ACADEMIC SELF-CONCEPT AND ACHIEVEMENT MOTIVATION AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG FORM THREE STUDENTS IN SECONDARY SCHOOLS IN KIRINYAGA COUNTY, KENYA.

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF EDUCATION (EDUCATIONAL PSYCHOLOGY) IN THE SCHOOL OF EDUCATION AND LIFELONG LEARNING OF KENYATTA UNIVERSITY

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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 work has been complemented by referenced sources duly acknowledged; where text, data, graphics 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 work is dedicated to my dad, Mr. William Ndungu, mom, Mrs. Alice Waceke Ndungu for their prayers and support, and my lovely daughter for her patience with mom during long hours of study.

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ABBREVIATIONS AND ACRONYMS

AM:	Achievement Motivation
AMS:	Academic Motivation Scale
ANOVA:	Analysis of Variance
ASC:	Academic Self-Concept
ASCA:	Academic Self-Concept for Adolescents
CGPA:	Cumulative Grade Point Average
IQ:	Intelligence Quotient
ITBS:	Iowa Test of Basic Skills
KCSE:	Kenya Certificate of Secondary Education
NACOSTI:	National Commission for Science Technology and Innovation
SAMRS:	School Achievement Motivation Rating Scale
SC	Self-Concept
SPSS:	Statistical Package for Social Sciences
UNESCO:	United Nations Educational, Scientific and Cultural Organization

ABSTRACT

In present-day cultural and socio-economic context, the world is becoming more and more competitive. When education is regarded as a passage to affluence and a key factor for personal and social development, great emphasis is placed on students' academic achievement throughout the learning process. Low academic achievement may negatively impact on learners' psychological wellbeing and cause substantial stress on parents, who may subsequently pressurize their children to perform. There were many aspects that might have been associated with low academic achievement, including environmental, pedagogical and psychological factors. More specifically, this study focused on two psychological factors, namely achievement motivation, and academic self-concept (ASC) among learners in secondary schools. The purpose therefore was to determine the relationship between academic self-concept and achievement motivation on academic achievement among form three students in secondary schools in Kirinyaga East sub-county, Kirinyaga County. The objectives guiding the research aimed at determining the relationship between academic self-concept; achievement motivation and academic achievement, establish the prediction equation of academic achievement from academic self-concept, and achievement motivation, and to investigate if there was difference of gender in academic self-concept and academic motivation on academic achievement among form three students in secondary schools in Kirinyaga East sub-county. The study was founded on achievement motivation theory by McClelland (1953), and self-concept theory (1959) by Carl Rogers. Using correlational research design, the researcher targeted to draw inferences from a population of 2,500 students in form three across all public secondary schools in Kirinyaga East sub-county. Three hundred and eighty students from 11 schools were selected through proportionate, purposive, stratified and stratified random sampling techniques. A questionnaire incorporating adapted ASCA, and SAMRS scales, as well as end of term examination records were used as instruments. A Pilot study for instrument pretesting involved 40 form three students drawn from one school that was not selected for the main study. Central tendency, frequency counts and distribution variability were utilised as descriptive statistics, and correlation and multiple regression as inferential statistics. The results indicated that significant positive relationship was established between ASC and learners' scores on academic achievement (r (359) = .14, $p< 0.01$). A positive and significant relationship was also established between learners' achievement motivation and academic achievement scores (r (359) = .19, $p< 0.01$). Motivation, and creativity as domains of ASC were significantly correlated with scores on academic achievement, while among the domains of achievement motivation, significant correlation was noted between overcoming obstacles, goal orientation, learners' scores on academic achievement. It was established that there was minimal predictive value of academic achievement from combined effect of academic self-concept, and achievement motivation. Significant differences in gender were established in both ASC, achievement motivation, and academic achievement favoring female students. Among the recommendations include the need for education ministry through its training and capacity building institutions to equip teachers with skills aimed at developing key components of ASC, and achievement motivation. The study further recommended that schools ought to promote instructional strategies aimed at promoting components of ASC and achievement motivation found to have been strongly linked to academic achievement. There was need for schools to devise practical intervention strategies targeted on boys as a measure of narrowing differences of gender in ASC, and achievement motivation.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

In this introductory chapter, the researcher propounds on the contextual areas of research, and states the problem that the study sought to address. The chapter also provides the significance of the study, spelling out the importance of the study, as well as sections explaining the purpose, objectives, hypotheses, and research limitations. The researcher explains research boundaries in delimitations section, and states the assumptions made. The chapter also provides the theoretical orientation for research, the conceptual framework guiding the study, and a detailed list offering explanation of key technical and operational terms.

1.2 Background to the Study

Education is deemed to be the cornerstone of economic and social development globally on the basis that it improves social and economic productivity of the society. As the world grows increasingly competitive, quality of performance has become a key factor for individual progress, making parents to do all they can to support and also demand academic achievement of their children. Academic achievement represents learning outcomes that reveal how students have managed to accomplish specific goals and objectives that have been the basis for instructional activities (Steinmayr et al., 2019).

Globally, existing empirical evidence associates academic achievement (AA) with positive outcomes in various domains. Schultheiss et al. (2023) assert that in Netherlands, individuals who attain high educational levels are likely to find stable employment opportunities, earn higher salaries, and most likely meet the criteria for health insurance among other benefits, compared to those who are less

educated. The desire for academic achievement also leads to huge amounts of resources being channeled towards education. However, Al-Samarrai et al. (2019) in an article prepared for World Bank on the trends of global spending on education in various developing countries including the African region notes that even with such commitments, students' education outcomes have largely remained unchanged. The slow progress in raising students' academic achievement continues to raise fundamental questions for educational research. What are the deep-seated factors that may promote students' academic achievement? How far do divergent factors contribute towards students' academic achievement?

Nationally, academic achievement has for a long time been assessed through students' grades during end of term examinations. Although this system has been widely accepted, there is shortage of scientific evidence about its usefulness in motivating students towards academic achievement in Kenya. Students' learning outcomes have largely been found to depend on psychological, and student related factors, such as learning abilities, willingness to learn, and individual student's intelligence quotient (IQ), as well as teacher-related factors, such as instructional methods among others (Oyoo et al., 2019).

Some researchers in Kenya, such as Obura (2019) suggest that teachers can help students attain better academic outcomes by focusing on achievement goals that can motivate them towards demonstration of competence. However, student learning outcomes, as well as overall institutional performance have not been consistent with educational goals for a number of years. According to Kagundu (2021), this challenge is attributed to truant behaviour, while Othoo and Nekesa (2019) associate it with poor facilities, work environment, and teachers' motivation. This trend has also been replicated in

Kirinyaga East, where a report obtained from the sub-county education office as shown in Table 1.1 indicates that the performance of learners in secondary schools remained within a mean grade of four to five points in the last four years.

Table 1.1

Kirinyaga East 3 Year KCSE Performance Trend

Year	Entry	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	MSS
2020	3384	5	42	112	164	245	347	443	511	452	487	526	48	5.050
2019	3185	5	32	133	233	263	311	379	411	469	543	374	25	5.252
2018	3045	0	25	72	144	229	275	294	370	455	596	543	42	4.728
2017	2878	0	6	44	112	178	223	276	354	395	578	658	54	4.381

Source: Kirinyaga East Sub-County Education Office

While students' learning outcomes may depend on diverse factors, there is need to have better understanding on interaction between students' academic self-concept (ASC) and achievement motivation (AM) in predicting their achievement in education. Generally, self-concept entails the image that individuals have about themselves, ideally how one perceives their personal abilities, behaviour and unique characteristics. During developmental stage, self-concept of an individual tends to be more malleable as opposed to maturity stage when people hold solid perceptions about who they are and what is important for them (Cherry, 2021).

The term self-concept originated from the work of a humanistic psychologist, Carl Rogers (1902-1987) in the late 1950s, in which the term self was categorized in two parts, that is the ideal self, as one and the real self as the other. Rogers argued that ideal self, entails what an individual desires to become, while real self, or who a person really is, epitomizes the awareness of such an individual's desire to grow towards achieving their goals.

Academic self-Concept (ASC) represents the set of personal beliefs that a student holds regarding their academic skills or abilities, which are also influenced by early educators and parenting styles (Sandeep & Kochrekar, 2022). During the developmental structure, a learner's self-concept does not

remain static but is dynamically influenced by the interactions between peers and other people (Keller et al., 2023). The aspects of students' ASC in this study include general intellectual abilities, self-image, self-esteem, self-regulation or management, creativity, motivation and attitude.

Although self-concept begins to develop early during the stages of human development, research indicates that development of positive self-concept during the learning stage can positively affect social and emotional situations of students resulting in successful educational environments. Given that self-concept entails how individuals feel about themselves, the assessment about self can either be positive or negative, and once established in subconscious mind, can affect the individual's consciousness towards acting positively or negatively (Zhang et al., 2022). Positive academic self-concept is seen as important in determining students' learning outcomes, skills or abilities and is usually developed through a learner's experience and in the manner in which learners perceive and interpret their learning environment (Marsh et al., 2019).

The phenomenon of achievement motivation and its relationship with students' learning outcomes has over the years continued to generate tremendous interest among educators and educational researchers. Achievement motivation entails the invigoration and the trend of competence relevant attitude, or behaviour that drives individuals towards success and impels them from failure (Jankielewicz, 2023). It implies the need and desire to excel and make accomplishment, or achievement, irrespective of the rewards associated with such achievement. In this work, the components of AM include students' competitiveness, persistence, overcoming obstacles, ability to take risk for failure, goal orientation and competitiveness.

The modern research on achievement motivation can be traced to the work of psychologist David McClelland (1917-1998), who together with colleagues devised the expression “n Ach” referring to the necessity of achievement (McClelland & Winter, 1969). McClelland’s achievement motivation theory suggests that everyone is driven by three forms of motivators, namely achievement, affiliation and power, which propel individuals to the desire to solve problems and pursue their life goals. The motivators are not inherent but developed through an individual’s experiences (Li et al., 2023).

Research supports the rationality for achievement motivation in enhancing students’ commitment towards achievement. Achievement motivation plays a critical role in predicting future success or failure in academic achievement as it is among the most important psychological factors for predicting future academic achievement and occupational success (Erhuvwu & Adeyemi, 2019). Although the literature on association between this variable and students’ academic achievement is yet to be termed as adequate, the existing research indicates that achievement motivation encompasses a spectrum of components that are crucial for enhancing students’ academic and cognitive abilities.

As opposed to being a standalone factor, AM is understood as an amalgamation of various underlying themes, such as motivational beliefs, task values, and goals, as well as achievement motives (Steinmayr et al., 2019). The existing scientific evidence indicates that motivational construct has better predictive factor of students’ academic achievement compared to cognitive abilities (Lockl et al., 2021). Although motivational constructs are deemed as more powerful in predicting learning achievement compared to intelligence, when assessed together with other constructs, students’ self-

concept and task values are seen as stronger in predicting academic achievement (Steinmayr et al., 2019).

Some studies carried out in Kenya on association between the aforementioned predictor variables, and outcome variable have reported mixed findings. In Nairobi County, Muthee and Murungi (2019) reported that achievement motivation, intelligence and type of school were associated with better grades among pupils in schools within urban settings. The assessment of individual magnitude of the relationships however placed intelligence ahead of achievement motivation and type of school in that order.

In a related investigation, Ondieki (2022) found academic achievement to have strong correlation with students' general educational achievement, and motivation and students' achievement motivation to have been significantly related only in a number of domains, while Gachigi et al., (2019) found ASC as having strong relationship with achievement in mathematics. Kamotho et al., (2022) in yet another study conducted locally associated students' academic achievement to be associated with trait emotional intelligence. The study was also focused on university nursing students. Strikingly, based on the foregoing, the role of ASC and AM in predicting academic achievement locally had not been fully explored.

The interest of the researcher in this work was to establish the relationship that psychological concepts of ASC and AM would have on academic achievement among learners at secondary level in Kirinyaga East. The domains of self-concept included self-regulation, GIA - general intellectual abilities, creativity, and motivation. Achievement motivation was measured using the domains of

persistence, overcoming obstacles, goal orientation, competitiveness and ability to take risk for failure.

1.3 Statement of the Problem

Academic achievement is a central component that determine learners' academic success. Despite the enormous efforts that governments and school managements continue to put in place to enhance instructional processes, this is yet to resolve the issue of academic underachievement (Al-Samarrai et al., 2019). Researchers have explored on the underlying factors impinging on students' academic achievement. Many factors such as student temperaments, teachers' motivation, parental and peer support as well as socioeconomic status have in varied degrees been associated with students' academic performance (Masud et al., 2019).

In Kenya it has been observed that academic achievement is associated with issues such as students learning capabilities, student's IQ, psychological factors and teachers' factors like teaching methods (Oyoo et al., 2019). Other factors that have been explored as predictors of academic achievement among students are emotional intelligence and academic practices (Kamotho et al., 2022). Little seemed to have been done to investigate how students' psychological factors would impinge on academic achievement. There is need therefore, based on the highlighted issues to establish the relationship among form three students' academic self-concept, achievement motivation and their achievement in education in Kirinyaga East sub-county.

1.4 Purpose of the Study

The purpose of this correlational study was to determine the relationship between academic self-concept and achievement motivation, and academic achievement of form three students in secondary schools in Kirinyaga East sub-county, Kirinyaga County, Kenya.

1.5 Research Objectives

The research project was based on the following objectives:

i. To find out the relationship between academic self-concept and academic achievement of form three students in secondary schools in Kirinyaga East Sub-County

ii. To analyse the relationship between achievement motivation and academic achievement of form three students in secondary schools in Kirinyaga East Sub-County.

iii. To establish the prediction equation of academic achievement from academic self-concept, and achievement motivation of form three students in secondary schools in Kirinyaga East Sub-County.

iv. To investigate if there is difference of gender in academic self-concept and academic motivation on academic achievement among form three students in secondary schools in Kirinyaga East Sub-County.

1.6 Research Hypotheses

The hypotheses that guided the identification of concepts and areas of interest for the purpose of addressing the research problem were stated as follow:

H_{a1} There is a significant relationship between form three students' academic self-concept and academic achievement in secondary schools in Kirinyaga East Sub-County.

H_{a2} There is a significant relationship between form three students' achievement motivation and academic achievement in secondary schools in Kirinyaga East Sub-County.

H_{a3} There is a significant prediction equation of academic achievement from academic self-concept, and achievement motivation of form three students in secondary schools in Kirinyaga East Sub-County.

H_{a4} There is a significant difference in gender in academic self-concept and academic motivation on academic achievement among form three students in secondary schools in Kirinyaga East Sub-County.

1.7 Significance of the Study

The outcomes of this study were expected to be useful to teachers' trainers who might become more conscious about the importance of equipping teachers with the necessary training skills needed for enhancing academic self-concept of learners, their achievement motivation and subsequently academic achievement. Teachers, parents and students could benefit from the outcomes of this work regarding the implications and importance of creating conducive home and school environments for acquisition of appropriate forms of motivation and self-concept requisite for enhancing learning outcomes. The implications shared from the outcomes augment the existing field of knowledge, and accentuate the importance of learners' AM and ASC in predicting their learning achievement.

1.8 Limitations and Delimitations

1.8.1 Limitations of the Study

Several limitations were encountered during the processes of carrying out this project. Principally, there was a constraint related to the applied design, as correlational studies have limitations when it comes to drawing conclusions about effect and causal relationships among the variables. Adoption of purposive sampling procedure in identifying one out of five sub-counties and stratification of the sample was subject to errors in judgment, thus limiting the scope for generalization of results. The

researcher however relied on self-reporting approach during data collection phase, and multiple regression analyses for greater understanding of relationships between the study variables.

1.8.2 Delimitations of the Study

While other regions may have been appropriate for such a study, the focus was only on Kirinyaga East sub-county, leaving out other regions. The study only sampled form three students, leaving out learners from other classes. While there were many factors that might have been used to predict students' academic achievement, it was not logically possible to study all of them, thus the study only focused on the concept of achievement motivation, learners' ASC, and their learning outcomes assess as appraised through academic achievement.

1.9 Assumptions of the Study

Based on the topic and background to the area of study, a number of philosophical assumptions were identified as follow:

i. The respondents taking part in the study would act in cooperation with the researcher to provide the required information with honesty.
ii. The participants would be knowledgeable and would be able to comprehend and respond to all questions with correct responses.
iii. The instruments being relied on would be adequate in measuring all the study constructs.

1.10 Theoretical Framework and Conceptual Framework

1.10.1 Theoretical Framework

The theoretical foundations under which the concepts of the study were founded are Self-concept theory by Rogers (1959), and Achievement motivation theory by McClelland (1953). Rogers' (1959) self-concept theory addressed issues regarding students' self-concept and provided key propositions

relating to the larger domain of academic achievement, while Achievement motivation theory expounded on the aspects of students' achievement motivation and academic achievement.

Rogers (1959) Self-concept theory was chosen for the study as it explains how aspects such as interactions and experiences between teachers or parents are interlinked with the dynamics of academic self-concept. The preference for application in this work further arises from the notion that it recognizes that such aspects are fundamental in shaping self-worth of students, their self-image, as well as their ideal self, and that negative or positive self-concept can end up affecting learners' impulse towards academic achievement.

McClelland (1953) Achievement motivation theory is applicable to the study for the fact that it recognizes that individuals, such as students can be motivated to perform well by the good grades they achieve and the various incentives associated with good performance, such as presents, recognition/fame as the best, and attending good college after completing secondary school education as well as the possibility of a good career with high salary.

a) Self-Concept Theory (Rogers, 1959)

Carl Rogers remains the most conspicuous and eloquent voice in the making of self-concept theory, having introduced the all-inclusive system revolving around the significance of self (Hattie, 1992). In his view, Rogers (1959) distinguishes self as a core component in personal adjustment and human personality. The theory illustrates self as a social product that is established through interpersonal relationships. The theorist argues that positive regard from both oneself and other people is a basic human necessity. Rogers perceived that there is an instinctive propensity for development and self-

actualization in every individual provided that there is an inviting, tolerable and permissible environment (Rogers, 1959).

In Rogers' view, every person is capable of achieving their wishes, desires and goals, thus ultimately achieving self-actualization. He posited that individuals could reach their full potential if a number of things in their lives were fulfilled. These include self-actualization, attaining a wholly functioning person, developed personality, positive regard, congruence and also self-worth. Theorizing self-concept as systematized, constant set of beliefs and perceptions about oneself, Rogers presupposes that self is that individual's inner personality that gets influenced by the experiences that an individual goes through in their lives and how they interpret such experiences.

Rogers suggests that self-concept is comprised of three main components that are unique to humans, which are, ideal-self, self-image, and lastly self-worth. Regarding self-worth, this is what individuals think about themselves based on feelings or perceptions developed early in childhood through interactions with parents. Self-image denotes how individuals see themselves as influenced by their inner personality image, which affects their state of feeling about self, or their thoughts as well as behaviour. Lastly, the ideal-self entails the ultimate person that an individual aspires or wants to become. It is a dynamic component comprising of ambitions and goals in life.

The theory further presents two concepts that influence self-actualization, namely positive regard, and unconditional positive regard. The theorist presents conditional positive regard as seeking praise or approval and behaving in ways that others, such as parents or teachers think correct for the fear that one might lose their positive regard. Unconditional positive regard on the other hand denotes

someone being accepted for what one they are, and positive regard is not withdrawn, even if one attempts to achieve something and makes a mistake in the process.

In the context of ASC, the outcome of unconditional positive regard is that students, can through feelings of self-worth set and pursue their academic goals in accordance with their personality or self-image, driven by ideal-self or the desire for who they would want to become. Such students are expected to perform better, resulting in higher academic achievement. Rogers' theory was preferred for guiding this study as it supports the idea that students' academic self-concept can be influenced by factors such as interactions and experiences between teachers or parents. The theory is suitable for the study as it further recognizes that these factors are fundamental in shaping students' self-worth, their self-image as well as ideal self, and that positive or even negative self-concept may substantially affect a learner's impulse towards academic achievement.

b) Achievement Motivation Theory (McClelland, 1953)

Achievement motivation (AM) is among the most studied concepts, even though the concept itself was first systematically explored by McClelland (1953) and associates. Nonetheless, Murray (1938), upon whose ideas the theory was developed is also recognized as a pioneer of the concept. Murray had listed twenty common needs, with the main interest being social needs for instance, the need for affiliation, achievement and power. McClelland (1953) started a studying human motivation concept by picking the need for achievement from Murray list.

McClelland's theory aims at predicting and explaining human behavior and conduct based upon the need for achievement, affiliation and power. Human motives in McClelland's theory are illustrated

as human motivation assessment procedures. The theorist singled out individual's motives associated with achievement motive, motive for power, and affiliation (McClelland, 1958). Later, McClelland (1961), only concentrated on the need for Achievement, power and affiliation in his later publication, The Achieving Society. The theory presupposes that the need for achievement, power and affiliation motivates people differently (Finogenow, 2017; McClelland et al., 1953).

