

**ACADEMIC ADAPTABILITY, PSYCHOLOGICAL CAPITAL AND ACADEMIC
ENGAGEMENT AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG
FORM THREE STUDENTS IN KITUI COUNTY, KENYA**

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DECLARATION

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

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DEDICATION

This thesis is dedicated to my late parents Zacharia and Beatrice for taking me to school. My husband Martin, my blood sister Dr. Rose and my two lovely sons; Tonny and Kennedy for believing in me.

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TABLE OF CONTENTS

TITLE PAGE	i
DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	x
LIST OF FIGURES	xiv
ABBREVIATIONS AND ACRONYMS.....	xv
ABSTRACT.....	xvi
CHAPTER ONE	1
INTRODUCTION AND BACKGROUND TO THE STUDY.....	1
1.1 Introduction.....	1
1.2 Background to the Study.....	1
1.3 Statement of the Problem.....	9
1.4 Purpose of the Study	10
1.5 Objectives of the Study.....	10
1.6 Research Hypotheses	11
1.7 Significance of the Study	11
1.8 Limitations and Delimitations of the Study.....	12
1.8.1 Limitations of the Study.....	12
1.8.2 Delimitations of the Study	12
1.9 Assumptions of the Study	13
1.10 Theoretical and Conceptual Framework.....	13
1.10.1 Theoretical Framework	13

1 .10.2 Conceptual Framework	18
1.11 Operational Definition of Terms.....	19
CHAPTER TWO	20
REVIEW OF RELATED LITERATURE	20
2.1 Introduction.....	20
2.2 Relationship between Academic Adaptability and Academic Achievement	20
2.3 Relationship between Academic Psychological Capital and Academic Achievement	23
2.4 Relationship between Academic Engagement and Academic Achievement	28
2.5 Gender Differences in Academic Adaptability, Academic Psychological Capital and Academic Engagement.	31
2.5.1 Gender Differences in Students' Academic Adaptability	32
2.5.2 Gender Differences in Students' Academic Psychological Capital	33
2.5.3 Gender Differences in Students' Academic Engagement	35
2.6 Prediction of Academic Achievement from Academic Adaptability, Academic Psychological Capital and Academic Engagement.....	37
2.7 Summary of Literature Reviewed and Gap Identification.....	39
CHAPTER THREE.....	40
RESEARCH DESIGN AND METHODOLOGY	40
3.1 Introduction.....	40
3.2 Research Design.....	40
3.3 Research Variables.....	40
3.4 Research Methodology	41
3.5 Location of the Study.....	41
3.6 Target Population.....	43
3.7 Sampling Technique and Sample Size Determination.....	43

3.7.1 Sampling Techniques.....	43
3.7.2 Sample Size Determination.....	43
3.8 Research Instruments	45
3.8.1 Academic Adaptability Scale.....	45
3.8.2 Academic Psychological Capital Scale.....	45
3.8.3 Academic Engagement Scale.....	46
3.8.4 Interview Schedule.....	46
3.8.5 Pro Forma Summary of Students’ Examination	47
3.9 Pilot Study.....	47
3.9.1 Validity of the Research Instruments.....	48
3.9.2 Reliability of the Instruments.....	48
3.10 Data Collection Techniques	48
3.11 Data Analysis	49
3.11.1 Quantitative Data Analysis	49
3.11.2 Analysis of Qualitative Data	50
3.12 Logistical and Ethical Considerations	51
3.12.1 Logistical Considerations.....	51
3.12.2 Ethical Considerations	51
CHAPTER FOUR.....	53
PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS	53
4.1 Introduction.....	53
4.2 Return Rate	53
4.3 Demographic Analysis.....	54
4.3.1 Age of the Participants.....	54
4.3.2 Participants Age and Gender	55

