

When replying please quote

COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY
PROVINCIAL HEADQUARTERS NYANZA
3RD FLOOR
P.O. BOX 575 - 40100
KISUMU

REF: CDE/KSM/GA/3/24/IV/227

20th January, 2022

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION
Ms. NAOMI KEMUNTO ONDIEKI - NACOSTI/P/22/15195

The above named is from Kenyatta University.

This is to certify that she has been granted authority to carry out research on ***"Relationship between Academic Self-Concept, Motivation and Academic Achievement among Secondary School Students in Kisumu County, Kenya"*** for the period ending **13th January, 2023.**

Any assistance accorded to her to accomplish the assignment will be highly appreciated.

EUNICE A. OUKO
For: COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY

SGS

APPENDIX L: MAP OF KISUMU COUNTY