McClelland (1958) illustrates n-achievement, essentially an individual's need or desire for achievement as excellent performance in competition or contest. In essence, individuals set out their goals to perform exceptionally and with excellent standards in a competition. While an individual may end up not meeting this goal, their desire for excellent performance and in exceptional standards still makes such an individual to identify the goal they were pursuing as an achieved goal. McClelland further depicts individuals' goal for exceptional and excellent achievement in competition is most conspicuous when people get engaged in direct competition with each other, although the same can be exhibited in people's desire to perform the task at hand satisfactorily irrespective of how everyone is performing.

The individual's need for achievement entails the unrehearsed concern and craving for accomplishment accomplishments through one's own endeavors. The theory implies that the achievement need is that inner yearning for attaining a difficult task, exceptional triumph, ability to navigate around complicated tasks and being able to surpass others and so on. Thus, students who show the need for achievement are expected to develop crucial components, such as motivational beliefs, goals, task values, and achievement motives that act as motivators towards performing better, and accomplishing their learning goals irrespective of challenges involved.

The rationale for using this theory in the study is the fact that it supports the idea that individuals, such as students can be motivated to perform well by the good grades they achieve and the various incentives associated with such performance, such as presents, recognition/fame as the best, and attending good college after completing secondary school education as well as the possibility of a good career with high salary.

1.10.2 Conceptual Framework

Through the conceptual framework expressed through Figure 1.1, the researcher makes clear the interactions and presumed relationships among the study variables.

Figure 1.1

Conceptual Framework Demonstrating Relationships among the Study Variables

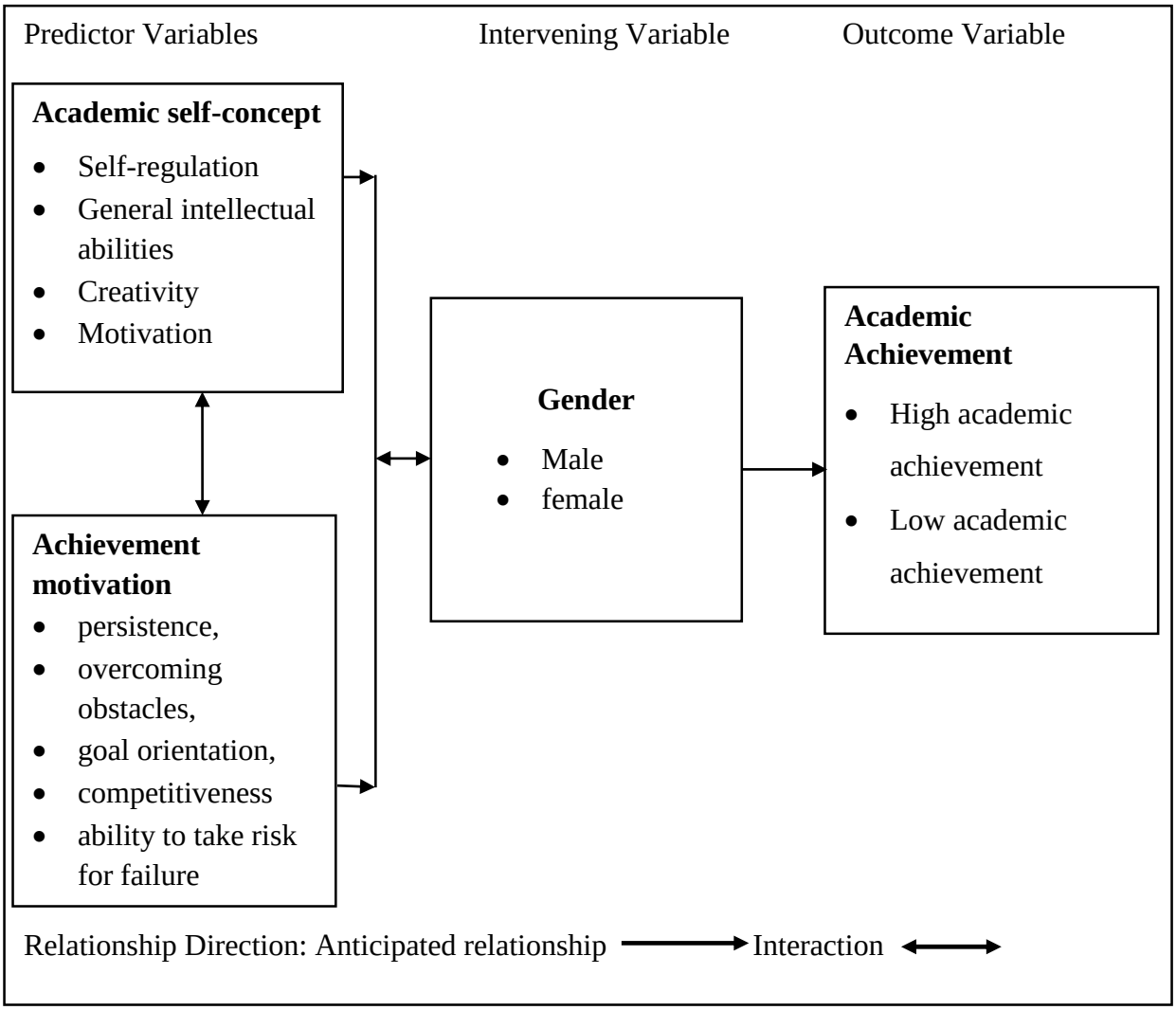


Figure 1.1: Relationships among the Study Variables

Source: Researcher 2021

Figure 1.1 demonstrates the predictor variables as ASC and AM, while outcome variable is academic achievement. Gender of the students is the study's intervening variable. The researcher presumed that academic achievement among learners in secondary schools is related to particular factors of ASC, and achievement motivation. It was presumed that students' positive or negative self-concept might have a bearing on various psychological characteristics such as student's general intellectual abilities, creativity, self-regulation and motivation.

It was further presupposed that student's AM could have an effect on learners' components that are crucial to academic achievement, such as persistence, overcoming obstacles, goal orientation, competitiveness and the ability to take risk for failure, resulting in high or low academic achievement. The components of ASC and achievement motivation interact with each other on student academic achievement. The researcher presumed that gender may have a bearing on students' ASC and AM towards educational achievement.

1.11 Operational Definition of Terms

Academic Achievement: These are the standardized grades obtained by the students in the end of term examinations.

Academic Self-Concept: These are students' perception about their own academic abilities.

Achievement Motivation: Student's need for success or attainment of excellence in education.

Level of Achievement Motivation This was measured through school achievement motivation rating scale (SAMRS).

Competitiveness A component of achievement motivation that inspires learners to conform to bahaviours and actions that contribute to their academic achievement.

Level of Academic Achievement This was determined through students' academic achievement T-score

Level of Academic Self-concept This was determined through the scaled scores as obtained from participants' responses to ASCA questions.

Level of Achievement Motivation This was determined through students' achievement motivation scores as measured through school achievement motivation rating scale (SAMRS).

Persistence A component of motivation through which form three students gain willingness and commitment to set and pursue their learning goals towards academic success

Self-Image	Students' own view or concept about themselves that may influence their personal responsibility, persistence, confidence and commitment towards academic success
Self-Regulation	Form three students' self-management or self-directive processes, through which they get to organize, manage and convert their thoughts into learning abilities.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The contents covered in this chapter include a review of previous scholarly works touching on the constructs of the current study. The reviewed literature provides a critical overview on the linkage between ASC, learners' motivation for achievement and their learning outcomes, as well as the relative prediction of ASC and AM on academic achievement. A review of studies on gender difference in AM, and ASC on learners' educational achievement is also given. Further, a summary of the reviewed works, and identification of gaps are presented.

2.2 Relationship between Academic Self-concept and Academic Achievement

In recent times, research related to ASC has attracted considerable interest among educational psychology researchers and educationists. While there is considerable extent of research exploring on mutual dependence of learning achievement and self-concept, few studies have particularly explored on the nexus between the components of ASC of learners and how such learners fare in educational achievement.

In a study carried out Germany Steinberg et al. (2024) explored the mediation factor of goal orientation in interrelation of ASC and AA in mathematics. The sample involved 1150 adolescent learners from self-regulated and traditional school settings. From the findings, it emerged that even though goal orientation as a dimension of general ASC had strong mediating factor, the specific finding failed to be confirmed for verbal and mathematics domains. This conflicting finding points to the need to establish the association between ASC and AA among form three students. The study

also sampled students from two different school settings and was interested in academic achievement in mathematics.

Further, Postigo et al., (2022) examined the variability of ASC between primary and secondary school students in Spanish context, and its role in academic performance. A longitudinal approach was relied on to assess the factors affecting students' progression. The results pointed to a dramatic declination of ASC in forming the attitude on schooling and learning outcomes among the learners in both primary and secondary levels. The study however employed a unidimensional strategy, while the present study involved various domains of ASC to assess their predictive factor on academic achievement (AA). Further, the study employed a longitudinal approach and sampled learners in both primary and secondary levels from vastly industrialised Spanish region, and the results may not be generalised for students in a rural setting such as Kirinyaga East in Kenya.

In a study from two northern Italian regions, perinelli (2022), investigated the change of ASC, and its correlation with academic achievement among learners in junior high school level. Those sampled were 1674 students selected from 24 schools, with verbal and mathematics self-concepts being explored. The results intimated that both characteristics of self-concept, that is verbal and mathematics declined constantly throughout the duration of junior high school. Despite a negative mean score, students demonstrated varied trajectories in the manner they changed. Although the study only looked at verbal and self-concepts and their correlation in learning achievement of the same subjects, the conflicting results formed the basis for further investigation.

Similarly, Iyengar et al., (2021) set out to explore what parallels would be drawn between ASC and educational attainment among learners in high schools associated with India's Central board of higher education – CBSE. Academic self-concept was assessed in various subscales including students' academic ability, academic interaction, academic interests, academic efforts, curriculum, efforts, and academic future. Positive relationship was reported between the two variables. Inferences were made that students' with high levels of ASC had better educational performance. However, this study did not delve into specific components of self-concept like students' general intellectual abilities, creativity, motivation and self-regulation, which the present study investigated.

Despite shortage of research in the African continent on ASC and academic achievement, some few recent studies have focused on this topic and reported varying findings. Okotie (2019) explored on ASC as a correlate of educational achievement in mathematics among students in Nigeria's Edo State senior secondary schools. From the results, ASC was reported to have significantly predict learners' achievement in mathematics. Despite strong and positive predictive value of ASC, the study was based on a singular subject and its prediction on other examinable subjects could not be established, a factor that the present study considered.

Several researchers in Kenya have explored on the impact of some specific domains of self-concept on students' learning outcomes. For instance, Gachigi et al. (2019) from Nairobi City County looked into the possibility of association between learners' academic self-concept and mathematics outcomes. The study sampled 500 form 3 students drawn from Nairobi City's public schools. The study strongly associated learners' self-concept with their learning outcomes in mathematics. However, multiple linear regression revealed that the specific domains used to measure self-concept

were confidence and effort, and that only confidence showed statistically significant relationship with achievement in mathematics.

The present study involved different domains of academic self-concept, that is, self-regulation or self-management, motivation, creativity and general intellectual abilities. Further, the study only assessed relationship possibility between self-concept of learners, and learning outcomes in mathematics. This gap was addressed in the present study by employing a more comprehensive and multidimensional approach to establish academic achievement in all examinable subjects.

2.3 Achievement Motivation and Academic Achievement

Considerable amount of research especially in developed countries has attempted to investigate the connection between achievement motivation (AM) of learners and their academic achievement. Steinmayr et al. (2019) sought to establish the significance of motivation towards students' academic outcomes by investigating whether the existing studies could be replicated if factors such as learners' task values, goals, ability self-concepts and achievement motives were measured within similar specificity levels as achievement criteria, such as hope for achievement in mathematics and mathematics grades. The study sampled 345 students from grade 11 and 12 in Germany.

Data was obtained through students' self-reports on goal orientation, task values, ability self-concept, achievement in German language, mathematics as well as general school achievement. The findings indicated that above all the predictors, domain specific motives, ability self-concepts, and task values had significant level of variance in grades. The strongest predictor of achievement was observed in students' ability self-concepts. While the authors established that significant levels of learners' motives for achievement existed, the focus was only on ability self-concepts, goal orientations and

task values, as specific domains of achievement motivation. Apart from goal orientations, it was not known how persistence, overcoming obstacles, competitiveness and ability to take risk for failure, which the present study was interested in, might correlate with academic achievement.

In Turkey, Sivrikaya (2019) looked into the correlation between levels of AM and AA in sports and physical education among university students. A sample of 120 students studying sports and physical education was selected. The results demonstrated the level of AM scores to be above average. The correlation results suggested that an increase in the levels of AM led to the increase of intrinsic motivation levels based on students self-rated scores. Despite the results demonstrating the relationship between the two variables, the sample used was still small compared to the university population. The study also used different subscales of academic motivation and only assessed achievement in sports and physical education.

Kumar and Tanka (2020) sought to establish the manner in which AM and psychological adjustment might influence students' learning achievement. Employing a cross-sectional design, the study targeted adolescent urban students in an Indian city, from which a sample of 283 participants was drawn. The study used scores obtained at the tenth grade to measure students' performance and administered achievement value and anxiety inventory to measure achievement motivation.

Adjustment inventory for school students was used to measure respondents' psychological adjustment. The findings pointed to significant correlation between learning outcomes, AM and educational adjustment. However, on domain specificity, save for pointing out that some of the

measures were task-related or achievement-related, the study fell short of stating which precise components were used to assess students' achievement motivation.

There is scarcity of research on association between learners' achievement motivation and their possible achievement in academics across the Asian region. Some researchers however have explored on the link between these two constructs. In South India, Chebrolu (2024) set out to find out how academic motivation might be connected to academic achievement amongst students pursuing secondary education during Covid-19 pandemic. The study used purposing or judgmental sampling procedure to select 80 participants.

The dimensions of AM were motivation, achiever, competitiveness, and goal orientation. The reported findings demonstrated that no significant correlation was established between the two variables among urban or rural based learners. On specific domain categories, motivation was found to be the greatest contributor of learning achievement. The study however was carried under the pandemic restrictions which also led to selection of a very small sample. Additionally, the specific domains of AM were different from those of the present study apart from goal orientation, and competitiveness.

A few researchers in the African continent have tried to interrogate the linkage between the construct of AM and its importance in academic achievement. In a Nigerian based study, Kwajaffa et al. (2022) investigated how motivation in general would influence students' learning performance in realisation of sustainable national development. Two hundred participants were selected from college students pursuing economics courses. The results showed that combination of intrinsic and extrinsic

motivation would influence students learning achievement in economics. Nonetheless, more research was required given that the study was focused on general motivation, and only concentrated on its prediction in learning achievement in economics. The study was also targeted on college students, whereas the present study was interested in secondary students in form three.

In Kenya, Karari et al. (2022) investigated how exceptional learners' achievement motivation might be linked to their educational outcomes. A questionnaire and checklist observation guide were used as tools of data collection. A significant influence of achievement motivation characteristics was established in learners with special learning abilities ($t = 3.714$, $p<0.05$). Despite the reported relationship among the aforementioned variables, the study failed to divulge the information on specific domains of AM or their measures in predicting learning achievement among the participants.

On the other hand, Muthee and Murungi (2019) examined the association among achievement motivation, intelligence, school type and public primary school learners' academic performance. The study sampled learners from both government-funded and those from private elementary schools in Nairobi County. The results from multiple regression showed that achievement motivation, intelligence and school type were strongly associated with educational performance. However, on assessing the level of contribution to the prediction, intelligence was found to be the greatest significant predictor, leading achievement motivation and school type in that sequence. Despite the positive findings, this study fell short of revealing the specific domains of the variables being measured. The study was also carried out in a city environment and sampled primary school pupils. This work was focused on Kirinyaga East, targeting form three students, and it was important to draw comparison on the results.

2.4 Relationship among Academic Self-concept and Achievement Motivation on Academic Achievement

There are very few studies regarding the interaction of ASC and AM in students' educational attainment. In such studies, Husnayaini (2019) set out to establish what form of interaction might exist between AM and self-concept, among learners attending secondary schools in Indonesian region of Bangka Belitung. The study involved 153 10^{th} grade learners due to conflicting class schedules and other unforeseen circumstances. Self-concept was measured though 8 domains, including academic ability, self-regard, parental acceptance, verbal ability, physical ability, and physical appearance. Achievement motivation was on the other hand assessed through a single scale format.

The inferential outcomes for achievement motivation and self-concept showed no correlation between the two variables, with a number of factors including student expectation in learning, backgrounds, and different characters being attributed to such results. The study however relied on a relatively small sample, and only assessed achievement in English, and it was important to carry out another study to assess the prediction of these variables in other skills and content knowledge.

In another study, Kulakow (2020) investigated the interaction between of SC, AM among adolescent learners in varied learning environments in Germany. The latent mean results indicated that learners exposed to competence based learning had higher levels of ASC compared to those in traditional learning environments. On the other hand, the association between ASC, and AM was mediated by students perceived support functions. The results also implied that ASC and AM significantly declined among the learners from competency based school environment. Such interactions however

were based on the change of learning environments, and the results could not be generalised for the learners on the locale of the present study.

In the African region, Okotie (2020) explored on the interrelationship between ASC, AM, and learning outcomes in mathematics among senior high scholars in Edo state of Nigeria. The regression results pointed to correlation between the two predictor variables, that is, students' self-concept and achievement motivation in predicting learning achievement in mathematics. Between the two predictors, AM was relatively a better contributor than ASC. Despite the results, the study failed to divulge the specific components of both AM and ASC, and only assessed their contribution in learning achievement in mathematics, whereas the present study explored such prediction in all examinable subjects.

In Kenya, Ondieki (2022) investigated the interaction of students ASC and AM, as well as their combined predictive values toward academic achievement. The study targeted secondary school students from Kisumu county, and involved 301 participants. The results suggested that both ASC and AM had a combined predictive value of 46 percent towards learners academic performance. The scales used in the study, however measured ASC through academic confidence and academic effort, with AM being measured through intrinsic motivation, extrinsic motivation and amotivation. The present study on the other hand assessed ASC through the sub-domains of self-regulation, general intellectual abilities, creativity and motivation, while AM was assessed through persistence, overcoming obstacles, goal orientation, competitiveness, and ability to take risk for failure.

2.5 Gender Differences in Academic self-concept and Achievement Motivation

2.5.1 Gender Differences in Academic Self-Concept

A review of educational research shows that a number of researchers have explored on differences associated with students' gender, ASC, AM and educational outcomes. In Spain, Herrera et al. (2020) analyzed the relationship likely to exist between students' learning achievement and various psychological constructs including self-concept based on gender and cultural origin. A sample of 407 learners comprising of 192 (47.2%) boys and 215 (52.8%) enrolled in the previous two years in primary education was used. Significant differences were reported based on gender for ASC, with girls doing better in marks attained compared to boys. Despite the findings, the study assessed academic self-concept in general and gender differences based on different dimensions were not divulged. The study was also targeted on learners in primary schools and the outcomes may not be generalized for the population targeted in this study, whose focus was students in secondary schools.

In a systematic review, Wang and Yu (2020) explored how gender moderates the effects academic self-concept on learning performance. The reported outcomes intimated that differences in gender in ASC accounted for the gap between boys and girls towards achievement in specific subjects. The study however failed to show how both genders differed in ASC. Lewis (2022) also looked into the difference of gender among undergraduate students from Americas' University of North Florida. The academic self-concept scale was used to measure ASC. Although the study reported that gender was a significant predictor for achievement in mathematics, it fell short of demonstrating the effect of gender on students ASC.

Investigations, albeit infrequent, have been done in the African continent in respect to differences of gender in students' self-concept. Okyere (2019), investigated gender ascribed effects on self-concept and learning achievement in mathematics. The study utilized descriptive survey design and sampled 119 junior high school students comprising of 59 boys and 60 girls from selected schools in a district in Ghana. The study established a difference attributable to gender learners' self-concept and achievement in mathematics. Male students were found to have performed relatively better in these constructs than their female counterparts.

Further, Anierobi (2019) investigated the difference in gender in ASC among students from secondary level schools in the urban areas of Nigeria' Awka city. The results showed that no significant gender difference was noted in measuring the students ASC. The study however relied on a small sample of 80 participants selected only through purposive sampling, a non-probability technique with high risk of research bias. The present study sampled 380 participants, and utilised several types of sampling to select schools and participants, including purposive, proportionate stratified, and stratified random sampling procedures.