4.3.3 Participants Age and School Category	56
4.3.4 Participants' Gender and School Category	57
4.4 Results as per the Study Objectives	57
4.4.1 Relationship between Academic Adaptability and Academic Achievement	58
4.4.2 Relationship between Academic Psychological Capital & Academic Achievement	78
4.4.3 Relationship between Academic Engagement and Academic Achievement	93
4.4.4 Gender Differences in Students' Academic Adaptability, Academic Psychological Capital and Academic Engagement.	106
4.4.5 Prediction of Academic Achievement from Academic Adaptability, Academic Psychological Capital and Academic Engagement.....	121
4.5 Exploratory Analysis	126
4.5.1 Structural Equation Modeling	126
4.6 Qualitative Analysis.....	132
4.6.1 Interview Data Analysis.....	133
4.6.2 Data Coding	133
4.6.3 Code Book Development.....	134
4.6.4 Major Themes from interview Analysis	162
CHAPTER FIVE	166
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	166
5.1 Introduction.....	166
5.2 Summary of the Findings.....	167
5.3 Conclusions.....	170
5.4 Recommendations.....	174
5.4.1 Policy Recommendations.....	174
5.4.2 Recommendations for Further Research.....	175

REFERENCES.....	177
APPENDICES.....	196
Appendix A: Informed Consent.....	196
Appendix B: Questionnaire for Students	198
Appendix C: Pro Forma Summary of Student’s Examination Results.....	203
Appendix D: Interview Schedule for Student Interviewees	204
Appendix E: Academic Engagement Questionnaire Permit.....	207
Appendix F: Institution Research Authorization Letter.....	208
Appendix G: Research Permit	209
Appendix H: Map of Kitui County	210

LIST OF TABLES

Table 3.1 Summary of Kitui County KCSE Performance (2017 to 2021)	42
Table 3.2 Target Population and Sample Size	44
Table 4.1 Return Rate	53
Table 4.2 Description of the Participants' Age in Years	55
Table 4.3 Descriptions of the Participants' Age and Gender.....	55
Table 4.4 Descriptions of Participants' Age and School Category	56
Table 4.5 Descriptions of Participants' Gender and School Category	57
Table 4.6 Description of Academic Adaptability Scores.....	58
Table 4.7 Descriptive Statistics of Academic Adaptability by Gender	59
Table 4.8 Descriptions of the Participants' Levels of Academic Adaptability.....	60
Table 4.9 Descriptive Statistics of the Academic Adaptability Sub-Scales	61
Table 4.10 Participants' Descriptive Statistics of Academic Achievement	62
Table 4.11 Levels of Academic Achievement.....	62
Table 4.12 Academic Adptability Levels Across Levels of Academic Achievement.....	63
Table 4.13 Levels of Academic Adaptability Across Academic Achievement.....	64
Table 4.14 Normality Assumption Test.....	65
Table 4.15 Regression Coefficients for the Prediction of Academic Achievement	67
Table 4.16 Model Summary for Test of Independence	68
Table 4.17 Linearity Diagnostics for Academic Adaptability and Academic Achievement...	68
Table 4.18 Linearity Diagnostics for Academic Psychological Capital and Academic Achievement	69
Table 4.19 Linearity Diagnostics for Academic Engagement and Academic Achievement...	70
Table 4.20 Correlation between Academic Adaptability and Academic Achievement	70

Table 4.21 Correlation between Academic Adaptability Sub- Scales and Academic Achievement	71
Table 4.22 Adjusted R ² of Academic Adaptability Sub-Scales on Academic Achievement ..	72
Table 4.23 ANOVA for Regression Analysis of Academic Adaptability Sub-Scales Across Academic Achievement Means.	73
Table 4.24 Beta Coefficients for the Sub-Scales of Academic Adaptability.....	74
Table 4.25 Description of Academic Psychological Capital Scores.....	79
Table 4.26 Descriptive Statistics of Academic Psychological Capital by Gender	80
Table 4.27 Levels of Academic Psychological Capital	81
Table 4.28 Descriptive Statistics of the Sub-Scales of Academic Psychological Capital	82
Table 4.29 Levels of Academic Psychological Capital Across Levels of Academic Achievement Means	83
Table 4.30 Levels of Academic Psychological Capital Across Academic Achievement Means.	84
Table 4.31 Correlation between Academic Psychological Capital and Academic Achievement	85
Table 4.32 Correlations between the Sub-Scales of Academic Psychological Capital and Academic Achievement	86
Table 4.33 Model Summary of the Sub-Scales of Academic Psychological Capital	87
Table 4.34 ANOVA for the Regression Model of the Sub-Scales of Academic Psychological Capital	88
Table 4.35 Beta Coefficients for the Domains of Academic Psychological Capital	89
Table 4.36 Description of Academic Engagement Scores.....	93
Table 4.37 Levels of Academic Engagement	94
Table 4.38 Descriptive Statistics of the Sub-Scales of Academic Engagement	95

Table 4.39 Descriptive Statistics of Academic Engagement by Gender	96
Table 4.40 Levels of Academic Engagement Across Levels of Academic Achievement.....	97
Table 4.41 Levels of Academic Engagement Across Academic Achievement.....	98
Table 4.42 Correlation between Academic Engagement and Academic Achievement	99
Table 4.43 Correlation between Academic Engagement Sub- Scales and Academic Achievement.....	100
Table 4. 44 Model Summary for the Sub-Scales of Academic Engagement.....	101
Table 4.45 ANOVA Analysis for the Sub-Scales of Academic Engagement	102
Table 4.46 Regression Coefficients for the Prediction of Academic Achievement from the Sub-Scales of Academic Engagement	103
Table 4.47 Gender Differences in Academic Adaptability.....	107
Table 4.48 Level of Academic Adaptability and Gender of the Participants	107
Table 4.49 Gender Differences in the Means of the Sub-Scales of Academic Adaptability.	108
Table 4.50 Gender Differences in Academic Psychological Capital.....	109
Table 4.51 Levels of Academic Psychological Capital and Gender.....	109
Table 4.52 Gender Differences in the Means of the Sub-Scales of Academic Psychological Capital	110
Table 4.53 Gender Differences in Academic Engagement.....	110
Table 4.54 Levels of Academic Engagement and Gender.....	111
Table 4.55 Gender Differences in the Sub-Scales of Academic Engagement.....	112
Table 4.56 Descriptive Statistics of Academic Adaptability by Gender	113
Table 4.57 Independent Samples t-test for Academic Adaptability Scores.....	113
Table 4.58 Independent Samples t-test of the Sub-Scales of Students' Academic Adaptability	114
Table 4.59 Gender Differences in Academic Psychological Capital.....	115

Table 4.60 Independent Samples t-test for Gender Differences in Academic Psychological Capital	116
Table 4.61 Independent Samples t-test of the Sub-Scales of Students' Academic Psychological Capital	117
Table 4.62 Descriptive Statistics of Academic Engagement Scores by Gender.....	118
Table 4.63 Independent Samples t-test for Academic Engagement Scores.....	118
Table 4.64 Independent Samples t-test for Gender Differences in Academic Engagement Sub-Scale	119
Table 4.65 Gender Differences in Academic Achievement	120
Table 4.66 Independent Samples t-test of Gender Differences in Academic Achievement..	120
Table 4.67 Model Summary for Regression Equation.....	121
Table 4.68 ANOVA Summary Table for the Regression Model.....	122
Table 4.69 Regression Coefficients for the Prediction of Academic Achievement	123
Table 4. 70 Analysis of Direct Effect, Indirect Effect and Total Effect	130
Table 4.71 Code Book for Students' Academic Adaptability, Academic Psychological Capital and Academic Engagement.....	135
Table 4.72 Summary of the Qualitative Analyses of Academic Adaptability and Academic Achievement.....	157
Table 4.73 Summary of the Qualitative Analyses of Academic Psychological Capital and Academic Achievement	159
Table 4.74 Summary of the Qualitative Analyses of Academic Engagement and Academic Achievement.....	160
Table 4.75 Academic Achievement Across the Qualitative Academic Adaptability, Academic Psychological Capital and Academic Engagement	161

LIST OF FIGURES

Figure 1.1 Conceptual Framework	18
Figure 4.1 Histogram for Academic Achievement Scores	66
Figure 4.2 Academic Adaptability as an Exogenous Variable	126
Figure 4.3 Psychological Capital as an Exogenous Variable	127
Figure 4.4 Academic Engagement as an Exogenous Variable	128

ABBREVIATIONS AND ACRONYMS

ANCOVA	Analysis of Covariance
CGPAs	Cumulative Grade Point Averages
COVID	Corona Virus Disease
KCSE	Kenya Certificate of Secondary Education
STWT.	School-To-Work Transition
TEL	Technology-Enhanced Learning
TIMSS	Trends in International Mathematics and Science Survey
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations Children’s Fund
SDG	Strategic Development Goals