In Kenya, Wakasiaka (2021) explored on gender differences in ASC among primary school learners using traditional and computer assisted learning. The study reported no significant difference in gender in ASC both in learners exposed to traditional strategy and those using computers. The study was however focused on primary school pupils, whereas the present study was interested in secondary school students in form three. In contrast a study by Gachigi (2019) reported that female students achieved higher mean scores in ASC compared to male students. The study had sought to establish the interrelation between ASC, and achievement in mathematics among students in Nairobi

county secondary schools. Nonetheless, in this study, ASC was measured through Academic self-concept questionnaire, while the present study utilised ASCA scale (Ordaz-Villegas et al., 2013).

2.5.2 Gender Differences in Achievement Motivation

While various studies have looked into the aspect of gender differences in students' achievement motivation, research on these constructs has generally reported inconsistent outcomes. In Turkey Turhan (2020) carried out a meta-analysis on gender attributable effects on academic motivation from 2004 to 2019. Eight studies were selected, with a total sample of 8000 students. The study's random effects showed a low gender effect on the sub-domains of achievement motivations that were being assessed, that is, exploration (Cohen d value -0.12), using knowledge (Cohen d value -0.18), and self-transcendence (Cohen d value -0.08).

The study however explored on different sub-dimensions of achievement motivation and gender differences based on persistence, overcoming obstacles, goal orientation, competitiveness, and the ability to take risk for failure, which were the focus of the present study could not be established. In another study in Sharma and Lavania (2022) investigated the differences of gender in achievement motivation of engineering students in India's Udaipur city. Those sampled were 30 male and 30 female students between the age of 15 to 19.

From the outcomes, a significant difference was found between the two genders, with girls in entrance engineering exam showing greater achievement motivation levels compared to boys. These outcomes were however based on a small sample of 60 students. The study also assessed learning

achievement in engineering only. The present study sampled 380 participants and assessed the difference of gender based on academic achievement in all subjects.

Studies in the African region on gender differences related to learners AM have reported mixed findings. In a study carried out in Ghana, Faakye (2020) assessed gender differences among senior high scholars in a pre-tertiary institution in Cape Coast region. Two hundred and ninety three students were selected using a random technique. No significant difference attributable to gender was observed in achievement motivation among the students. The study however did not reveal whether any differences existed in achievement motivation for goal orientation, persistence, overcoming obstacles, competitiveness, and the ability to take risk for failure.

In Kenya, most of the studies have focused on students' gender differences in academic motivation as opposed to achievement motivation. In one study, Mwaura (2020) investigated the difference in gender on academic motivation among students in Nairobi county's secondary schools. Academic motivation scale for high schools was used as data collection tool. The difference in gender in academic motivation was found to favour girls more than boys. Female students were also found to be intrinsically motivated in all the domains but that of amotivation and extrinsic motivation introjected. Nonetheless the specific domains were different from that of the present study, which measured achievement motivation in persistence, goal orientation, competitiveness, overcoming obstacles, risk-taking, and persistence.

2.6 Summary and Research Gaps

The reviewed literature has indicated that academic achievement is associated with learners' ASC and AM. Further, it has been established that some of self-concept abilities amongst learners and achievement motivation goal orientations are strong predictors of academic achievement. However, the foregoing review shows that most of the studies on the two predictor variables, essentially academic self-concept, and student achievement motivation took place in developed countries, mostly involving urban populations. A considerable number of the reviewed studies were done among university, college and elementary school students, with only a few of them focusing on students in secondary schools.

Further, regarding the outcome variable that the present study is interested in, which is academic achievement, various studies have employed a narrow approach, such as only assessing achievement in one or two subjects, particularly English and mathematics. Many studies have also ignored the multidimensional context, advancing a restrictive approach that failed to take into consideration the variables' domain specificity in assessing their relationships. Some of the studies have yielded contradicting and inconclusive results, while others have relied on very small samples, thus casting doubts on the validity of the results. In this regard, there is need for a more comprehensive research in Kenyan secondary schools, in order to understand and decipher the nature of relationship among the discussed variables.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In this chapter, the researcher provides details on research methodology that were used in this study, and the processes through which the study was conducted. The chapter includes details about design employed, variable information, study locale, population, and procedures of selecting the sample, as well as instruments and piloting of the instruments. The chapter also explains about determination of validity as well as reliability of the instruments to be administered, procedures for gathering data and consequent methods of analyses, as well as ethical and study's logistical considerations.

3.2 Research Design

The study adopted correlational research design. McLeod (2017) explains that correlational design is a non-experimental approach that makes it possible for researchers to establish statistical relationships between two or more relevant variables devoid of any form of influence from intervening variables. According to Curtis et al. (2016), correlational design enables researchers to determine prevalence of trends or phenomena and make predictions based on the knowledge of the current data. The suitability of the design was informed by its expediency in enabling the researcher to measure the trends regarding student characteristics and statistical relationships among the study variables.

3.3 Research Variables

The study's predictor variables are academic self-concept and achievement motivation, while outcome variable is academic achievement. Gender of the participants is the study's intervening

variable. The study variables were measured using interval scales, students' academic achievement scores, and through evaluation of numerical scores as obtained through respective adapted scales.

3.4 Research Methodology

The study implemented questionnaires and students' end of term examination scores to obtain quantitative data from the respondents. The questionnaires consisted of close-ended Likert numeric response items designed in conformity with the respective adapted scales. This approach is useful in social sciences as it makes it possible to analyze participants' responses and understand relationships between different variables.

3.5 The Study Locale

Kirinyaga East sub-county in Kirinyaga County, Kenya was the specified area where investigation was done. The sub-county is among the regions in Kenya reporting poor academic achievement among secondary school students. A performance and appraisal report obtained from education office in the area indicates that average school performance revolved between 4 and 5 mean score in KCSE performance between 2017 and 2020. This is testament to underlying challenges affecting students' academic achievement in the sub-county. Little seemed to have been done to explore on this problem as no research had been identified in this area from the reviewed literature.

3.6 Target Population

The target population in this study included 2,500 form three students, comprised of 1500 girls and 1000 boys from the 33 government-funded secondary schools in Kirinyaga East sub-county. The school categories include 4 boarding exclusively for boys, 7 boarding for girls only, 21 mixed day,

and 1 day and mixed. Form three students were targeted in this study as they were assumed to be mature in terms of age and education, and have greater experiences based on testing and graduation to different forms. Targeting of this category was also informed by the fact that at their age, form three students have unique characteristics in terms of advanced psychological development, greater exposure to learning and conscientiousness.

3.7 Sampling Techniques and Sample Size

3.7.1 Sampling Techniques

Three types of sampling, namely purposive sampling, proportionate stratified and stratified random sampling were employed. Proportionate stratified method was applied to select 5 mixed day, 2 boys' boarding, and 3 girls' boarding schools, and 1 mixed boarding and day school. Stratified sampling was applied to organize schools into various strata in accordance to school type. As illustrated in Table 3.1, a total sample of 380 form three students was purposively obtained in proportion to the size of population, comprising of 138 girls from girls' only boarding schools, 92 male learners from exclusively boys boarding, and 150 boys and girls from mixed boarding and mixed day schools.

3.7.2 Sample Size Computation

To compute the sample, the researcher was guided by Slovin's formula, computed as $n = N/ (1+ Ne^2)$ (Stephanie, 2013).

The formula is presented as:

n = sample

N = population

e = margin of error

Hence n =2500÷ (1+2500 x 0.05 x 0.05) = 345

In any study, loss of participants may occur due to those leaving the study or none responses resulting in attrition bias. Schulz and Grimes (2002) suggest that attrition of less than 5% can result in little bias, while that of over 20% can significantly affect the validity. To address attrition bias, it is recommended that a sample size be raised by 10% (Singh et al., 2020). Thus, from the total sample of 345 yielded by the formula, a 10 percent was added to cater for potential attrition bias due to inconsistency in filling the forms, loss of participants and incomplete questionnaires.

Hence n = 345+35 = 380.

Table 3.1

The Sampling Frame Showing Actual Figures

School Category	Population			Sample		
	Schools	Students		Schools	Students	
		Girls	Boys		Girls	Boys
Girls Boarding	7	912	-	3	138	-
Boys Boarding	4	-	598	2		92
Mixed Day	21	490	350	5	72	48
Mixed Boarding/ Day	1	98	52	1	18	12
Sub-Total	-	1500	1000	-	228	152
Total	33 (100%)	2500 (100%)		11(33%)	380 (Appr 15%)	

Key: Appr = Approximately

3.8 Research Instruments

The study utilised a questionnaire, incorporating adapted scales for the purpose of gathering data from form three students. Structured in conformity with the objectives, the questionnaire was designed in three sections. These included a section for collecting data on participants' general

information; a section for academic self-concept; and a section for achievement motivation. Data for academic achievement was obtained through students' end of term examination scores.

3.8.1 Academic Self-Concept for Adolescents (ASCA) Scale (Ordaz-Villegas et al., 2013)

ASCA scale by Ordaz-Villegas et al. (2013) was adapted to measure students' academic self-concept. The scale comprises of 28 items aimed at measuring four domains of students' self-concept, which include self-regulation, creativity, motivation, and general intellectual abilities (GIA). The 28 items were scored through 5 level Likert scales from 1 "never"; 2 "sometimes" 3 "usually" 4 "very often", and 5 "always". The items in each of the subscales measuring the four factors of academic self-concept include: self-regulation (1, 4, 6, 14, 16, 17, 23, 24); general intellectual abilities (2, 3, 5, 9, 12, 15, 20); motivation (7, 10, 13, 21, 27, 28); and creativity (8, 11, 18, 19, 22, 25, 26).

Based on the tool's 28 items, the score level ranged from 28-140, whereby a score of (28-46) indicated low level of ASC, 47-95 moderate level, while a rate of 96-140 indicated high ASC levels. Initial testing for accuracy was done by its authors and a score of 47% obtained on all the four factors of self-regulation, creativity, motivation and general intellectual abilities, in addition to Cronbach's alpha value of .828 (Ordaz-Villegas et al., 2013). Permission to use the tool was formally obtained the authors as indicated on appendix D.

3.8.2: School Achievement Motivation Rating Scale (SAMRS) (Chiu, 1997)

Students' achievement motivation was measured through SAMRS developed by Chiu (1997). The scale is designed with 15 test items aimed at determining the level of learners' achievement motivation and predicting their academic achievement by focusing on various intrapersonal

competencies, including, persistence; overcoming obstacles; goal orientation; competitiveness; and ability to take risk for failure. While the original items were meant to be rated by the teacher, the adapted items were rephrased to conform to a self-reporting scale. Scoring of SAMRS' questions was done through a 5 level Likert scale from 1 "strongly disagree" to 5 "strongly agree".

The items in each subscale measuring the five factors of achievement motivation include persistence (1, 7, 12), overcoming obstacles (4, 6, 8, 9), goal orientation (2, 3, 11, 14), competitiveness (10, 13), and ability to take risk for failure (5, 15). Based on the 15 items, the level of scores ranged from 15-75. A score range of (15-30) indicated a low achievement motivation level, (31-45) a moderate achievement motivation and from (46-75) a high achievement motivation level. SAMRS content validity was originally established in accordance with the methods of the scale's design, while criterion validity was ascertained through correlations with student grades at r=.76. The scale's reliability was established at average Cronbach's Alpha value of .61-.90 amongst the domains (Chiu, 1997). The scale is in public domain and express permission for use in academic research was not required.

3.9 Pilot Study

Before setting out for data collection for the actual study, a small sized pilot project was organised for pretesting the instruments. A sample of 40 students was randomly identified from secondary schools that were not selected in the actual study in the sub-county. A pilot sample from the same sub-county is preferred due to shared characteristics amongst the respondents. The number of participants in this exercise was consistent with the recommended threshold of 10 percent of the main study's sample (Hazzi & Maldaon, 2015).

3.9.1 Validity of Research Instruments

Content validity of test items was achieved through assessment of appropriateness based on the responses from the pilot study. Any inaccuracies or omissions that might have led to lack of clarity were duly addressed. The researcher also liaised with the supervisor to seek guidance and understanding of instruments in order to have convergence in establishing construct validity. External validity was ascertained through stratification procedure during selection of schools, thus ensuring adequate representation of the sample.

Population validity was determined through randomized sample selection so as to ensure fairness of inclusion to the study. The validity of the adapted scales has also been previously established by their respective authors. For SAMRS, the author ascertained criterion validity through correlations with learners' grades at r=.76 (Chiu, 1997). On the other hand, the ASCA scale's factorial analysis showed a high level of accuracy across the 28 items in all the four factors (Ordaz-Villegas et al., 2013).

3.9.2 Reliability of Research Instruments

Instruments' reliability was ensured through internal consistency measure of the constructs using pilot test's data. The researcher made use of Cronbach's alpha to determine the extent to which a set of items are closely related since the more similar the constructs, the higher their internal consistency (McNeish, 2018). As recommended by Taber (2018), a Cronbach's alpha value of .70 and above was considered adequate and acceptable for this study. Reliability of the adapted tools has also been determined during the development phases.

For ASCA, a Cronbach's alpha of .83 on the items internal consistency was established (Ordaz-Villegas et al., 2013). Conversely, the internal consistency of SAMRS was ascertained at a Cronbach's alpha value of .61-.90 across its factors (Chiu, 1997). The scales were also pretested for the present project given the diversity of characteristics among the respondents. Table 3.2 summarises the details for alpha coefficients from original tests provided by the authors and those obtained during pretesting for the present work.

Table 3.2

Reliability Coefficients of Instruments

SN	Scales	Items	Authors' Alpha Coefficients	Pilot Study Alpha Coefficients
1.	ASCA	28	0.83	0.76
2.	SAMRS	15	0.90	0.70

3.10 Data Collection Procedure

Upon receipt of the university introductory letter, the researcher applied for license to conduct research from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher then visited the identified schools to seek permission to distribute the forms of data collection to students. The questionnaires were distributed to the identified form three students by the researcher together with three assistants. The participants were directed on how to fill the questionnaire. Data collection activity took about two weeks. The researcher and assistants collected the completed questionnaires and test materials in readiness for the analysis stage.

3.11 Data Analysis

Quantitative data, that is, the data obtained through the questionnaires, was assigned specific codes upon entry into computer spreadsheets for computation of descriptive statistics. Data was inspected and duly cleaned to eliminate any outliers and missing values that would otherwise compromise the statistical strength and reliability of results. Statistical Package for the Social Sciences (SPSS) version 26 was used to compute the descriptive statistics such as frequency, percentages and means, and inferential statistics. Applicable inferential statistics for testing research hypotheses were applied. The results were presented in tables and figures. The null hypotheses that were tested and applicable statistical tests are as Stated:

H_{01} There is no significant relationship between form three students' academic self-concept and academic achievement in secondary schools in Kirinyaga East - Pearson's product moment correlation coefficient.

H_{02} There is no significant relationship between form three students' achievement motivation and academic achievement in secondary schools in Kirinyaga East. - Pearson's product moment correlation coefficient.

H_{03} There is no significant prediction equation of academic achievement from students' academic self-concept, and achievement motivation in form three students in secondary schools in Kirinyaga East, Kirinyaga County. Statistical test: Multiple regression analysis.

H_{04} There is no significant difference in gender in academic self-concept and academic motivation on academic achievement among form three students in secondary schools in Kirinyaga East, Kirinyaga County, Kenya. Statistical test: Independent samples *t*-test

3.12 Logistical and Ethical Considerations

3.12.1 Logistical Considerations

Preparation and logistical planning are essential in a study of this nature. The researcher first obtained written permission before engaging in data collection exercise. The authorizations were obtained from the Graduate School, Kenyatta, University and NACOSTI. Additional approvals were sought from school principals and sub-county director of education. The researcher further, in liaison with the principals, scheduled for appointment to distribute questionnaire to the students. The data collection exercise in all the identified schools last for a period of two weeks.

3.12.2 Ethical Considerations

In line with the requirement for ethical procedures, the researcher, prior to data collection sought a formal approval from ethics review committee in Kenyatta University. During questionnaire administration, the researcher obtained consent from the participating students, who were requested to sign a pre-prepared form consenting to being part of the study. The researcher further informed the participants about the purpose of the study and explained to them that their confidentiality, anonymity, and privacy would not be breached throughout the research processes. The participants were asked not to inscribe their names on the study materials. The researcher then collected the filled materials for data analyses. Materials containing raw data were securely stored in digital devices and properly preserved in lockable cabinets.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF RESEARCH FINDINGS

4.1 Introduction

Data analysis was followed by presentation and detailed discussion of the obtained findings as covered in the contents of this chapter. There are four major sections, encompassing an introductory part, a segment for presenting general and socio-demographic information of the participants, presentation of the study's main results, and a section for detailed discussion of the stated results.

4.2 General Information

In this section, the researcher highlights the return rate of the instruments, and the participants' general information regarding their age and gender distributions, as well as types of school.

as shown in Table 4.2.

4.2.1 Return Rate

In this sub-section, the study highlights the rate of response based on the total number of participants to whom the instruments were administered and the number of duly completed and usable questionnaires as illustrated in Table 4.1.

Table 4.1

Return Rate

School Category		Girls	Boys	Girls	Boys	Percent
Girls Boarding	3	138	-	137	-	99
Boys Boarding	2		92	-	90	98
Mixed Day	5	72	48	65	43	90
Mixed Boarding/ Day	1	18	12	18	8	87
Sub-Total	-	228	152	220	141	
Total	11	380		361		95

Note. N= 361.

The results indicate that out of 380 questionnaires administered, 361 forms were retrieved and found to be properly completed and fitting for inclusion. The returned questionnaires represented a rate of 95 percent. The results indicate that the questionnaire received a high response rate, given that a rate above 50 percent is considered as desirable for social science research (Sataloff & Vontela, 2021).

4.2.2 Demographic Information on Gender, Age, and Type of School

The participants general information regarding their gender, age and school category was also obtained and analysed. Exemplified through the contents of Table 4.2 is the summary of the processed information.

Table 4.2

Demographic Information

Variable Category		Frequency	Percent
Gender			
	Male	141	39.1
	Female	220	60.9
	Total	361	100.0
Age			
	14- 16	117	32.4
	17	141	39.1
	18 - 20	103	28.5
		361	100.0
Type of School			
	Boys	78	21.6
	Girls	180	49.9
	Mixed	103	28.5
	Total	361	100
Residential Status			
	Boarder	258	71.5
	Day scholar	103	28.5
	Total	361	100

Note. N= 361.

Results were obtained with regard to participants' social demographic information in order to compare their gender and age distribution, as well as type of school and residential status. As illustrated, it emerged that majority (60.9%) of the participants were female while the number of male represented 39.1% of the sample. Regarding age distribution, 141 (39.1%) of the participants were at the age of 17 years, followed by 117 (32.4%) of those aged between 14 to 16, while those at the range of 18 to 20 years of age were 103 (28.5%). The results further indicate that regarding the type of school, nearly half (49.9%) of the participants attended girls schools while 103 (28.5%) were from mixed schools. With regard to residential status, majority (71.5%) of the participants attended boarding schools, compared to 103 (28.5%) of their counterparts who attended day schools.

4.3 Findings on the Relationship between Academic Self-Concept and Academic Achievement

In its first objective, the study explored on the nature of relationship between students' ASC and academic achievement. The ensuing subsections present the results beginning with descriptive statistics, followed by inferential statistics and testing of hypothesis, as well as detailed discussion of the respective findings.

4.3.1 Descriptive Analysis for Academic Self-Concept and Academic Achievement

The descriptive statistics on learners' ASC scores were performed as summarised in Table 4.3, in order to describe the lowest and highest values, central tendency and symmetrical distribution of the scores.

Table 4.3

Descriptive Statistics of Students' Academic Self-Concept Scores

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Academic Self-Concept Scores	51.00	129.00	92.68	13.92	.08	.45
Valid N (listwise)						

Note. N= 361.

It is demonstrated through the summarised data in Table 4.3 that students' ASC scores' minimum value was 51 while maximum was 129. The scores registered a high mean of 92.68 (*SD*= 13.92) implying that the participants mostly agreed with test items on academic self-concept. The results imply that the participants had high levels of ASC, implying that most of the students in the study were optimistic about their abilities to excel in their studies. A positive skewness value of .08 was recorded, and a kurtosis value of .45 indicating that the data was light tailed and within normal distribution. The scores were further analysed in order to categorise ASC levels among the participants.

Table 4.4

Participants' ASC Levels

		Frequency	Percent
Valid	Low	-	-
	Moderate	223	61.8
	High	138	38.2
	Total	361	100.0

Note. N= 361.

Table 4.4 demonstrates that majority, that is to say, 233 (61.8%) of the participants were within moderate levels of academic self-concept in comparison of 138 (38.2%) of those who were categorised as having high levels of ASC. None of the participants were in low levels' category. Generally, the results intimated that most of the participants were within good levels of ASC. The results imply that more participants are likely to perform well in their studies. This is consistent with the findings by Marsh et al., (2019), who termed positive ASC as essential for inspiring students learning abilities, and skills and consequently determining such learners academic success.

The descriptive statistics were also carried out on students' academic achievement scores in order to describe the lowest and highest values as well as data distribution for both raw and standardised scores. Table 4.5 summarises the participants raw scores of academic achievement.

Table 4.5

Description of Raw Scores of Academic Achievement

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
SCORE	24.00	88.00	45.62	13.37	.61	-.21
Valid N (listwise)						

Note. N= 361.

Table 4.5 indicates that the minimum value of students' raw scores in academic achievement was 24 while the maximum score was 88. The scores generated a mean of 45.62 (*SD*= 13.37) implying that students had average performance in academic achievement. The scores had a positive skewness value of .61, implying moderate skewness and low scoring, with a negative kurtosis value of -.21.

The scores on students' academic achievement were standardised through conversion to Z-scores and further to T-scores. Table 4.6 provides the standardised scores as summarised in descriptive statistics.

Table 4.6

Descriptive Analysis of Standardised Academic Achievement Scores

	Minimum	Maximum	Mean	Std. Deviation	Skew	Kurtosis
Standardised Academic Achievement Scores	34.06	73.70	50.0	10	.09	-.49
Valid N (listwise)						

Note. N= 361.

It is noted from Table 4.6 that the minimum value of the standardised scores was 34.06, and a maximum value of 73.70. The mean score was 50.00 (*SD*= 10). The scores had a positive skewness value of .09 suggesting that most of the participants' scoring for academic achievement was low, and a negative kurtosis value of .49, suggesting that the distribution was near normal.

Table 4.7

Academic Achievement Levels

Academic Achievement Levels		Frequency	Percent
Valid	Low Academic Achievement	157	43.5
	Average Academic Achievement	87	24.1
	High Academic Achievement	117	32.4
	Total	361	100.0

Note. N= 361.

Table 4.7 demonstrates that 157 (43.5%) of learners registered low academic achievement, compared to 117 (32.4%) of those categorised as having high academic achievement. The results further show that 87 (24.1%) of the sampled learners had average levels of academic achievement. It can be observed from the results that a although most of the learners were concentrated in average and high levels, a significant number of them had low academic achievement scores. Further analysis was conducted as demonstrated in Table 4.8 so as to compare the results on learners' academic achievement based on their levels of ASC.

Table 4.8

ASC Levels and Academic Achievement of Learners

ASC Levels	*N*	Mean	Standard Deviation
Moderate	223	50.98	9.054
High	138	52.57	8.055

Note. N= 361.

Table 4.8 illustrates that a significant number of students (233) were concentrated in moderate levels of academic self-concept, with a mean score of 50.98 (*SD*= 9.05) in academic achievement. The results further indicate that those within high levels of ASC were 138, with a mean score of 52.5 (*SD*= 8.05) in academic achievement. None of the students were categorised as having low levels of ASC. Students' academic self-concept had four domains, which were, self-regulation, creativity, GIA, and motivation. Further analysis was done with the intent of establishing the association of the aforesaid domains with students' academic achievement. Table 4.9 summarises the descriptive analysis of the four domains of ASC.

Table 4.9

Descriptive Analysis of ASC in Self-Regulation, GIA, Creativity and Motivation

	Minimum	Maximum	Mean	St. Deviation	Skewness	Kurtosis
Self-Regulation	14.00	40.00	26.58	4.88	.13	.01
General Intellectual Abilities	11.00	33.00	22.42	4.78	-.12	-.61
Creativity	8.00	35.00	22.65	4.59	.02	.37
Motivation	11.00	30.00	21.01	3.82	-.05	-.42

Note. N= 361.

From Table 4.9, it is demonstrated that the minimum value of self-regulation scores was 14, while the maximum was 40. The scores generated a mean of 26.58 (*SD* = 4.88), implying that most of the participants' had relatively high agreement levels. The scores in this category had a positive skewness of .13, implying that the values were mostly concentrated on the left side of the mean. The data further indicates that the lowest value in the domain of general intellectual abilities was 11, while highest was 33. The results in this category generated an average score of 22.42 (*SD* = 4.78), and a negative skewness value of -.12, implying that the participants rated themselves high on the scale. The scores had a negative kurtosis value of -.61, implying that the scores were within near normal distribution.

With regard to the domain of creativity, the scored lowest value was 8, with the being 35, A mean of 22.65 (*SD*= 4.59) was obtained. The scores had a positive skewness value of .02, and a positive kurtosis of .37, implying that the data was near normal distribution. The data on motivation domain indicates that the lowest scored value was 11 while the highest was 30. A mean score of 21.01 (*SD* = 3.82) was generated. The scores had a negative skewness of .05, suggesting that the ratings were slightly high. The scores were further analysed so as to categorise the subjects based on the levels of

the domains of ASC, and how they compared with learners' academic achievement scores. Table 4.10 summarises the results on ASC levels with regard to the domains of motivation, self-regulation, GIA, and creativity.

Table 4.10

Levels of ASC in Self-Regulation, General Intellectual Abilities, Creativity and Motivation

Category		Frequency	Percent
Self-Regulation			
	Low	130	36.0
	Moderate	138	38.2
	High	93	25.8
	Total	361	100.0
GIA			
	Low	127	35.2
	Moderate	132	36.6
	High	102	28.2
	Total	361	100.0
Creativity			
	Low	120	33.2
	Moderate	132	36.6
	High	109	30.2
	Total	361	100.0
Motivation			
	Low	132	36.6
	High	130	36.0
	Moderate	99	27.4
	Total	361	100.0

Note. N= 361.

From Table 4.10, the results indicate that 138 (38.2%) of learners had moderate levels of academic self-concept in relation to the domain of self-regulation. while a total of 130 (36.0%) were categorised as having low levels of the same domain. Those categorised as having high levels of ASC with respect to the domain of self-regulation were 93 participants, representing 25.8%. The

results further indicate that 132 (36.6%) of learners were categorised as having moderate levels of ASC based on general intellectual abilities, compared to 127 (35.2%) of the participants in the low category. Out of the participants, 102 (28.2%) were grouped as having high levels of ASC from general intellectual abilities.

It is further observed that a total of 132 (36.6%) of the students sampled were classified as having moderate levels of academic self-concept based on creativity, compared to 120 (35.2%) of them who were in the low category. Those characterised as having low levels of ASC in respect to creativity were 109 (30.2%) participants. Lastly, the results indicate that a total of 132 (36.6%) participants were categorised as having low levels of ASC with respect to motivation, while 130 (36.0%) of them had moderate levels. Only 99 (27.4%) of the students reported high levels of ASC as observed through the domain of motivation.

Further analysis was conducted so as to establish the level of students' ASC from each of the four domains on academic achievement scores as summarised in Tables 4.11, 4.12, 4.13, and 4.14. Expressed through Table 4.11 is ASC levels with regard to self-regulation on academic achievement scores.

Table 4.11

Levels of ASC Relating to Self-Regulation vs. Academic Achievement Scores

Levels of Academic Self-concept in Self-Regulation		*N*	Mean	*SD*
Low	A AS	130	51.03	8.67
Moderate	AAS	138	51.76	9.27
High	AAS	93	52.10	7.90

Note. N = 361, AAS= Academic Achievement Scores, *SD* = Standard Deviation.

From the scores in Table 4.11, the participants who were grouped at high levels of academic self-concept relating to self-regulation had the highest mean score of academic achievement (*M*= 52.10, *SD* = 7.90). It is further observed that learners in the category of moderate levels of ASC in relation to self-regulation had a mean score of 51.76 (*SD* = 9.27) in academic achievement, while those in the low-level category of ASC in relation to self-regulation had an average score of (*M* = 51.03, *SD* = 8.67) in academic achievement.

Table 4.12

Levels of ASC based on General Intellectual Abilities vs. Academic Achievement

Levels of ASC in General Intellectual Abilities		*N*	Mean	*SD*
Low	AAS	127	51.03	8.47
Moderate	AAS	132	51.37	10.02
High	AAS	102	52.54	7.01

Note. N = 361, AAS = Academic Achievement Scores, *SD* = Standard Deviation.

Table 4.12 shows that participants within high levels of academic self-concept in relation to general intellectual abilities had the highest mean score of academic achievement 52.54 (*SD* = 7.01). The results further indicate that those in the category of moderate levels of academic self-concept with respect to general intellectual abilities obtained a mean score of 51.37 (*SD* = 10.02), while those in the low category had a mean score of 51.03 (*SD* = 8.47).

Table 4.13

Levels of ASC Associated with Creativity vs. Academic Achievement Scores

Levels of Academic Self-Concept in Creativity		*N*	Mean	*SD*
Low	AAS	120	50.15	8.93
Moderate	AAS	132	51.61	8.81
High	AAS	109	53.14	8.12

Note. $N = 361$, AAS = Academic Achievement Scores, *SD* = Standard Deviation.

Based on the data in Table 4.13, learners who were categorised within high levels of academic self-concept with respect to creativity recorded the highest mean score in academic achievement 53.14 (*SD* = 8.12), in comparison to those in the moderate levels' group, who recorded a mean score of 51.61 (*SD* = 8.81) in academic achievement. It can also be observed that the participants who had low levels of ASC relating to creativity obtained the lowest mean score of 50.15 (*SD* = 8.93) in academic achievement.

Table 4.14

Levels of ASC based on Motivation vs Academic Achievement Scores

Levels of Academic Self-Concept in Motivation		N	Mean	*SD*
Low	AAS	132	49.89	9.13
Moderate	AAS	130	52.09	8.69
High	AAS	99	53.18	7.78

Note. $N = 361$, AAS = Academic Achievement Scores, *SD* = Standard Deviation.

As depicted in Table 4.14, it is apparent that learners who were categorised as having registered high levels of ASC with respect to motivation registered the highest mean score in academic achievement at 53.18 (*SD* = 7.78). This finding is comparable to that of Steinmayr et al. (2019) that motivational

constructs are strong predictors of academic achievement. It is further noted that participants who were in the group of moderate levels of academic self-concept relating to motivation had a mean score of (*M*= 52.09, *SD* = 8.69) in academic achievement. Lastly, learners who were categorised as having reported low levels of academic self-concept relating to motivation registered the least mean score of academic achievement of 49.89 (*SD* = 9.13).

4.3.2 Hypothesis Testing

A null hypothesis was advanced in the following manner for the purpose of testing the relationship between ASC and academic achievement:

H_{01}: There is no significant relationship between students' academic self-concept and academic achievement in secondary schools in Kirinyaga East Sub-County.

Table 4.15

Correlation between ASC and Academic Achievement

		ASC	Academic Achievement
ASC	Pearson Correlation	1	.14**
	Sig. (2-tailed)		.007
	N	361	361
Academic Achievement	Pearson Correlation	.14**	1
	Sig. (2-tailed)	.007	
	N	361	361

Note. N= 361.
**. Correlation is significant at the 0.01 level (2-tailed).

As expressed in Table 4.15, a weak yet positive and significant correlation was established between academic self-concept and academic achievement scores (r (359) = .14, p< 0.01). This implies that

learners with high academic self-concept scores were relatively associated with high academic achievement and vice versa. Given that the p value established in the study was below the level of significance, the advanced null hypothesis was rejected, inferring that students' ASC was significantly correlated with their scoring in academic achievement. The results thus suggest that learners who exhibit good levels of ASC tend to have optimistic academic perspectives, resulting in positive behaviours such as better educational choices, persistence in school tasks and assignments, which are all important towards academic achievement.

The data was further analysed with the intent of determining the nature of relationship between the domains of ASC. Guided by the four domains of ASC, four supplementary hypothesis were advanced as follow:

$H_{01.1}$:There is no significant relationship between students' academic self-concept in self-regulation and academic achievement.

$H_{01.2}$:There is no significant relationship between students' academic self-concept in general intellectual abilities and their scores in academic achievement.

$H_{01.3}$:There is no significant relationship between students' academic self-concept in creativity and academic achievement.

$H_{01.4}$:There is no significant relationship between students' academic self-concept in motivation and their scores in academic achievement.

The stated hypotheses were tested by conducting correlation coefficient analysis in order to establish the inter-relationships among the four ASC domains and academic achievement as summarised in the following correlation matrix.

Table 4.16

Correlation between the Domains of ASC and Academic Achievement

	ACACH	SELFREG	GENIA	Motivation	Creativity
ACACH	1				
SELFREG	.07 .14	1			
GENIA	.09 .09	.45** .000	1		
Motivation	.13* .011	.39** .000	.46** .000	1	
Creativity	.15** .005	.44** .000	.52* .000	.47** .000	1

Note. *N* = 361, SELFREG = Self=Regulation, GENIA = General Intellectual Abilities, ACACH = Academic Achievement
*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix expressed through Table 4.16 demonstrates that positive and significant correlation was established between all the domains of ASC. The highest correlation was registered between creativity and general intellectual abilities (r (359) = .52, p< 0.05), followed by creativity and motivation (r (359) = .47, p< 0.01), motivation and general intellectual abilities (r (359) = .46, p< 0.01), general intellectual abilities and self-regulation (r (359) = .45, p< 0.01), and creativity and self-regulation (r (359) = .44, p< 0.01). The least correlation occurred between the domains of motivation and self-regulation (r (359) = .39, p< 0.01).

The results also show that a weak but positive and significant correlation was found between two domains of academic self-concept and academic achievement, that is academic self-concept in the domain of creativity and the scores of academic achievement (r (359) = .15, p< 0.01), same as among

motivation and academic achievement (r (359) = .13, p< 0.05). This implies that students with positive levels of creativity, and motivation are likely to have better beliefs about their abilities, resulting in improved efforts towards educational tasks. There was weak and non-significant relationship between the domains of general intellectual abilities and academic achievement scores (r (359) = .09, p >0.01), and between self-regulation and academic achievement scores (r (359) = .07, p > 0.01).

Based on the results, the first supplementary hypothesis that there was no significant relationship between students' ASC in self-regulation and academic achievement failed to be rejected. The results indicate that there was no strong evidence to support the assumption of a relationship between ASC based on self-regulation, and academic achievement.

Given that the results also showed no significant association between ASC based on general intellectual abilities and academic achievement, the second supplementary hypothesis also failed to be rejected.

Since a significant relationship was established between academic self-concept with respect to creativity and academic achievement (r (359) = .15, p< 0.01), the third supplementary hypothesis was rejected. It was therefore inferred that an increase in academic self-concept with respect to creativity led to an increase in academic achievement and vice versa. Similarly, since a significant relationship was established between ASC with respect to motivation and academic achievement scores (r (359) = .13, p< 0.05), the fourth supplementary hypothesis that there was no significant

relationship between the two variables was rejected. This implied that an improvement in ASC through motivation led to improvement in academic achievement and vice versa.

4.3.3 Discussion of the Results

In its first objective, the study aimed at finding out the nature of relationship between students' ASC and their academic achievement. The descriptive part of the statistics demonstrated that the participants in the group with high ASC levels also registered high achievement levels in education. This was also reflected across the 4 ASC domains, and participants' academic achievement scores. The inferential statistics further revealed that significant relationship existed between academic self-concept and students' academic achievement scores. This suggests that students in the study generally held positive and optimistic beliefs about their capabilities to perform well and succeed in their education. The inferential statistics also revealed that two of the domains of ASC, that is academic self-concept with respect to the domain of creativity as well as that of motivation were significantly correlated with academic achievement. It can therefore be inferred that learners with positive levels of creativity and motivation exhibit estimable beliefs regarding their abilities in willingness to learn, solving educational tasks through being imaginative, and generating new ideas.

The results by and large agree with the published works linking ASC with improvement in students' learning outcomes. The results for the most part corroborate those of Herrera et al. (2020) in Spain, who looked into associations of self-concept and learning achievement among learners from European and North African cultures. The authors observed positive associations of learning outcomes and ASC. Additionally, all the domains of ASC that were under focus in the study,

including emotional intelligence and personality were positively correlated with students' learning achievement.

The outcomes of the present study have demonstrated that positive, or high ASC result in higher scores in educational achievement. Inferences are also made that rise in ASC results in improved learning outcomes among learners. This implies that students who exhibit high levels of ASC are likely to have constructive perspectives and positive character traits, such as self-regulation, motivation to learn, creativity and self-esteem among others, that are central in influencing learning inspirations and educational choices towards greater academic achievement.

These results justify Rogers' (1959) views in self-concept theory under which this study is underpinned, that individuals can reach their full potential through possession of components connected to self-concept, such as unconditional positive regard, self-image, self-worth, and ideal self. Contextually learners get to improve and achieve their learning goals based on self-concept, which influences the desire of what they want to achieve. The findings further augment Rogers' (1959) belief that an individual's state of self-concept can enhance the propensity of self-actualisation, and as a result propel their desire into working harder towards achieving their aspirations. It can thus be implied that learners with strong traits of self-concept are likely to develop a positive structure about who they are, and what they can achieve. This can further reinvigorate their aspirations to learn and remain focused in their studies, resulting in increased educational success.

The findings compare to those of Tuthill (2022) in respect to ASC being strongly and linked to academic achievement among learners. Although the study involved learners in postsecondary

institutions, some parallels were drawn from both studies, including methods of analysis. The outcomes of the present study also corroborate those of Iyengar et al. (2021) as discoursed in the literature. Conducted in secondary schools associated with India's Central board of higher education – CBSE, the study revealed a positive association of ASC and achievement in educational outcomes.

It was inferred that students' beliefs relating to their intellectual abilities, academic efforts, academic future, and academic interest were positively associated with their educational achievement. The outcomes of present study complement these results, given that some of the sub-scales of academic self-concept such as general intellectual abilities, and motivation were also positively correlated with a learners' academic achievement.

The reported outcomes in this research project are partly supportive of those of Gachigi et al. (2019) in a study carried out in Nairobi, Kenya, which divulged that ASC was strongly linked to positive academic outcomes in mathematics. All the same, out of the sub-scales used to measure students' self-concept, only one had significant relationship with students' learning achievement. The reported findings contribute new knowledge in the sense that ASC is not only linked to achievement in mathematics but general cognitive learning domain.

4.4 Findings on the Relationship between Achievement Motivation and Academic Achievement

Regarding the study's second objective, the researcher set out to investigate the nature of relationship between achievement motivation (AM), and academic achievement (AA). The following subsection presents the results of the study in respect to the aforementioned variables in descriptive statistics,

followed by a section for descriptive statistics, and eventually a segment with detailed discussion of the findings.

4.4.1 Descriptive Statistics for Achievement Motivation and Academic Achievement

The descriptive statistics for data on learners' AM and AA were conducted in order to obtain and compare means, frequencies and data distribution across the two variables. Table 4.17 puts into perspective the descriptive statistics for AM scores.

Table 4.17

Descriptive Statistics for Achievement Motivation Scores

	Minimum	Maximum	Mean	*SD*	Skewness	Kurtosis
Achievement Motivation	27.00	70.00	52.43	7.43	-.30	.44
Valid N (listwise)						

Note. $N = 361$. *SD* = Standard Deviation.

The descriptive statistics summary in Table 4.17 illustrate that the lowest value on learners' AM scores was 27, while the highest was 70. The results generated a mean score of 52.43 ($SD = 7.43$) indicating that the participants were largely concurring with the test items on achievement motivation. The scores had a negative skewness value of -.30, suggesting that the participants rated themselves highly on the scale, and a kurtosis value of .44, suggesting that the distribution of the data was near normal. Further analysis was carried out on the data so as to compare the participants' records based on those who recorded low, moderate or high achievement motivation scores as Table 4.18 portrays.

Table 4.18

Levels of Learners Achievement Motivation

		Frequency	Percent
Valid	Low Achievement Motivation	4	1.1
	Moderate Achievement Motivation	49	13.6
	High Achievement Motivation	308	85.3
	Total	361	100.0

Note. $N = 361$.

The results as portrayed in Table 4.18 demonstrate that majority, that is 308 (85.3%) of the participants reported high levels of achievement motivation, compared to 49 (13.6%) of those who were in the moderate level category. Only 4 (1.1%) of the participants were grouped in the low level category. The results suggest that majority of the participants held relevant behaviours and attitudes worthy of impelling them towards positive learning outcomes. Further analysis was conducted as summarised in Table 4.19 for the purpose of comparing students' academic achievement based on levels of achievement motivation.

Table 4.19

Levels of Participants' Achievement Motivation and Academic Achievement Scores

Achievement Motivation Levels	*N*	Mean	*SD*
Low Achievement Motivation	4	54.05	6.39
Moderate Achievement Motivation	49	48.07	9.26
High Achievement Motivation	308	52.11	8.53

Note. $N = 361$, *SD* = Standard Deviation.

The tabulated information demonstrates that most of the participants were concentrated in the category of those who had high levels of achievement motivation, registering a mean score of 52.11 (*SD* = 52.11). Those in the moderate levels' category were second highest number with a mean score of 48.07 (*SD* = 9.26), while interestingly. the category with low levels of achievement motivation recorded the highest mean score of 54.05 (*SD* = 6.39). There were five subscales, based on the five domains of AM, which were persistence, overcoming obstacles, competitiveness, goal orientation, and ability to take risk for failure. In this regard, the data was analysed so as to establish the interrelations of achievement motivation in the aforementioned domains and AA. Table 4.20 summarises the descriptive analysis for AM in the five domains.