ABSTRACT

Academic achievement is the main pathway to formal employment all over the world. However, in Kenya poor academic achievement by students nationally has been of great concern to the teachers, parents and all educational stakeholders. More specifically, most secondary school students in Kitui County have been performing below average in national examinations. This poor performance has been attributed to the school environmental factors, teacher factors and little has been done on individual psychological factors, which may contribute to the students' below average performance. The purpose of this study was to investigate how academic adaptability, academic psychological capital and academic engagement predicts academic achievement among form three students in Kitui County. The objectives of the study were; to find out the extent to which academic adaptability predicts academic achievement, to examine the extent to which academic psychological capital predicts academic achievement, to find out the extent to which academic engagement predicts academic achievement, to establish the extent to which gender moderates the relationship between the students' academic adaptability, academic psychological capital and academic engagement and to determine the predictive model of academic adaptability, academic psychological capital and academic engagement on academic achievement. The study was anchored on Individual Adaptability theory by Ployhart and Bliese (2006), Broaden -and -build theory by Fredrickson (2004) and Engagement theory of learning by Kearsley and Shneiderman (1999). Explanatory sequential mixed method design was used. The participants were 427(218 boys and 209 girls) students from ten public sub-county secondary schools in Kitui County in the year 2023. Purposive, stratified, simple random sampling and proportionate sampling was used to select the schools and the participants. Questionnaires were used to collect quantitative data while interview schedule was used to collect qualitative data. Finally, data on the students' academic achievement was collected from the respective class teachers. A pilot study involving 30 students was conducted to establish the reliability and validity of the research instruments. The school was not involved in the actual study. Both descriptive and inferential statistics were used to analyze the data. Quantitative data was analyzed using Pearson's Product Moment Correlation Coefficient, multiple regression and t-test for independent samples while the qualitative data was analyzed thematically. The findings revealed that there was a significant positive relationship between academic adaptability and academic achievement ($r=.00, p<.05$), academic psychological capital and academic achievement ($r=.65, p< 0.01$) and academic engagement and academic achievement ($r=.57, p< 0.01$). From the multiple regression analysis, it was revealed that academic psychological capital was the best predictor of academic achievement with a predictive index of ($\beta=.42$) followed by academic adaptability with a predictive index of ($\beta=.17$) while the least predictor was academic engagement with a predictive index of ($\beta=.13$). The equation for predicting academic achievement from academic adaptability, academic psychological capital and academic engagement was significant ($F(3, 411)=.000, p<.005$). As a result, all the sub-scales of the three constructs had a significant predictive weight on academic achievement. The qualitative data was analyzed thematically and the findings concurred with the quantitative results. In conclusion, the significant predictive weight of academic adaptability, academic psychological capital and academic engagement on academic achievement implied their importance in the learning process. As a result, the study recommends that the teachers, parents and all education stakeholders should enlighten and guide the students on the importance of academic adaptability, academic psychological capital and academic engagement in boosting their academic achievement.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter conceptualizes the following aspects of this study; it discusses the background to the study, statement of the problem, purpose of the study, research objectives and study hypotheses. The significance of the study, assumptions, limitations, delimitations, theoretical and conceptual framework and operational definition of the terms are also given.

1.2 Background to the Study

In many countries around the world, success in education is mostly measured by the good grades obtained by the students. Therefore, these students are always under pressure from the parents and teachers to attain the good grades. In addition, parents, teachers and the education stakeholders have always believed that, going to the university, which leads to acquiring a formal employment is the only way one can secure a bright future. Students who excel in academic achievement exhibit leadership skills, effective communication, logical thinking and problem solving skills which helps them succeed in various dimensions of their lives. Therefore, performing well academically helps the learners to develop personally and professionally. In addition, academic professionals are required in order to spur innovation in education and drive the economic growth of any country. Now, owing to the fact that academic achievement is the main pathway to formal employment, efforts have been made to improve its quality around the world. However, low quality academic achievement among students in developing countries and also in developed countries is of great concern. It has been reported that less than 10% of the countries in the world have acquired enough learning resources, the required technology and achievement in education (United Nations Educational, Scientific and Cultural Organization, [UNESCO], 2021). Even though it was

reported that this challenge cuts across developing and developed countries, it was found that this problem is more pronounced in developing countries.