Table 4.20

Descriptive Analysis of Domains of Achievement Motivation

	Minimum	Maximum	Mean	*SD*	Skewness	Kurtosis
Persistence	3.00	15.00	11.60	2.46	-.59	-.05
OVOBST	5.00	20.00	14.29	3.20	-.42	-.33
GORIENT	4.00	19.00	13.39	2.92	-.23	-.35
Competitiveness	2.00	10.00	6.95	1.85	-.29	-.001
ABTRF	2.00	10.00	6.18	1.83	.17	-.24

Note. N= 361, OVOBST = Overcoming Obstacles, GORIENT = Goal Orientation, ABTRF = Ability to take Risk for Failure, *SD* -= Standard Deviation.

The summarised information reveals that the minimum value of learners' AM scores with respect to persistence was 3 while maximum value recorded was 15. The results in this subscale registered a mean score of 11.60 (*SD* = 2.46), implying that the participants were for the most part in favour of

the test items. This suggests that a higher proportion of the participants have important traits and abilities to keep trying, and working hard without giving up on their learning goals. The scores returned a negative skewness value of -.59, implying that the participants generally rated themselves high with regard to the subscale.

The data further indicates that the subscale of achievement motivation in respect to overcoming obstacles had the least possible value of 5 and reached highest possible value of 20. The scores in this subscale received a high mean score of 14.29 (*SD* = 3.20). There was a negative skewness value of -.42 , implying that the ratings of the participants were high on the scale.

It is further indicative from the results that regarding the subscale of AM in goal orientation, the least score was 4 while the highest value was 19. The scores registered an above average mean score of 13.39 (*SD* = 2.92. This intimates that a higher proportion of the participants were likely to remain highly engaged, resulting in greater motivation towards learning achievement. This subscale registered a negative skewness coefficient of -.23 suggesting that participants' self-ratings on the scale was high. With regard to the subscale of competitiveness, the scores had a minimum value of 2 and a maximum of 10.

The scores registered a mean score of 6.95 (*SD* = 1.85), with a negative coefficient value of skewness of -.29. The scores lastly indicate that the results on the subscale of AM in ability to take risk for failure had 2 as the lowest value, and 10 as the highest value. The results generated a mean score of 6.18 (*SD* = 1.83). The kurtosis value recorded in all the five domains of AM were near zero, indicating that the data was near normal distribution.

Further analysis was carried out in order to determine the participants' levels in each of the five domains of achievement motivation as demonstrated in Table 4.21.

Table 4.21

Participants' Levels of Achievement Motivation in Various Domains

Category		Frequency	Percent
Levels of Achievement Motivation in Persistence	Low	160	44.3
	Moderate	106	29.4
	High	95	26.3
	Total	361	100.0
Levels of Achievement Motivation in Overcoming Obstacles	Low	139	38.5
	Moderate	122	33.8
	High	100	27.7
	Total	361	100.0
Levels of Achievement Motivation in Goal Orientation	Low	142	39.3
	Moderate	126	34.9
	High	93	25.8
	Total	361	100.0
Levels of Achievement Motivation in Competitiveness	Low	155	42.9
	Moderate	120	33.2
	High	86	23.8
	Total	361	100.0
Levels of Achievement Motivation in Risk for Failure	Low	121	33.5
	Moderate	159	44.0
	High	81	22.4
	Total	361	100.0

Note. $N = 361$.

As demonstrated in the frequency output in Table 4.21, 160 (44.3) of the participants were categorised as having low levels of AM with respect to persistence, compared to 106 (29.4%) in moderate, and 95 (26.3%) in high categories. Regarding the subscale of achievement motivation based on overcoming obstacles, 139 (38.5%) of the participants were categorised as having low levels, compared to 122 (33.8%) in moderate, and 100 (27.7%) in high categories. The results further indicate that out of those sampled, 142 students, representing 39.3% of the sample were grouped

under those who reported low levels, compared to 126, representing 34.9% under moderate, and 93 representing 25.8% who were in the high level in achievement motivation based on goal orientation.

It is also observed that out of the participants in the study, 155 (42.9%) were clustered under low levels of achievement motivation in the domain of competitiveness, compared to 120 (33.2%) in moderate, and 86 (23.8%) who were under high levels' category. The results further indicate that 159 (44.0%) of the participants were clustered under moderate levels, compared to 121 (33.5%) who were grouped under low levels and 81 (22.4%) under high levels in the subscale of achievement motivation in ability to take risk for failure. The results indicate that a substantive number of participants were grouped under low levels' category in all the domains of achievement motivation except that of taking risk for failure, in which more participants fell under moderate levels' category.

The scores were put under further analysis in order to compare students' levels of achievement motivation in the five subscales and their academic achievement scores as illustrated in Table 4.22.

Table 4.22

Participants' Levels in Domains of Achievement Motivation vs Academic Achievement Scores

Level Category		*N*	Mean	*SD*
Levels of Achievement Motivation in Persistence vs Academic Achievement Scores				
Low	AAS	160	51.27	8.55
Moderate	AAS	106	51.36	8.53
High	AAS	95	52.36	9.19
Levels of Achievement Motivation in Overcoming Obstacles vs Academic Achievement				
Low	AAS	139	49.42	8.83
Moderate	AAS	122	51.56	8.17
High	AAS	100	54.62	8.34
Levels of Achievement Motivation in Goal Orientation vs Academic Achievement				
Low	AAS	142	50.14	8.40
Moderate	AAS	126	52.41	8.74
High	AAS	93	52.67	8.89
Levels of Achievement Motivation in Competitiveness vs Academic Achievement				
Low	AAS	155	50.99	9.07
Moderate	AAS	120	51.74	8.68
High	AAS	86	52.44	8.05
Levels of Achievement Motivation in Risk for Failure vs Academic Achievement				
Low	AAS	121	52.00	9.03
Moderate	AAS	159	51.23	8.52
High	AAS	81	51.66	8.64

Note. N = 361, AAS = Academic Achievement Scores, *SD* = Standard Deviation.

The demonstrated information reveals that students who were categorised as having high levels of achievement motivation in the domain of persistence recorded the highest mean score in academic achievement scores of 52.36 (*SD* = 9.19). It is further observed that learners with moderate levels in achievement motivation with respect to persistence registered a mean value of 51.36 (*SD* = 8.53), while those in the low category in the same subscale had a performance of (*M* = 51.27, *SD* = 8.55)

in academic achievement scores. This suggests that persistence trait was key in instilling motivation among the participants, resulting in enhanced efforts to succeed in educational tasks.

The results indicate that learners in the group of high levels in achievement motivation in relation to overcoming obstacles obtained the highest mean scores in academic achievement scores 54.62 (*SD* = 8.34). This finding suggests that the trait of overcoming obstacles formed an important part among the participants towards positive learning outcomes. This implies that learners with good levels of this trait are likely to develop a positive mindset about their abilities, thus gaining the potency to overcome common academic setbacks like motivational barriers, unmet expectations, and cognitive learning barriers.

In the same subscale of AM in overcoming obstacles, learners clustered under moderate levels had average performance of (*M* = 51.56, *SD* = 8.17) in academic achievement scores compared to those in low category with a mean score of 49.42 (*SD* = 8.83). The results also demonstrate that participants who were in the high category in the subscale of achievement motivation in goal orientation registered the highest mean score in academic achievement 52.67 (*SD* = 8.89). The average performance of participants who were categorised under moderate levels in the same subscale stood at (*M* = 52.41, *SD* = 8.74), while those in the category of low levels stood at (*M* = 50.14, *SD* = 8.40).

In respect to the subscale of achievement motivation in competitiveness, learners in high levels' group were found to have obtained the highest mean scores in academic achievement 52.44 (*SD* = 8.05). Those within moderate levels in the same domain obtained a mean score of 51.74 (*SD* = 8.68),

while those in low levels category had the lowest mean score of academic achievement 50.99 (*SD* = 9.07).

The results further indicate that participants who had low levels of achievement motivation with respect to the ability to take risk for failure had the highest mean score of academic achievement of 52.00 (*SD* = 9.03). At the same time, it emerged that learners who were in the group of moderate levels of AM in ability to take risk for failure domain had a mean score of 51.23 (*SD* = 8.52), while those categorised as having low levels in the same domain had highest levels of academic achievement scores of 51.66 (*SD* = 8.64), implying that achievement motivation in this domain did not expressly translate into improved academic achievement.

4.4.2 Hypothesis Testing

The second objective focused on determining the relationship between AM and academic achievement among form three students. To test the possible existence of such relationship, the null hypothesis accordingly advanced:

H_{02}: There is no significant relationship between students' achievement motivation and academic achievement in secondary schools in Kirinyaga East Sub-County.

A bivariate correlation was conducted as reported in Table 4.23, between learners' achievement motivation and academic achievement scores using Pearson's correlation coefficient method.

Table 4.23

Correlation Matrix for AM and Scores on Academic Achievement

		Achievement Motivation	Academic Achievement
Achievement Motivation	Pearson Correlation	1	.198**
	Sig. (2-tailed)		.000
Academic Achievement	Pearson Correlation	.198**	1
	Sig. (2-tailed)	.000	

Note. $N = 361$.
**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix in Table 4.23 indicates that a positive and significant relationship was present between learners' achievement motivation and their scores on academic achievement (r (359) = .19, p< 0.01). The results imply that learners who were grouped as exhibiting high levels of AM also reported improved state of AA. It can therefore be inferred that an increase in achievement motivation resulted in an increase in academic achievement and vice versa. Since the p value is less than the significant level, the null hypothesis that no significant relationship existed between

students' achievement motivation and academic achievement in secondary schools in Kirinyaga East Sub-County is rejected, leading to acceptance of alternative hypothesis.

In overall, the results have shown that AM factor among the participants was positively and significantly correlated with AA. This implies that such students were able to work hard, remain focused on their learning goals amid common obstacles. It can also be implied that good levels of persistence, competitiveness and ability to take risk for failure instilled learning motivation, resulting in success in pursuit of educational goals.

The scores were further analysed with the intent of establishing the interrelations between the subscales of achievement motivation and students' academic achievement scores. Since achievement motivation was measured in five domains, the following five supplementary hypotheses were advanced:

$H_{02.1}$: There is no significant relationship between students' achievement motivation in persistence and academic achievement.

$H_{02.2}$: There is no significant relationship between students' AM in overcoming obstacles and academic achievement.

$H_{02.3}$: There is no significant relationship between students' achievement motivation in goal orientation and academic achievement.

$H_{02.4}$: There is no significant relationship between students' AM in competitiveness and academic achievement.

$H_{02.5}$: There is no significant relationship between students' AM in ability to take risk for failure and academic achievement.

To test each of the stated hypotheses, the research carried out correlation coefficient statistics with the intent of establishing the interrelationships among the five domains of achievement motivation and academic achievement.

Table 4.24

Correlation Matrix of Domains of Achievement Motivation and Academic Achievement

	ACACH	PERSTC	OVOBST	GORIENT	COMPTVS	ABTRF
ACACH	1					
PERSTC	.033	1				
OVOBST	.253**	.297**	1			
GORIENT	.155**	.153**	.349**	1		
COMPTVS	.059	.148**	.188**	.109*	1	
ABTRF	-.036	.242**	.175**	.034	.110*	1

Note. N = 361, ACACH = Academic Achievement, PERSTC = Persistence, OVOBST = Overcoming Obstacles, GORIENT = Goal Orientation, COMPTVS = Competitiveness, ABTRF = Ability to take Risk for Failure

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

From correlation matrix in Table 4.24, the results indicate that all the domains of AM were positively and significantly correlated except the domain of AM in ability to take risk for failure and that of AM in goal orientation (r (359) = .03, p> 0.05). The highest correlation was found between AM in goal orientation and AM in overcoming obstacles (r (359) = .34, p< 0.01), followed by AM in overcoming obstacles and AM in persistence (r (359) = .29, p< 0.01). The results further indicate that a positive and significant correlation was established between AM in ability to take risk for failure and AM in persistence (r (359) = .24, p< 0.01). There was positive and significant relationship

between the domains of AM in competitiveness and AM in overcoming obstacles (r (359) = .18, p< 0.01), same as the domains of AM in ability to risk for failure and that of AM in overcoming obstacles (r (359) = .17, p< 0.01). Positive and significant correlation was also established between the domains of AM in goal orientation and overcoming obstacles (r (359) = .15, p< 0.01), same as in the domains of AM in competitiveness and AM in persistence (r (359) = .14, p< 0.01). The results also indicate that the domains of AM in ability to take risk for failure was positively and significantly interrelated with AM in competitiveness (r (359) = .11, p< 0.05). The least correlation was established between the domains of AM in competitiveness and goal orientation (r (359) = .10, p< 0.05).

The results indicate that only two domains of achievement motivation were significantly correlated with academic achievement scores, that is AM in overcoming obstacles and outcomes on academic achievement (r (359) = .25, p< 0.01), and AM in goal orientation and academic achievement (r (359) = .15, p< 0.01). The domain of AM in persistence was positively but not significantly correlated with academic achievement (r (359) = .03, p = .53), same as the domain of AM in competitiveness and academic achievement grades (r (359) = .05, p = .26). The domain of AM in ability to take risk for failure was negatively correlated with academic achievement (r (359) = -.03, p< 0.05). This suggests that increased levels of the ability to take risk for failure led to decreased levels of AM and vice versa.

Based on the reported outcomes, the first supplementary hypothesis that no significant relationship was present among students' AM in persistence and academic achievement failed to be rejected.

Although positive relationship was observed between the two variables (r (359) = .059, p =.26), there was no strong statistical evidence to detect the significance of such relationship.

The second supplementary hypothesis was stated that no statistically significant relationship was present among students' achievement motivation in overcoming obstacles and academic achievement. Given that the results as articulated through Table 4.23 established a significant association between the two variables (r (359) = .25, p< 0.01), the pre-stated hypothesis was rejected. It was thus inferred that achievement motivation in the domain of overcoming obstacles was positively, as well as significantly correlated with academic achievement grades as reported by the participants.

With regard to the third supplementary hypothesis, it was hypothesised that no relationship existed between students' AM in goal orientation and participants' scores in academic achievement. From the results, a significant relationship was established between the two variables (r (359) = .15, p< 0.01). Consequently, the third supplementary hypothesis was also rejected, implying that adequate statistical power to support the evidence of existence of a relationship between the learners' achievement motivation in the domain of goal orientation and their academic achievement scores was established.

The results however divulged no significant relationship between the students' achievement motivation in the domain of competitiveness and academic achievement scores (r (359) = .05, p = .26). Consequently, the fourth supplementary hypothesis that no statistically significant relationship existed between students' achievement motivation in competitiveness and academic achievement failed to be rejected.

In the same manner, a negative and non-significant relationship was found between students' achievement motivation in ability to take risk for failure and academic achievement scores (r (359) = -.03, p< 0.05). Accordingly, the fifth supplementary hypothesis advanced that there was no significant relationship between students' achievement motivation in ability to take risk for failure and academic achievement failed to be rejected, implying that higher values in the domain of taking risk for failure were associated with low values in academic achievement and vice versa.

4.4.3 Discussion of the Results

Guided by objective two, the researcher's interest was to determine the form of relationship that AM and academic achievement would have among students in secondary schools in Kirinyaga East Sub-County. The results from descriptive analysis indicated that the participants reported high levels of achievement motivation. The inferential statistics established that students' achievement motivation and academic achievement scores were positively and significantly correlated (r (359) = .19, p< 0.01). Even though such relationship was weak, it was evident that increased value of AM led to an increase of value in academic achievement.

By and large, the results intimated that the AM factor among the students drove them to working hard, and persistently amid the common challenges and obstacles associated with learning environment. Such students were able to remain focused on their learning goals, resulting in increased educational success.

The results arrived at in the study demonstrate some form of consistencies with those of Kumar and Tanka (2020) in a study from India, which found that students' achievement motivation, and educational adjustment were positively correlated with educational achievement. This implies that increased achievement motivation among students is likely to create a positive desire for success among such students, resulting in improved academic achievement. This further corroborates the findings by Karlina et al. (2021) from Indonesia, where achievement motivation was found to positively influence learning outcomes in introduction to accounting among college students.

The results of the present study also intimated that regarding domain specificity, overcoming obstacles, and goal orientation were each significantly correlated with learners' academic achievement. These results lend credence to an earlier findings by Steinmayr et al. (2019), which found goal orientation to be associated with attainment in mathematics in German schools. The results further support those of Li et al. (2023) in a Chinese based study that associated achievement motivation in relation to overcoming obstacles with learning performance.

The study concluded that learners with high achievement motivation have the urge to work persistently through difficult environments and through challenging factors, resulting in their ability to overcome common obstacles associated with learning processes, and ultimately achieve exceptional educational performance.

It has been established that students' achievement in the domains of persistence and competitiveness were positively, albeit not significantly correlated with learners' academic achievement. This implies that increased achievement motivation results instill among the learners the personality trait of being

persistent and persevering in tasks until they are successfully completed notwithstanding the obstacles. Through achievement motivation, learners are also likely to be competitive and desire to perform better than their peers resulting in increased efforts to succeed in educational achievement.

For the most part, the results are in concurrence with those of Kwajaffa (2022) from Nigeria, in an investigation that found achievement motivation in general to be correlated with academic achievement. The results also concur with those of Muthee and Murungi (2019) who found achievement motivation to be associated with learning performance. Although the sample of this study involved learners from both private and public school, it was concluded that achievement motivation was linked to students' positive learning outcomes.

The results, however do not fully agree with those of Erentaite et al. (2022) which found discordant relationships between achievement motivation and academic achievement in sense that learners with high achievement motivation obtained low academic achievement scores and vice versa in some subject profiles.

4.5 Findings on Prediction of Academic Achievement from Academic Self-Concept, and Achievement Motivation

Through its third objective, the study looked into the interaction between ASC and AM in predicting learners' academic achievement. To make the determination on interaction and predictive value in respect to the aforementioned variables, it was necessary to perform multiple regression analysis. The ensuing section presents the results from the analysis, as well as hypothesis testing, and discussion of the results.

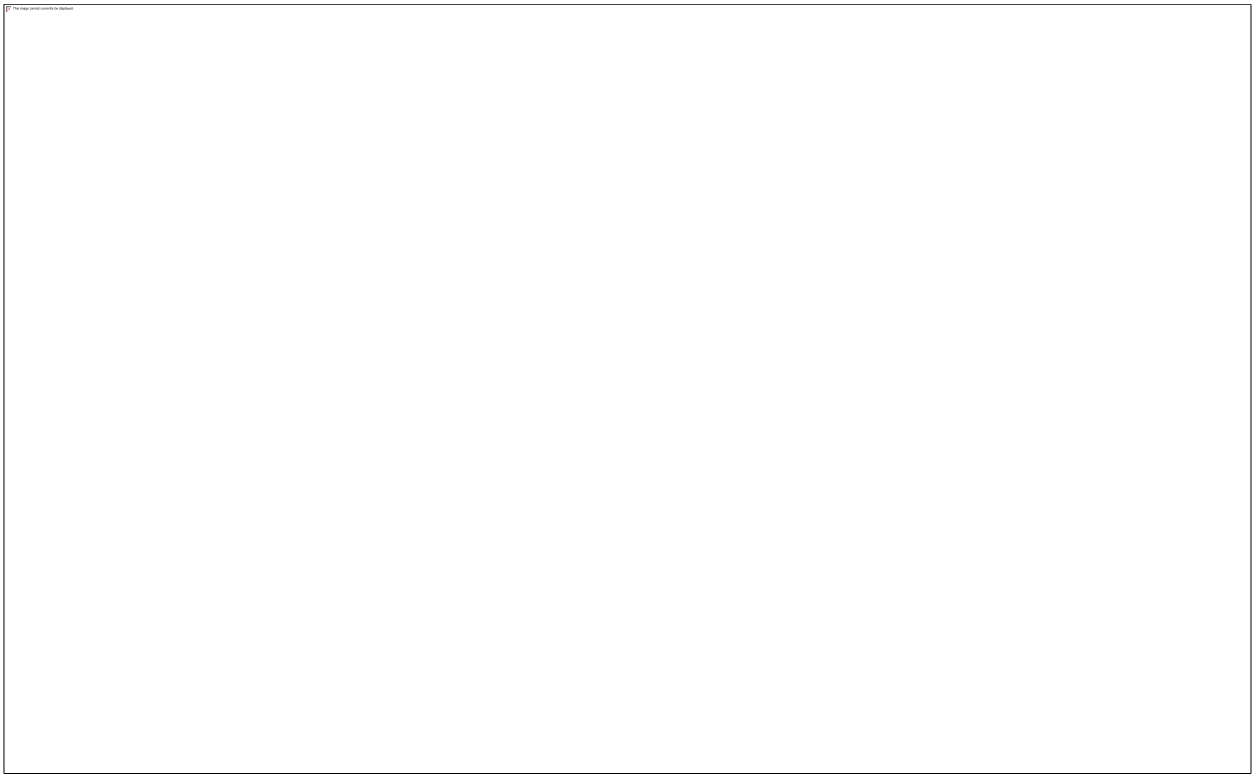
4.5.1 Multiple Regression Analysis

The regression diagnostic results are presented as shown in Figures 4.1, 4.2, 4.3 in order to test the main assumptions regarding the interactions among predictor and outcome variables.

a. Constant Variance Test for Heteroscedasticity

Figure 4.1

Scatter Plot for Standardised Residual and Predicted Values



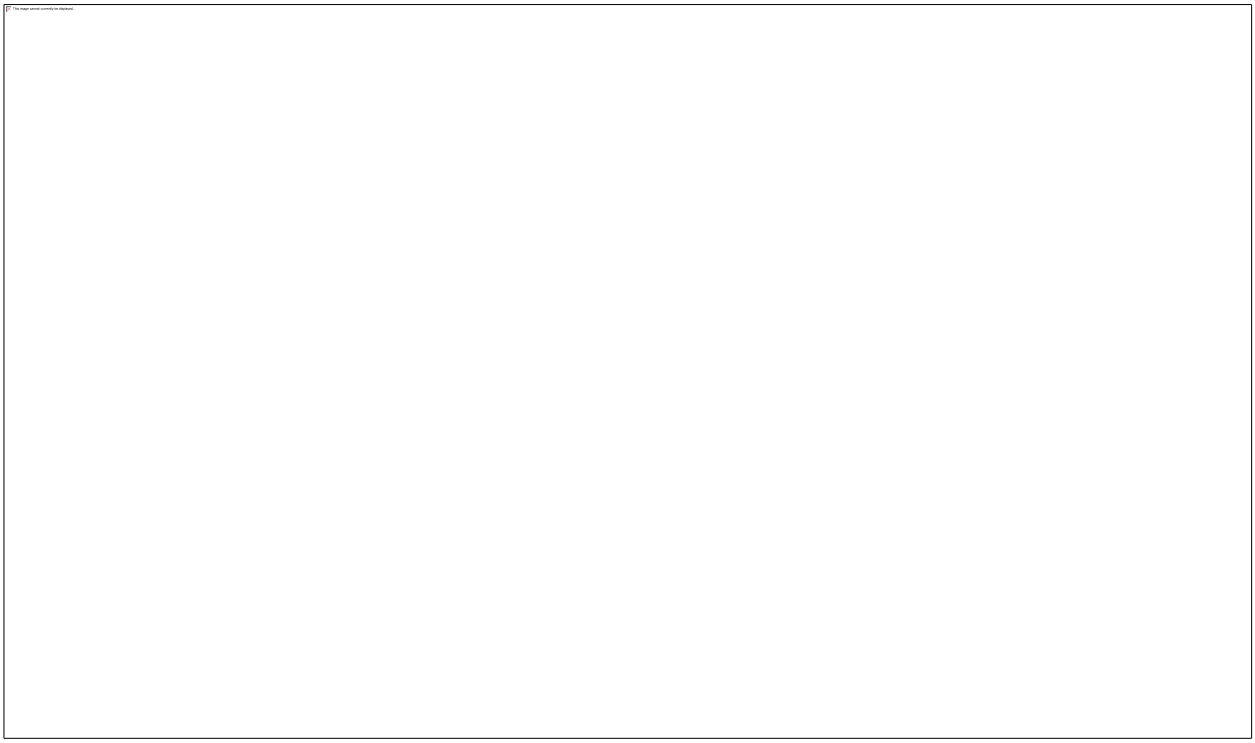
As depicted in Figure 4.1, it is observed that homoscedasticity was not violated as the scatter plot does not form a specific pattern, and none of the values fall outside negative -3 to +3 in both standardised residual, and standardised predicted value axes. Thus, the results suggest that the residuals had the same variance and spread along the regression line, thus satisfying the assumption for absence of heteroscedasticity.

b. Normality Assumption Test

The assumption for normal distribution of residuals was tested through histogram for residuals and normal probability plot as illustrated in Figures, 4.2 and 4.3.

Figure 4.2

Histogram for Standardised Residual



As expressed through Figure 4.2, the residuals followed a bell-shaped curve, suggesting that the distribution was symmetrical around the mean, thus satisfying the assumption for normality.

Figure 4.3

Normal Probability Plot of Standardised Residual

Figure 4.3 reveals that the data points largely fell along a diagonal line, suggesting that the assumption for linear relationship between independent or predictors and dependent (outcome) variable and normal distribution of residuals were met. A multiple regression assumption test for multicollinearity was also conducted and reported as follows.

Table 4.25

Multicollinearity of ASC, Achievement Motivation and Academic Achievement

	Tolerance	VIF
Academic Self-Concept	.750	1.334
Achievement Motivation	.750	1.334

Note. N = 361.

a. Dependent Variable: Academic Achievement

From the results expressed through Table 4.25, it is manifest that no multicollinearity was detected among the independent variables. This is evidenced by the fact that variance inflation factors (VIF) for academic self-concept, and achievement motivation scores as independent variables were way below the value of 10, while tolerance values as the reciprocal factors of VIF were above 0.2 (Kim. 2019).

4.5.2 Hypothesis Testing

Table 4.26

Model Summary Reporting the Prediction of Academic Achievement from ASC and AM

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
1	.20[a]	.04	.04	8.55

Note. $N = 361$.

a. Predictors: (Constant), Achievement Motivation (AM), Academic Self-concept (ASC)

b. Dependent Variable: Academic Achievement

As shown in the model summary in Table 4.26, a multiple correlation coefficient of .20 was achieved, implying that there was weak prediction of outcome variable from predictor variables. The results further divulge that the adjusted R^2 of learners' ASC and achievement motivation was (R^2 =.04), indicating that the two independent variables, that is to say, academic self-concept, and achievement motivation had minimal predictive value given that they explained less than 10%, ideally just about 4 percent of the total variance of academic achievement as the study's outcome or dependent variable. An analysis of variance or ANOVA test was also performed as demonstrated through Table

4.27 so as to determine the significance of the interrelations among the predictors and outcome variables.

Table 4.27

ANOVA of ASC, and AM on Scores of Academic Achievement

Model		Sum of Squares	*df*	Mean Square	*F*	Sig.
1	Regression	1136.190	2	568.09	7.77	.00[b]
	Residual	26172.196	358	73.10		
	Total	27308.386	360			

a. Dependent Variable: Scores on Academic Achievement

b. Predictors: (Constant), Achievement Motivation, ASC Scores

Note. $N = 361$.

From Table 4.27, the results demonstrate that students' ASC, and AM scores were significantly correlated with their academic achievement scores (F (2, 358) = 7.77, $p < .05$.

Table 4.28

Beta Coefficients for ASC, AM, and Academic Achievement

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	41.47	2.72		15.20	.00
	Academic Self-Concept	.05	.05	.05	.96	.33
	Achievement Motivation	.14	.05	.16	2.82	.00

Note. $N = 361$.

a. Dependent Variable: Academic Achievement Scores

Table 4.28 shows that a significant predictive value from ASC was established on academic achievement scores (β = .05, p = .05). It is further expressed that achievement motivation had a positive yet non-significant predictive value on academic achievement (β = .16, p > .05).

The reported outcomes are consistent with the data in the model summary as exemplified through Table 4.26, in which the two predictor variables, that is academic SC, and AM were found to have explained about 4 percent variance of academic achievement as the outcome variable. Based on the results, a predictive model can be established as reported in regression equation for academic achievement from academic SC and AM, which established (F (2, 358) = 7.77, p < .05, and R^2 = .04. From the results, a significant predictive model illustrated through equation 1 was generated as:

$\hat{Y}$ = 41.47 + 0.14 (ACM) (R2 = 0.04)

Thus

$\hat{Y}$ = Predicted value of academic achievement score

ACM = Achievement Motivation Score

Consequently, the hypothesis that there was no significant prediction equation of academic achievement from students' ASC, and AM in secondary schools in Kirinyaga East, Kirinyaga County was rejected. Nonetheless, it is worth noting that the R^2 value signifying the total variance with regard to students' academic achievement was only 4 percent as explained by collective effect of ASC and AM. This suggests that over 90 percent of learners' academic achievement was explained by different factors.

4.5.3 Discussion of the Results

Through its third objective, the study aimed at establishing the prediction equation of academic achievement from ASC, and AM. It emerged from the findings that a significant relationship was found between the independent and dependent variable, as exemplified in the ANOVA results in Table 4.26 (F (2, 358) = 7.77, $p < .05$. The results established a significant predictive value of academic achievement from academic self-concept (β = .05, p = .05), and a positive but non-significant predictive value of academic achievement from achievement motivation (β = .16, $p >$ .05). Subsequently a significant predictive equation was also established among the variables. Although the total variance as explained by R^2 was minimal, the results in general showed that academic self-concept and achievement motivation played a pivotal role in students learning and educational achievement.

The results can also be partially comparable to those of an earlier study by Okotie (2020), which found academic SC and AM to positively predict learning performance in mathematics among senior secondary school learners in Nigeria's Edo State. The findings intimated that improved academic achievement played a positive role in stimulating achievement motivation among students towards being confident and desiring to perform better. Nonetheless, the present study went further to assess correlation between the two variables in predicting learning achievement in all the subjects, thus augmenting the existing knowledge regarding the interaction among the underscored variables.

The findings of the present study also conform to those of Steinmayr et al. (2019), where it was reported that motivational constructs, and self-concept predicted students' academic achievement more than other constructs such as intelligence, task values, and learning goals, with academic self-

concept being identified as the strongest predictor. The results showed that an increase in academic self-concept and achievement motivation resulted in increase in academic achievement among students. This implies that students' self-awareness of their capabilities for learning and attaining better learning outcomes, as well as their individual motivation and orientation towards achievement made them to set challenging goals and work towards achieving them.

The results are also consistent with findings by Herrera (2020) from Spain, which found academic self-concept, intellect, and family self-concept to have positively predicted students' grades in natural sciences. Further, a study by Ondieki (2022) from Kisumu East in Kenya found academic self-concept, and achievement motivation to have a strong prediction of (R = 0.68), with the total variance of academic achievement from the combined effect of the two variables being explained by (R^2 = .46), that is to say 46 percent. Despite the strong predictive values, the findings are consistent to those of the present study given that the later established significant, and positive, albeit weak predictive value of academic achievement from academic self-concept, and achievement motivation.

The results are also in harmony with the precepts of Roger's (1959) self-concept theory that individuals can achieve their goals where there is fulfillment in a number of aspects in their lives, such as self-worth, positive regard, congruence, and personality development. This implies that high levels of academic self-concept among students is likely to result in greater determination to succeed and do well in their studies. Likewise, the results are aligned with the tenets of McClelland's (1953) achievement motivation theory that achievement need can stir up individuals towards navigating through challenging goals and reaching exceptional success. In essence, students with high achievement motivation get to develop dynamic components like achievement motives and

motivational beliefs towards exemplary performance and desire for accomplishing learning goals, resulting in greater academic achievement.

4.6. Findings on Gender Differences in ASC, AM and Academic Achievement

Through its fourth objective, the study explored on whether there was difference of gender in academic SC of learners, their achievement motivation, and academic achievement. The following subsections deal with participants' outcomes starting with descriptive statistics, inferential analysis and testing of hypothesis, as well as discussion of the results.

4.6.1 Description of Gender Differences in Students' ASC

The ratings on participants' academic SC were analysed in order to establish their frequency distribution, and central tendency and variability, that is mean values and standard deviations.

Table 4.29

Gender Differences in Participants' Academic SC

	Gender	*N*	Mean	*SD*
Academic Self-Concept	Male	141	90.56	15.13
	Female	220	94.04	12.94

Note. $N = 361$. *SD* = Standard Deviation.

As expressed through Table 4.29, the mean score for female students ($M = 90.04$, $SD = 12.94$) in academic self-concept was comparatively higher than that of male students ($M = 90.56$, $SD = 15.13$). Students' academic self-concept scores were categorised based on the learners whose scores were low, moderate or high. A cross tabulation was further conducted as shown in Table 4.30 in order to compare the distribution of the groups based on their gender.

Table 4.30

Participants' Levels of ASC and Gender

			Gender		
			Male	Female	Total
Academic Self-Concept Levels	Moderate	Frequency	89	134	223
		% of Total	24.7%	37.1%	61.8%
	High	Frequency	52	86	138
		% of Total	14.4%	23.8%	38.2%
Total		Frequency	141	220	361
		% of Total	39.1%	60.9%	100.0%

Note. $N = 361$.

The results indicate that among the participants in the category of moderate levels of academic self-concept, 134 (37.1%) were female, while 89 (24.7%) were male. The results further suggest that under the high category of ASC, there were more female students 86 (23.8%) compared to their male counterparts 52 (14.4%). In overall, the results indicate that there were more female students, compared to male students in both high and moderate levels of academic self-concept.

4.6.2 Description of Gender Differences in Achievement Motivation

The participants' scores in achievement motivation were analysed with the aim of establishing the frequency distribution, mean scores and nature of dispersion as summarised in descriptive statistics in Table 4.31.

Table 4.31

Participants' Gender Differences in Achievement Motivation

	Gender	*N*	Mean	*SD*
Achievement Motivation	Male	141	51.40	7.67
	Female	220	53.09	7.21

Note. $N = 361$. *SD* = Standard Deviation.

As expressed through Table 4.31, female students had a comparatively higher mean score 53.09 (*SD* = 7.21) compared to that of their male counterparts (M = 51.40, *SD* = 7.67). The scores had been categorised into different levels based on the participants who had low, moderate or high levels of achievement motivation. Thus, the scores were subjected to a cross tabulation as depicted in Table 4.32 in order to compare the stated levels based on gender.

Table 4.32

Levels of Achievement Motivation and Gender

			Gender		
			Male	Female	Total
Achievement Motivation Scores	Low Achievement Motivation	Count	4	0	4
		% of Total	1.1%	0.0%	1.1%
	Moderate Achievement Motivation	Count	23	26	49
		% of Total	6.4%	7.2%	13.6%
	High Achievement Motivation	Count	114	194	308
		% of Total	31.6%	53.7%	85.3%
Total		Count	141	220	361
		% of Total	39.1%	60.9%	100.0%

Note. $N = 361$.

Table 4.32 portrays that among the participants in the category of high levels of achievement motivation, majority, that is 194 (53.7%) were female, in comparison to 114 (31.6%) male. The results also show that there were relatively more female students 26 (7.2%) among those categorised as having moderate levels of achievement motivation compared the number of males in the same category 23 (6.4%). There were 4 (1.1%) of male students in the category of participants with low levels of achievement motivation, while no female student was recorded in this group. The results in overall indicate that there were more female than male students in both high and moderate levels of achievement motivation. This implies that female students have greater levels of motivation and are likely to pursue their learning goals more than males. This is aligned with the findings by Khan et al. (2022), in a study that reported girls to have been more motivated academically compared to boys.

4.6.3 Gender Differences in Academic Achievement

The scores of the participants on academic achievement were analysed as exemplified through Table 4.33 so as to determine the frequency distribution, mean scores and dispersion of data.

Table 4.33

Gender Differences in Academic Achievement

	Gender	*N*	Mean	*SD*
Academic Achievement	Male	141	50.57	7.038
	Female	220	52.23	9.588

Note. $N = 361$, *SD.*

It is demonstrated through Table 4.33 that a relatively higher mean score was registered in academic achievement among girls 52.23 ($SD = 9.58$) compared to that of boys 50.57 ($SD = 7.03$). The scores had also been categorised according to different groups based on the participants who had low, moderate or high levels of academic achievement. Hence, a cross tabulation as shown in Table 4.34

was performed in order to compare students' academic achievement levels based on gender representation.

Table 4.34

Participants' Levels of Academic Achievement and Gender

			Gender		
			Male	Female	Total
Academic Achievement Levels	Low	Count	44	72	116
		% of Total	12.2%	19.9%	32.1%
	Average	Count	58	62	120
		% of Total	16.1%	17.2%	33.2%
	High	Count	39	86	125
		% of Total	10.8%	23.8%	34.6%
Total		Count	141	220	361
		% of Total	39.1%	60.9%	100.0%

Note. $N = 361$.

As exemplified in Table 4.34, among the participants categorised under high levels of academic achievement, majority (86) were female, representing 23.8%, compared to 39 males, translating to 10.8%. The results also indicate that there were more female students among the participants with low academic achievement levels (72), translating to 19.9% in comparison to 44 (12.2%) males. The results further indicate that among those sampled, learners categorised under average academic achievement were nearly split in half between the two genders, with females having a slight edge of 62 (17.2%), compared to males 58 (16.1%).

4.6.4 Hypothesis Testing on Gender Differences in ASC, AM, and Academic Achievement

Through the fourth objective, the study investigated if there was difference of gender in academic SC and AM on academic achievement among students. To determine if there was such difference, null hypotheses were advanced in the following manner.

H_{04}:There is no significant difference in gender in ASC and AM on academic achievement among form three students in secondary schools in Kirinyaga East Sub-County. Testing of the aforesaid was done through formulation of the following three supplementary hypotheses:

$H_{04.1}$: There is no significant difference in gender in ASC among form three students in secondary schools in Kirinyaga East Sub-County

$H_{04.2}$: There is no significant difference in gender in AM among form three students in secondary schools in Kirinyaga East Sub-County

$H_{04.3}$: There is no significant difference in gender in academic achievement among form three students in secondary schools in Kirinyaga East Sub-County.

a. Testing the first Supplementary Hypothesis

The first supplementary hypothesis was tested as demonstrated through Table 4.35, by subjecting the scores on academic achievement and gender representation to independent samples t-test.

Table 4.35

Independent Samples t-test for Participants' Gender Differences in Academic Self-Concept

						Sig. (2-tailed)
		F	Sig.	*t*	*df*	
Academic Self-Concept	Equal variances assumed	3.58	.059	-2.33	359	.02
	Equal variances not assumed			-2.25	264.73	.02

Note. $N = 361$.

According to the data in Table 4.35, it is evident that a significant gender difference in academic self-concept was established $t(359) = -2.25$, $p = .02$, with the difference being in favour of female students. This finding is supported in Table 4.28, where the results indicate that female students attained a higher mean score than their male counterparts. Based on the results, the first additional

null hypothesis that there was no significant difference in gender in academic self-concept among form three students in secondary schools in Kirinyaga East Sub-County was rejected.

b. Testing of the Second Additional null Hypothesis

The second additional hypothesis was tested as expressed through Table 4.36 by subjecting the scores of AM and gender representation to an independent samples t-test.

Table 4.36

Independent Samples t-test for Learners' Gender Differences in Achievement Motivation

		F	Sig.	*t*	*df*	Sig. (2-tailed)
Achievement Motivation	Equal variances assumed	.21	.64	-2.11	359	.03
	Equal variances not assumed			-2.08	285.06	.03

Note. $N = 361$.

Table 4.36 demonstrates that there was significant difference in the variances between students' achievement motivation scores and gender representation $t(359) = -2.08$, $p = .03$. The gender difference in achievement motivation favored female students as underscored in mean differences in Table 4.30. Thus, the 2nd supplementary null hypothesis that no significant difference in gender in AM among students in Kirinyaga East Sub-County secondary schools is rejected.

b. Testing the third null Supplementary Hypothesis

The third additional hypothesis as derived from the third objective was tested by subjecting the scores for students' academic achievement and their gender representation to an independents samples' t-test as exemplified through Table 4.37.

Table 4.37

Independent Samples t-test for Learners' Gender Differences in Academic Achievement

		F	Sig.	*t*	*df*	Sig. (2-tailed)
Academic	Equal variances assumed	17.25	.000	-1.77	359	.07
Achievement	Equal variances not assumed			-1.89	352.39	.05

Note. $N = 361$.

The results as summarised in Table 4.37 indicate that a significant difference was established in the variance of students' academic achievement scores and their gender representation $t(359) = -1.89$, $p = .05$. The gender difference in academic achievement favoured female students as evinced Table 4.32, which shows girls to have attained a higher mean score compared to boys. Thus, these results taken into consideration, the third additional hypothesis stated that there was no significant difference in gender in academic achievement among secondary school learners in Kirinyaga East Sub-County is rejected.

4.6.5 Discussion of the Results

Through its fourth objective, the study explored on gender difference in learners' ASC, achievement motivation and academic achievement. The reported results have shown that gender differences were indeed extant in students' mean scores, with the difference being in favour of female students in all the three aforementioned variables, The tested hypotheses provided evidence that there was significant difference in variances of gender in ASC, AM, and academic achievement. The results implied that female students surpassed their male counterparts in how they perceived their academic

abilities, and in the desire for excellence in education, as well as actual performance in learning outcomes.

The results agree for the most part with existing research dealing with the underscored constructs. In a study from Spain, Herrera (2020) explored on whether there was difference in academic self-concept among other psychological components, and gender of the students. A significant difference was reported in learners' academic self-concept and gender, with girls being reported to have higher grades compared to boys. These results are consistent with those of the present study, even though the sample was drawn from learners primary schools.

The findings further corroborate those of Valls (2022) in a study from Switzerland, which found girls to have better self-concept in language, with boys showing better self-concept in mathematics. The study however had contrasting difference from the present one as it was delimited to self-concept and forced social comparison. However, other studies have also shown that male and female students differ in various types of academic self-concept. For instance, Gachigi (2019) found female students to have higher self-concept in mathematics while Arens et al. (2022) found male students to have recorded higher self-concept on the same subject. Yet, Anierobi (2019) reported no significant gender variation in ASC among Nigerian students.

These studies however had some dissimilarities, as they explored gender differences based on mathematics and language-related self-concepts. The findings are also aligned with those of Okyere (2019), from Ghana, in which difference in gender was revealed in students' academic achievement in mathematics. These results largely conform to the existing research which has found gender

difference in mathematics self-concept in favour of boys as reported by Wang and Yu (2023), while girls are found to achieve higher in language-related self-concept (Valls, 2022). The findings are however inconsistent with those of Wakasiaka (2021) in an earlier study from Nairobi, where no significant gender difference was reported in students ASC. The study however targeted primary school pupils, while the present study was interested in secondary school students in form three.

Regarding gender difference in AM and academic achievement, the present study has established a significant difference, with such change being in favour of female students. These findings lend credence to those of Sharma and Lavania (2022), in a study based on India's perspectives which established a significant gender difference in entrance engineering examination in favour of girls. Nonetheless, a point of divergence is notable given that the findings were based on a sample from college students and only assessed the difference from entrance engineering test. Further, only a small sample of 60 participants was involved compared to the present study that involved 361 participants.

The findings also differ from those of Faakye (2020) in a Ghanaian based study that targeted high school students in a pre-tertiary educational centre. The study found no significant difference in gender regarding learners' achievement motivation. However, other by Mwaura (2022) based on Kenyan perspectives reported significant gender difference in students' motivation levels with the difference favoring girls. The contrasting findings however may be rationalised through the fact that some of the reported studies relied on small samples, targeted participants from diverse perspectives, including pupils from primary school, and college students, factors that could have a bearing on how people behave.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of key findings of the study, conclusions of the reported outcomes, as well as recommendations for policy and suggestions for areas that may require more research in the future. The sections are presented in accordance with the objectives.

5.2 Summary

The study aimed at establishing the nature of relationship among academic SC, AM, and academic achievement among students in Kirinyaga East sub-county secondary schools. The study also intended to establish a prediction equation of academic achievement from academic SC, and AM. The study further investigated whether there was gender difference in students' ASC, achievement motivation and academic achievement.

With respect to the first objective, the study intended to find out the relationship between academic self-concept and academic achievement. The findings indicated that students who were placed in the category of high levels of academic self-concept had higher mean scores compared to the other groups. There was empirical evidence for significant relationship with regard to learners' ASC and academic achievement scores. The results further indicated that among the subscales of academic self-concept, two out of the four domains, that is motivation, and creativity were significantly correlated with academic achievement. The other two domains, that is self-regulation, and general intellectual abilities were positively but not significantly correlated.

On second objective, the study's intent was to determine the relationship between AM, and academic achievement. It emerged from the findings that a positive and significant relationship was established between students' achievement motivation and their academic achievement scores. With regard to specific domains of achievement motivation, the findings intimated that two out of the five domains, that is overcoming obstacles, and goal orientation were positively and significantly correlated with learners' academic achievement scores. The domains of persistence and competitiveness were positively interrelated with academic achievement, even though such relationship was non-significant. There was negative and non-significant correlation between ability to take risk for failure and learners' scores of academic achievement.

Through its third objective, the focus of study was trained on establishing the prediction equation of academic achievement from academic self-concept, and achievement motivation. The results from multiple regression indicated that a significant prediction equation was established $\hat{Y} = 41.47 + 0.14$ (ACM) ($R^2 = 0.04$). It was worth noting that even though a predictive model was established between independent and dependent variable, the effect of such effect was minimal given that the variation explained by the model was below 10 percent. This therefore showed that more than 90 percent of learners' academic achievement was explained by other factors aside from the combined effect of the two independent variables.

Regarding the fourth objective, which was to explore on whether there was gender difference in students' academic self-concept, achievement motivation, and academic achievement, the descriptive statistics showed that female students obtained a relatively higher mean score than their male counterparts. It was also revealed that there were more female students among the categories

of participants with high and moderate levels of ASC. Female students were also reported to have attained a higher mean score than their male counterparts in achievement motivation.

More girls than boys were also in the categories of students with high and moderate levels of achievement motivation. These trends were also reflected in academic achievement scores, where girls were found to have higher mean scores in academic achievement, in addition to leading in the category of participants with high levels of grades. The inferential statistics revealed significant difference based on students gender in ASC. A significant difference was also established in the variances of achievement motivation and gender of the participants. Significant gender difference was also divulged in students' academic achievement grades.

5.3 Conclusion

It was established based on the study outcomes that as hypothesised, positive association existed among learners' ASC, AM, and academic achievement. The findings provided adequate evidence that positive and significant correlation existed between ASC, and students' academic achievement. It was also established that a positive and significant relationship existed between AM, and academic achievement among the sampled students. On domain specificity, however, it emerged that with respect to academic self-concept, only two out of the four domains, that is motivation, and creativity had significant relationship with academic achievement. Inferences were therefore drawn that the higher the levels of motivation and creativity, the greater the ASC, and subsequently the higher the educational achievement grades.

Based on the foregoing, teachers need to devise ways that can promote achievement motivation among the learners by getting the most out of components of motivation and creativity. There is need for such students to be exposed to creative thinking activities, as well as motivation-oriented feedback so as to rekindle their strengths and engagement towards achieving their learning goals.

Regarding achievement motivation and academic achievement, it occurred that despite the evidence confirming the hypothesised association between the two variables, only two out of five domains of achievement motivation were significantly correlated with academic achievement. These are overcoming obstacles, and goal orientation. It can therefore be concluded that increased levels of achievement motivation relating to learners' own persuasion to navigate through obstacles, and goal orientations, through which students would have increased urge to accomplish learning goals, resulted in increased levels of academic achievement. It is therefore incumbent upon teachers to devise ways for promoting and modelling components of students' achievement motivation as essential facets of improving their grades and learning outcomes.

The study established a significant predictive equation among academic self-concept, achievement motivation, and academic achievement. A significant predictive value of academic achievement was established from academic self-concept ($\beta = .05$, $p = .05$), while a positive but non-significant predictive value of academic achievement was established from achievement motivation ($\beta = .16$, $p > .05$). The study therefore found academic achievement to have been a better predictor of academic achievement compared to achievement motivation. In overall, however, it was established that the combined effect of academic self-concept and achievement motivation on learners' academic achievement was minimal.

It emerged that only 4 percent variance of academic achievement as exemplified in R^2 value was explained by the combined effect of the two predictor variables. Although the study suggested that other factors may be explaining the variance in academic achievement more than academic self-concept, and achievement motivation, there is need for enhancing self-awareness among the learners about their capabilities for learning, as well as building on their individual motivation and orientation towards achievement. Integration of such ingenuity in instructional activities can be resourceful and go a long way in inspiring creativity and motivation in learning as well as promoting persistence and orientation in learning goals towards achievement of better grades.

Gender was found to be a significant factor that may have a bearing on the variance of students' ASC, achievement motivation, and subsequently educational achievement. This argument rests on the basis that a significant difference in gender was established in students' scores in all the three variables, that is ASC, AM, and academic achievement. It emerged that female students excelled more than boys in their self-ratings of ASC, AM, and academic achievement grades. Given that the study also found academic self-concept, and achievement motivation to be significantly correlated with learners' academic achievement, it is imperative for educational systems to devise case management and intervention strategies focused on enhancing key components of the said constructs among boys. Such interventions can go a long way in enhancing male students' self-beliefs regarding academic abilities and need for achievement, and subsequently narrow the gender gap in academic achievement.

5.4 Recommendations

Based on the findings and conclusions, the study made the following policy recommendations and suggestions for areas that may require further investigations.

5.4.1 Policy Recommendations

i. The first objective aimed at finding out the relationship between ASC and academic achievement. The findings demonstrated that the two variables were positively and significantly correlated. Creativity and motivation domains of ASC were also significantly correlated with academic achievement. There is need therefore for school curriculum to be aimed at enhancing the development of other traits associated with ASC, like self-regulation, and general intellectual abilities.

ii. In its second objective, the study aimed at determining the relationship between achievement motivation and academic achievement. From the findings, achievement motivation was found to be positively and significantly correlated. The study recommends for school based approaches tailored on reinforcing students' beliefs and behaviours towards fostering persistence, competitiveness, and ability to take risk for failure. This could be done by encouraging collaboration in the classroom, encouraging students to take risks and learning through mistakes instead of concealing them, offering constructive feedback, and celebrating achievements.

iii. The third objective sought to establish the prediction equation of academic achievement from academic self-concept, and achievement motivation. The study established positive and significant relationship among academic self-concept, achievement motivation, and learners' academic achievement. Given that academic self-concept and achievement motivation have a positive bearing on learning outcomes, the education ministry through its training and capacity building institutions should prioritise on equipping teachers, and teachers' trainers with skills

focused on developing and harnessing key components of the said constructs among students towards improving their learning abilities and outcomes.

There is need for school leaderships, teachers, and parents to promote school and home environments that are supportive and conducive for positive behavioural development among the learners for enhanced beliefs on learning abilities and need for achievement and educational success. Further, schools should promote instructional strategies aimed at promoting components of ASC and AM found to be strongly linked to academic achievement.

iv. The fourth objective was to investigate if there was difference of gender in academic self-concept and academic motivation on academic achievement. Since the study found female students to have an advantage over their male counterparts in ASC, AM, and academic achievement, schools should devise practical intervention strategies targeted on boys as a measure of narrowing gender difference.

5.4.2 Recommendations for Further Research

i. Further investigations should be done on the same variables of the study in order to establish whether similar results would be replicated.

ii. The study delimited itself to academic self-concept and achievement motivation, and their prediction on academic achievement. Given that the combined effect of the two constructs in explaining academic achievement was minimal, further studies should probe the role of other psychological factors that this study did not explore on. There are many other psychological factors that were not considered, including self-efficacy, stress, test anxiety, depression, and interpersonal relationships among others. The study also delimited itself to form three students, and only public secondary schools were considered, thus leaving out private schools. Future researchers may want to explore these factors, and areas that were not covered in this study.

iii. The study was mainly quantitative in nature as it only relied on questionnaires as primary tools of data collection. A similar study with mixed method approach and incorporating qualitative instruments such as interviews and focus group discussions may be considered so as to provide deeper insight based on participants' contextual factors and experiences.

iv. The study took place in Kirinyaga East sub-county. There are many factors that could shape students' learning processes and educational achievement including learning experiences and environment. Similar studies may therefore be considered in other regions in the country for comparison and generalisability of the findings.

REFERENCES

Ackerman, C. (2019). What is self-concept theory? A psychologist explains positive psychology https://positivepsychology.com/self-concept/

Al-Samarrai, S. Cerdan-Infantes, P. & Lehe, J. (2019). Mobilizing resources for education and improving spending effectiveness: Establishing realistic benchmarks based on past trends. https://www.edu-links.org/sites/default/files/media/file/Mobilizing%20Resources%20for%20Education%20and%20Improving%20Spending%20Effectiveness.pdf

Anierobi, E. I. (2019). The relationship among gender, academic self-concept and academic achievement of secondary school students in Awka urban. *Journal of the Nigerian Council of Educational Psychologists, 13*(1). 34-45.

Arens, A. K., Frenzel, A. C., & Goetz, T. (2022). Self-concept and self-efficacy in math: longitudinal interrelations and reciprocal linkages with achievement. *The Journal of Experimental Education 90*(3) 615–633. https://doi.org/10.1080/00220973.2020.1786347

Chao, C.N., McInerney, D.M., & Bai, B. (2019). Self-efficacy and self-concept as predictors of language learning achievements in an Asian Bilingual Context. *Asia-Pacific Education Researcher 28*(1), 139–147. https://doi.org/10.1007/s40299-018-0420-3

Cherry, K. (2021). What is self-concept: The psychological exploration of "Who am I?" https://www.verywellmind.com/what-is-self-concept-2795865

Chiu, L. H. (1997). Development and validation of the school achievement motivation rating scale. *Educational and Psychological Measurement, 57* (2), 292–305.

Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. *Nurse Researcher*, *23*(6), 20–25. https://doi.org/10.7748/nr.2016.e1382

Erentaite, R., Vosylis, R., Sevalneva, D., Melnike, E., Raižiene, S. & Daukantaite, D. (2022). Profiles of achievement motivation and performance in middle school: Links to student background and perceived classroom climate *Frontiers in Psychology 13*(5). 1-16.

Erhuvwu, O. S., & Adeyemi, F. (2019). Achievement motivation as a predictor of academic achievement of senior secondary school students in mathematics. *European Journal of Educational and Development Psychology, 7*(3), 36-45.

Faakye, S. (2020). Age and gender differences in achievement motivation: A Ghanaian case study. *International Journal of Scientific and Research Publications*, *10*(9), 217-233.

Finogenow M. (2017) Need for achievement. In: Zeigler-Hill V., Shackelford T. (eds) *Encyclopedia of Personality and Individual Differences*. Springer. https://doi.org/10.1007/978-3-319-28099-8_537-1

Gachigi, P. N., King-White, D., Kinai, T. & Kige, E. (2019). Assessing the correlation between academic self-concept and mathematics achievement in secondary schools in Nairobi County, Kenya. *Journal of Education and Learning, 8*(3), 102-111. https://doi.org/10.5539/jel.v8n3p102

Gachigi, P. N., King-White, D., Kinai, T., & Kigen, E. (2019). Assessing the correlation between academic self-concept and mathematics achievement in secondary schools in Nairobi County, Kenya. *Journal of Education and Learning, 8*(3), 102-111. https://doi.org/10.5539/jel.v8n3p102

Hasan, M., & Sarkar, R. (2018). Achievement Motivation and Academic Achievement of the Secondary Level Students in Uttar Dinajpur District. *Research Review International Journal of Multidisciplinary, 3*(10), 245-252.

Hazzi, O., & Maldaon, I. (2015). A pilot study: Vital methodological issues. *Business: Theory and Practice, 16*(1), 53-62. https://doi.org/10.3846/btp.2015.437

Herrera, L., Al-Lal, M., & Mohamed, L. (2020). Academic achievement, self-concept, personality and emotional intelligence in primary education. Analysis by gender and cultural group. *Frontiers in Psychology. 10*(3075), 1-11 https://doi.org/10.3389/fpsyg.2019.03075

Husnayaini, I. (2019). Student self-concept and achievement motivation of high school students. *Jurnal Pendidikan Islam, 6*(2). 1-11.

Iyengar, R. G, Padma, G., Kumar, M., Yanjana. A. (2021). Academic self-concept and academic achievement of Indian CBSE school students. *National Journal of Community Medicine,12*(12):405-410. https://doi.org/10.5455/njcm.20211127044355

Jankielewicz, R. (2023). *Understand Achievement Motivation, the theory behind it, characteristics of achievement motivation and how McClelland's three components of needs impact individuals.* Study.com. https://study.com/academy/lesson/achievement-motivation-theory-definition-quiz.html#

Kagundu, F. W. (2021). *Truant behavior disorder and its impact on academic performance among learners in public primary schools in Nairobi County, Kenya*. Master's Thesis, Kenyatta University Repository. https://ir-library.ku.ac.ke/handle/123456789/22710

Kamotho, M. W., Onsongo, L., & Mwenda, C. S. (2022). Predictors of academic achievement among senior baccalaureate nursing students in select universities in Kenya. *South Asian Research Journal of Nursing & Health Care, 4*(2): 8-14.

Karari, J. Kimani, M., & Mukolwe, N. (2022). Relationship between achievement motivation personality indicator and academic achievement among learners with exceptional potential in public primary schools in Nairobi County. *African Journal of Empirical Research, 3*(1). 173-188.

Karlina, R., Pujiati, R. Y., & Maydiantoro, A. (2021). The influence of achievement motivation on learning achievement of introduction to accounting course. *International Journal of Educational Studies in Social Sciences*. *1*(1), 7 – 15.

Keller, T., Kim, J., & Elwert, F. (2023). Peer effects on academic self-concept: A large randomized field experiment. *European Sociological Review*, 39(5), 759–774. https://doi.org/10.1093/esr/jcad001

Khan, T., Ilyas, M., & Waheed, T. (2022). Examining the role of gender in academic motivation among students: Evidences from District Malakand. *Journal of Research in Humanities and Social Science, 10*(9), 298-302.

Kim J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology, 72*(6), 558–569. https://doi.org/10.4097/kja.19087

Klein, T. (2020, May 21). *Grading fail at motivating students. Intrinsic motivation works better*. EdSurge. https://www.edsurge.com/news/2020-05-21-grades-fail-at-motivating-students-intrinsic-motivation-works-better

Kulakow S. (2020). Academic self-concept and achievement motivation among adolescent students in different learning environments: Does competence-support matter? *Learning and Motivation*, *70*(2020),101632.

Kumar, V. V., & Tankha, G. (2020). Influence of achievement motivation and psychological adjustment on academic achievement: A cross-sectional study of school students. *Humanities and Social Sciences Reviews, 8*(1), 532-538. https://doi.org/10.18510/hssr.2020.8165

Kwajaffa, A. P., Usman, B., I., & Yusuf, G. (2022). Motivation and academic achievement of student's toward sustainable national development in Nigeria: A pragmatic approach *International Journal of Educational Research and Management Technology, 7*(2).

Lewis, J. (2022). Gender *Differences in Academic Self-Concept, Perfectionism, and Math Performance among First-Year STEM and Non-STEM students.* UNF Graduate Theses and Dissertations. 1151. https://digitalcommons.unf.edu/etd/1151

Li, N., Yang, Y., Zhao, X,. & Li, Y. (2023). The relationship between achievement motivation and college students' general self-efficacy: A moderated mediation model. *Frontiers in Psychology, 13*(1), 1-14.

Li, N., Yang, Y., Zhao, X., & Li, Y. (2023). The relationship between achievement motivation and college students' general self-efficacy: A moderated mediation model. *Frontiers in psychology*, *13*(1031912), 1-13. https://doi.org/10.3389/fpsyg.2022.1031912

Lindberg, E., Yıldırım, E. Elvan, O. Öztürk, D. & Recepoğlu, S. (2019). Parents' educational expectations: does it matter for academic success?. *SDU International Journal of Educational Studies*. *6*(1) 150-160. https://doi:10.33710/sduijes.596569.

Lockl, K., Attig, M., Nusser, L. & Wolter, I. (2021). Cognitive and affective-motivational factors as predictors of students' home learning during the school lockdown. *Frontiers in Psychology*. *12*(751120). 1-14. https://doi.org/10.3389/fpsyg.2021.751120

Marsh, H. W., Seaton, M., Dicke, T., Parker, P. D., & Horwood, M. S. (2019). The centrality of academic self-concept to motivation and learning. In K. A. Renninger & S. E. Hidi (Eds.), *The Cambridge handbook of motivation and learning* (36–62). Cambridge University Press. https://doi.org/10.1017/9781316823279.004

Masud, S., Mufarrih, S.H., Qureshi, N.Q., Khan, F., Khan, S., & Khan, M.N. (2019). Academic performance in adolescent students: The role of parenting styles and socio-demographic factors – A cross sectional study from Peshawar, Pakistan. *Frontiers in Psychology*, 10:2497. https://doi.org/10.3389/fpsyg.2019.02497

McClelland, D. C. (1958). Methods of measuring human motivation. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society* (pp. 7-42). Princeton, NJ: D. Van Nostrand Company, Inc.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.

McLeod, S. A. (2024, January 29). Carl Rogers humanistic theory and contribution to psychology Simply Psychology. https://www.simplypsychology.org/carl-rogers.html

McNeish, D. (2018). Thanks coefficient alpha, we'll take it for here. *Psychological Methods*, *23*, 412–433. https://doi.org/10.1037/met0000144

Muthee, J. M., & Murungi, C. G. (2019). Relationship among intelligence, achievement motivation, type of school, and academic performance of Kenyan urban primary school pupils. In M. Khosrow-Pour, D.B.A. (Ed.), *Advanced Methodologies and Technologies in Modern Education Delivery* (142-151). IGI Global. https://doi.org/10.4018/978-1-5225-7365-4.ch012

Mwaura, M. N., & Mwaura, K. (2020). Gender Differences in academic motivation among public secondary schools' students in Nairobi County, Kenya *Journal of Education and Practices 3*(1), 63-75.

Obura, C, Kinai, T., & Ndanbuki, P. (2019). *Relationship between achievement goals and academic achievement of form three students in Nairobi County, Kenya*. Thesis, Kenyatta University, https://hdl.handle.net/10520/EJC-1cfedd4d0e

Okotie, S. E. (2020, January). *Academic self-concept and achievement motivation as correlates of academic achievement in mathematics among senior secondary schools' students in Edo State*. Project Reserves. https://www.projectreserve.com/2020/01/academic-self-concept-and-achievement-motivation-as-correlates-of-academic-achievement-in-mathematics-among-senior-secondary-schools-students-in-edo-state.html

Okotie, S. E., & Adeyemi, F. T. (2019). Achievement motivation as predictor of academic achievement of senior secondary school student in mathematics, Edo State, Nigeria. *Journal of Education, Society and Behavioural Science, 32*(4), 1-9. https://doi.org/10.9734/jesbs/2019/v32i430179

Okotie, S., E. (2019). Study of academic self-concept in relation to mathematics academic achievement of senior secondary school students. *Benin Journal of Educational Studies 25* (1 & 2), 19-28.

Okyere, M., (2019). Effects of school type and gender on students' self-concept and mathematics achievement. *Integrity Journal of Education and Training. 3*(1), 1-9.

Ondieki, N. M. (2022). *Relationship between academic self-concept, motivation and academic achievement among secondary school students in Kisumu county, Kenya*. Master's Thesis, Kenyatta University. https://ir-library.ku.ac.ke/bitstream/handle/123456789/24657/Relationship%20between%20Academic%20Self-Concept%2c%20Motivation....pdf?sequence=1&isAllowed=y

Ondieki. (2022, November) *Relationship between academic self-concept, motivation and academic achievement among secondary school students in Kisumu County, Kenya*. Master's Thesis, Kenyatta University Repository. https://ir-library.ku.ac.ke/handle/123456789/24657#

Ordaz-Villegas, G., Acle-Tomasini, G., & Reyes-Lagunes, L. I. (2013). Development of an academic self concept for adolescents (ASCA) scale. *Journal of Behavior, Health & Social Issues, 5*(2), 117-130.https://www.redalyc.org/articulo.oa?id=282228907008

Oyoo, S. Mwaura, p. Kinai, T., & Mutua, J. (2019). Academic burnout and academic achievement among secondary school students in Kenya. *Educational Research International 2020* (1), 1-6, https://doi.org/10.1155/2020/5347828

Pavithra, L. (2019). Achievement motivation and self-concept among students. *The International Journal of Indian Psychology. 6*(1). 2018. 10.25215/0603.014.

Postigo, Á., Fernández-Alonso, R., Fonseca-Pedrero, E., González-Nuevo, C., & Muñiz, J. (2022). Academic self-concept dramatically declines in secondary school: Personal and contextual determinants. *International Journal of Environmental Research and Public Health*, *19*(5), 1-13. https://doi.org/10.3390/ijerph19053010

Rogers, C. (1959). A theory of therapy, personality and interpersonal relationships as developed in the client-centered framework. In (ed.) S. Koch, *Psychology: A study of a science. Vol. 3: Formulations of the person and the social context*. New York: McGraw Hill.

Sandeep, P., & Kochrekar, P. (2022). A study on parenting style in relation to academic self-concept among students of secondary schools. *International Journal of Academic Research and Development, 7*(3). 61-63.

Sataloff, R. T., & Vontela, S. (2021). Response rates in survey research. *Journal of voice : official journal of the Voice Foundation, 35*(5), 683–684. https://doi.org/10.1016/j.jvoice.2020.12.043

Schultheiss, T., Pfister, C., Gnehm, A., & Backes-Gellner, U. (2023). Education expansion and high-skill job opportunities for workers: Does a rising tide lift all boats?, *Labour Economics, 82*(2023), 1-23. https://doi.org/10.1016/j.labeco.2023.102354.

Schulz, K. F., & Grimes, D. A. (2002). Sample size slippages in randomised trials: Exclusions and the lost and wayward. *Lancet, 359*(9308), 781–785. https://doi.org/10.1016/S0140-6736(02)07882-0

Sharma, P., & Lavania, S. (2022). The effect of gender on achievement motivation. The *International Journal of Indian Psychology 10*(1). 709-713.

Singh, G. N., Bhattacharyya, D., & Bandyopadhyay, A. (2020). Calibration estimation of population variance under stratified successive sampling in presence of random non-response, Communications in Statistics. *Theory and Methods.* https://doi.org/10.1080/03610926.2020.1719158

Sivrikaya. A. H. (2019). The relationship between academic motivation and academic achievement of the students. *Asian Journal of Education and Training, 5*(2). 309-315.

Steinberg, O., Kulakow, S. & Raufelder, D. (2024). Academic self-concept, achievement, and goal orientations in different learning environments. *European Journal of Psychology of Educ*ation Published Online, Springer. https://doi.org/10.1007/s10212-024-00825-6

Steinmayr, R., Weidinger, A.F., Schwinger, M., & Spinath, B. (2019). The importance of students' motivation for their academic achievement: Replicating and extending previous findings. *Frontiers in Psychology, 10*(1), 1-11. https://doi.org/10.3389/fpsyg.2019.01730

Taber, K. S. (2018). The use of Cronbach's Alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(1), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Turhan, N. S. (2020). Gender differences in academic motivation: A meta-analysis *International Journal of Psychology and Educational Studies, 7*(2), 211-224.

Tuthill, K. (2022). *The relationship between academic self-concept and academic achievement in college students,* Unpublished Doctoral Thesis, Boston College. http://hdl.handle.net/2345/bc-ir:109344.

Valls, M. (2022). Gender differences in social comparison processes and self-concept among students. *Frontiers in Education 6*(815619). 1-8. https://doi.org/10.3389/feduc.2021.815619

Vasalampi, K., Pakarinen, E., Torppa, M. (2020). Classroom effect on primary school students' self-concept in literacy and mathematics. *European Journal of Psychology of Education 35*(1), 625–646 https://doi.org/10.1007/s10212-019-00439-3

Wakasiaka, F. J. (2021). Gender differences in academic self-concept among standard seven pupils using learning strategies in the use of information communication technology in Bungoma County, Kenya. *Network and Communication Technologies*, *6*(2). 22-40.

Wang, L. H. & Yu, Z. G. (2023). Gender moderated effects of academic self-concept on achievement, motivation, performance, and self-efficacy: A systematic review. *Frontiers in Psychology 14*(1136141), 1-15.

Wang, L., & Yu, Z. (2023). Gender-moderated effects of academic self-concept on achievement, motivation, performance, and self-efficacy: A systematic review. *Frontiers in psychology*, *14*, 1136141. https://doi.org/10.3389/fpsyg.2023.1136141

Xie, G., Liu, X. (2023). Gender in mathematics: How gender role perception influences mathematical capability in junior high school. *The Journal of Chinese Sociology 10*(10). 1-23. https://doi.org/10.1186/s40711-023-00188-3

Zhang, Q., Miao, L., He, L., & Wang, H. (2022). The relationship between self-concept and negative emotion: A moderated mediation model. *International journal of environmental research and public health*, *19*(16), 10377. https://doi.org/10.3390/ijerph191610377

APPENDICES

Appendix A: Informed Consent Form for Participants

Introduction:

My name is Rahab Ndungu, a postgraduate student at Kenyatta University, in the Department of Educational Psychology. As part of my degree requirement I am supposed to conduct a research involving secondary school students. This is to inform you that your school has been selected and you have been identified as one of the study participants. I therefore have the pleasure to invite you to be part of this study. This form is intended to seek for your consent in taking part in the research. By signing the form on the space provided herein below you consent to have read and understood the details about the study. Kindly read the following information about the research before signing the consent form.

Purpose

The purpose of the study is to assess the relationship between academic self-concept and achievement motivation on academic achievement of students in secondary schools in Kirinyaga East sub-county. One of the reasons you have been selected is because the study intends to involve form three students. As a student in this category, you qualify to be part of the study because the researcher feels that you have sufficient exposure to learning processes and can fully understand research questions.

Procedure

If you consent to taking part in this study, you will receive a questionnaire with questions about academic self-concept, achievement motivation and academic achievement. You will be required to honestly and truthfully respond to all questions. The questions are easy to understand and there are no wrong or right answers. The session for answering the questions on the questionnaires will take

about 40 minutes. The researcher will pick up the consent form and questionnaires once you have completed filling them.

Risks and Discomforts Involved

There are no potential risks or discomforts, whether psychological, emotional or physical in taking part in the study. While you may have uneasiness in responding to some the questions, you are encouraged to provide as truthful information as possible as the study is for educational purposes only and none of the questions have been set by your school.

Benefits

Taking part in this study is voluntary and there are no monetary or any kind of direct benefits being extended to the participants as compensation. However, your participation will highly help in enhancing knowledge on aspects of promoting the development of students' academic self-concept and achievement motivation towards improved academic achievement.

Confidentiality

Utmost confidentiality will be ensured throughout all the processes of this study. Your personal details and identity will not be revealed to the third party. To enhance anonymity, you are requested not to write your name or any identifying information on the questionnaires. By taking part in the study through giving my responses on the questionnaire below, I state that I have read and fully understand the requirements stated herein above, and hereby give my consent to be part of this study.

_____	_____
Participant's Code	Date
_____	_____
Participant's Signature	Date
_____	_____
Researcher's Name	Date

Thank you for your time,

Rahab Ndungu.

Appendix B: Questionnaire for Students

Section 1: Background Information

Please read the following questions carefully and fill in the blank spaces or mark (x) in the brackets where appropriate.

1. Your Gender: Male ( ) Female ( )
2. Your Age in years ( )
3. Type of school: Girls' school ( ) Boys school ( ) Co-educational/mixed school ( )
4. Residential status: a boarder ( ) a day scholar ( )

Section 2: Academic Self-Concept for Adolescents (ASCA) Scale

Instructions

A series of statements are listed below. Each one describes a situation which may be related to a certain extent to what you do or feel. Mark with an "X" the option that best applies to how often you engage in the mentioned activity. It is important for you to know that this questionnaire is completely independent from any school course, and that there is not a correct or incorrect answer. I only want to know the frequency of certain activities you do. The information you provide is strictly confidential. Thank you very much.

1 Never 2 Sometimes 3 Usually 4 Very Often 5 Always

No		1	2	3	4	5
1	Before I start a new task, I analyze the different options I have to perform it.					
2	I can repeat word by word a story I have been told.					
3	When I want to improve my health or physical appearance, I make some decisions and stick to them until I reach the goal.					
~~4~~	I complete my homework within the period of time I establish					
5	I express my ideas more clearly verbally.					
6	I practice activities I like (singing, dancing, playing an instrument) a lot to improve					
~~7~~	I read texts several times to find main ideas					
8	When I have a problem, I search for new strategies to solve it					
9	I can reinvent new concepts into my own language.					
10	I find it difficult to memorize things					
11	I like to track the origin of a problem in order to find the best solution					
12	I analyze my grades to see if they correspond to what I did					
13	I try to do the best school work of my class.					
14	I don't need many instructions to know how to do my homework.					
15	I can predict the consequences an event is going to have					
16	I look for more information to complement my classes.					
17	I like to do my homework in my own terms and with my ideas.					
18	I have more than one option to solve a problem					
19	I review the curriculum before a semester begins					
20	I can mentally calculate things easily.					
21	When I participate in a group activity, I do my best to excel.					
22	I like situations where I can compare and identify different points of view or opposed ideas					
23	I like to learn by free exploration					
24	Before starting a task or project, I look into it in order to know what strategy to use					
25	I can generate new ideas without having deep knowledge on a topic					
26	To solve a problem, I find ways others don't think of.					
27	I arrive at school on time because I calculate the time that it takes me to get there, taking the city traffic into account.					
28	Before doing a presentation in front of my class, I practice previously at home					

Section 3: School Achievement Motivation Rating Scale (SAMRS)

Using the scale below, indicate to what extent each of the following items best describes you in school. Mark with an "X" against the option that best applies to how often you handle the stated activity

1- Strongly Disagree, 2- Disagree, 3 - Undecided, 4- Agree, 5- Strongly Agree

		1	**2**	**3**	**4**	**5**
1.	I choose to work above and beyond what I expect to receive (extra marks, presents, recognition etc.)					
2.	I like bringing materials related to classroom activities					
3.	I often feel like I am unprepared for class					
4.	I like sticking with a task until it is completed					
5.	I make efforts to solving problems that others find difficulty with					
6.	I find it difficult to complete my assignments as required					
7.	I am always asking questions in order to understand the materials being studied or help in solving assignments					
8.	I hate doing assignments or homework					
9.	I easily find answers to the assigned questions					
10.	I enjoy participating in class activities and discussions					
11.	I am always in a hurry and rarely pay close attention when doing assignments					
12.	I better do something over and over again until I get it right					
13.	I do not like being in competitive situations					
14.	I am always enthusiastic with class work					
15.	I am always hesitant to do anything that might lead to failing.					

Section 4: Academic Achievement Scores

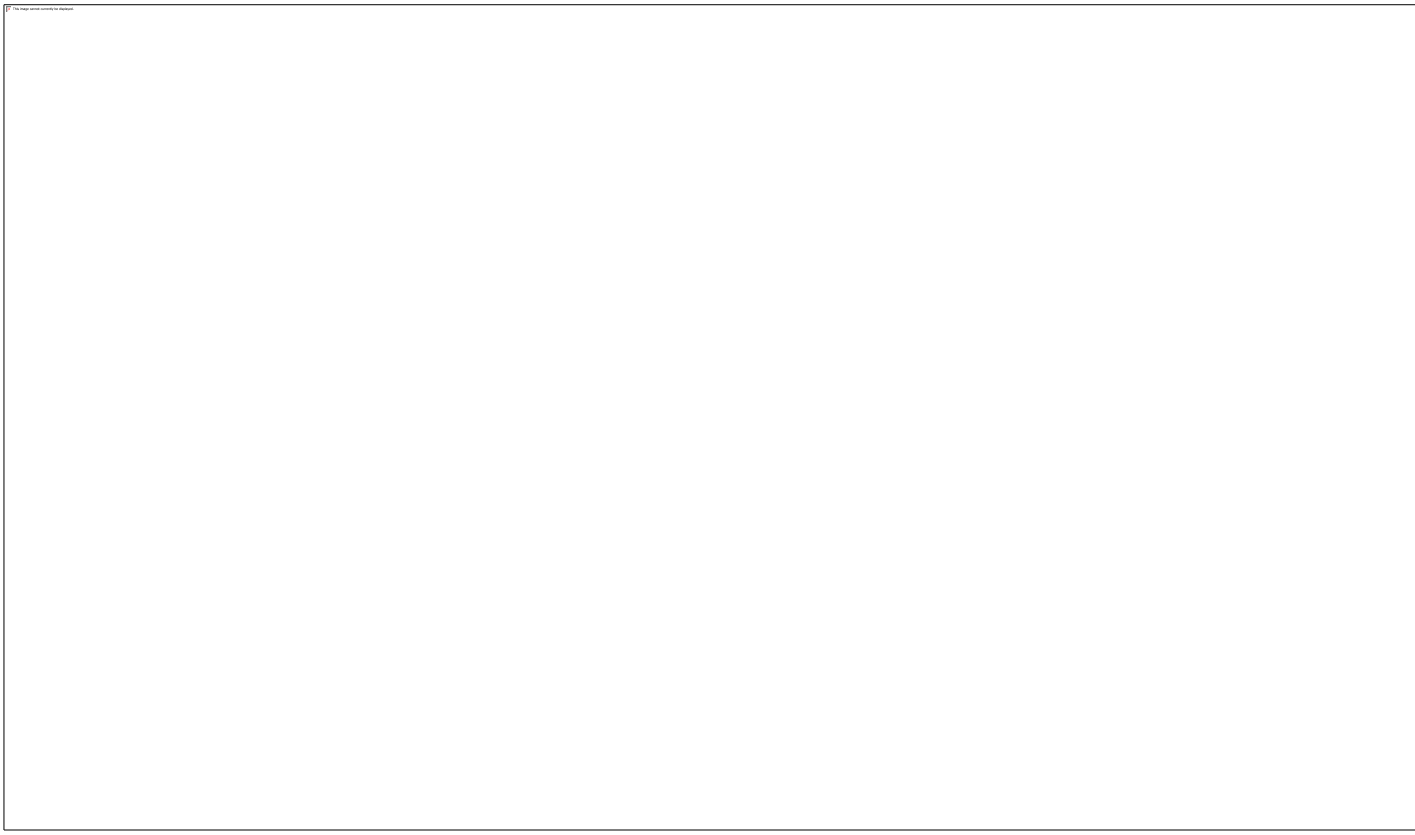
1. Kindly provide your academic marks and mean scores attained in your last end of term examination in the space provided below.

Total Marks	Mean Mark

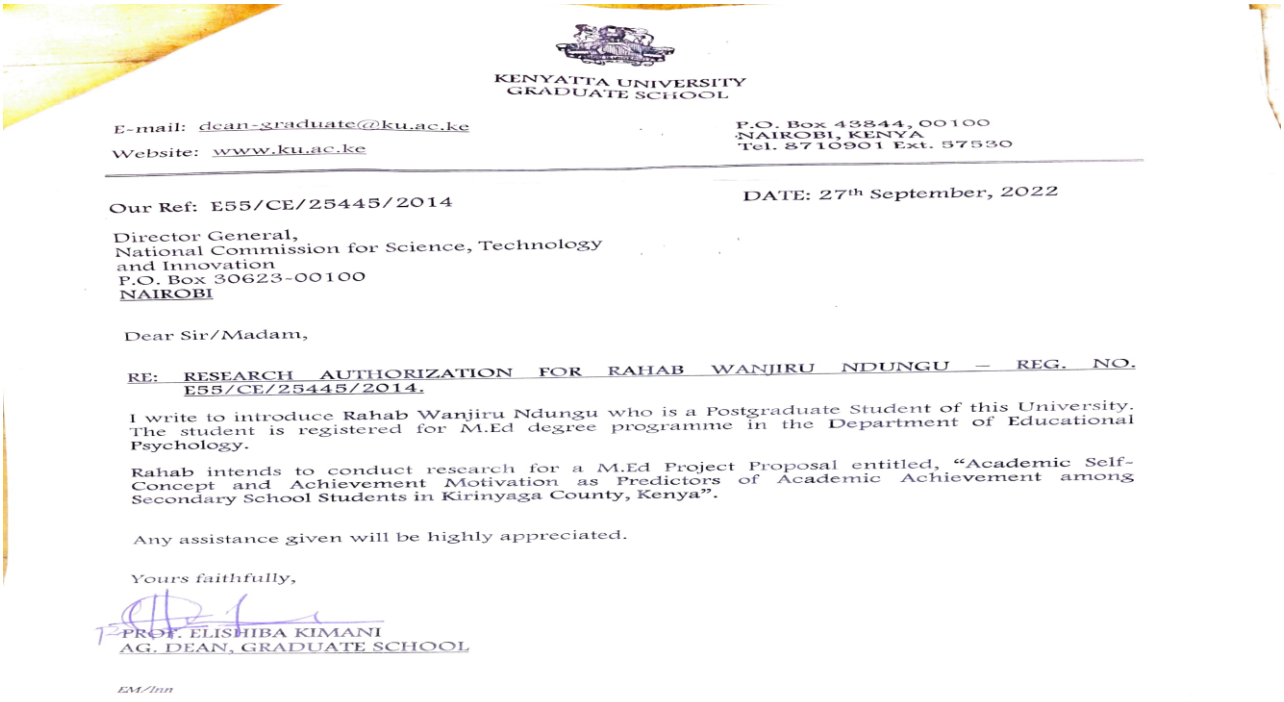
Thank you for your time to respond to the research questions,

Rahab Ndungu.

Appendix C: Permission to use Academic Self-Concept for Adolescents (ASCA) Scale



Appendix D: Research Authorisation Letter



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NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E55/CE/25445/2014

DATE: 27th September, 2022

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

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR RAHAB WANJIRU NDUNGU – REG. NO. E55/CE/25445/2014.

I write to introduce Rahab Wanjiru Ndungu who is a Postgraduate Student of this University. The student is registered for M.Ed degree programme in the Department of Educational Psychology.

Rahab intends to conduct research for a M.Ed Project Proposal entitled, "Academic Self-Concept and Achievement Motivation as Predictors of Academic Achievement among Secondary School Students in Kirinyaga County, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
AG. DEAN, GRADUATE SCHOOL

EM/lnn

Appendix E: Research Permit

Appendix F: Map Showing Kirinyaga East Sub-County