Alhadabi and Karpinski (2019), reported that most of the students in Midwestern University in USA performed poorly in their examinations. The researchers argued that, the academic performance of the students was of great concern to the university academic staff. They reported that some of the reasons that led to the poor performance was lack of self-efficacy, grit and academic goal orientation. Socio-demographic factors, health behaviors and mental health were also correlated to the poor performance of the students.

In Indonesia, the same challenge is experienced; Mauliya et al. (2020) observed that below average performance in academics in Indonesia was attributed to failure of the stakeholders to motivate both parents and the students. The same challenge has also been reported in Iran where TIMSS Workshop Report (2015) indicated that the achievement of learners in TIMSS was below the average score of 500 points. Majority of the learners who were involved in the assessment scored below average in Mathematics and Science. A study by Abdullah and Bhatti (2018) also showed that poor academic achievement in Pakistan was an issue of great concern. Majority of the students performed below average in academics.

In China, Wu and Xin (2019) indicated that most of the college students in Xi'an were performing dismally in academics. The researchers argued that academic achievement of the students was an issue of great concern. The researchers investigated the reasons why students performed poorly and reported that lack of self-efficacy and proper planning to succeed was one of the reasons. Poor parental care, poor family relationship, financial challenges, poor teaching and poor management among the school administrators also contributed to this problem.

In South Africa, Anand et al. (2021) revealed that the quality of students' grades in most schools failed to meet the minimum threshold of being classified as achievers as their scores were below standard. This challenge was attributed to inequality in access to learning opportunities. The researchers reported that a significant number of students did not have access to equal learning opportunities, which contributed to poor academic achievement in the region. A study in Ethiopia by Seyoum et al. (2019) associated the high prevalence of poor academic achievement to high poverty levels. The researchers raised concern on the quality of education in Ethiopia owing to the high prevalence of low-quality academic achievement.

In Uganda, a study by Hassan et al. (2020) reported that a significant number of secondary school students in Uganda perform below standard in academic achievement. This challenge was attributed to absenteeism, high poverty levels, students' inability to understand the language used to teach, lack of adequate support from the school management and teacher's attitude. Similarly, Adams et al. (2018) reported that there was a huge discrepancy in the school learning assets, teaching aids and achievement in Ghana, Kenya and South Africa with Kenya having the largest number of teaching assets followed by South Africa. The Ghanaian students were reported to perform poorly in academics because of their limited access to learning resources.

The prevalence of registering low achievement scores among secondary school students in Kenya is also high. Sang (2018) in his study in Kipkelion East Sub- County, reported that there has been a decrease in the mean score obtained by secondary school students in examinations. According to the study, in 2014 the mean score for the sub- county schools was 5.52 but in 2016 the mean score obtained dropped to 4.13. Onderi et al. (2019) also

observed the consistency of dismal performance in KCSE examinations and the situation persisted without changing year in year out.

In Kitui County, majority of secondary school students attain below average grades in KCSE examinations with sub-county secondary schools being the worst affected, compared to the other neighboring counties such as Embu, Tharaka nithi, Machakos and Makueni. Within the eastern region, Kitui county has the highest number of students who scored D+ and below in the sub-county secondary schools in KCSE in the period running from 2017 to 2021, (Eastern Regional Education Office, 2022). Nationally, the percentages of the students who scored grade D+ and below from 2017 to 2021 were 63%, 49%, 53%, 51% and 53% respectively, (Ministry of Education, Kenya). In Kitui county, the percentages of those who scored grade D+ and below during the same period were 68%, 52%, 61%, 55% and 56% respectively, (Kitui County Education Office, 2021). Researchers have attempted to establish the factors associated with this poor academic achievement. Some researchers have associated this problem with some student's psychological variables such as academic motivation, self-esteem, locus of control, self-efficacy, personal traits, teacher factors and school factors (Muthui, 2020; Muema ,2021; Mutinda, 2022).

Based on the knowledge obtained from the previous researches, this study came up with three psychological variables; academic adaptability, academic psychological capital and academic engagement that have been shown as correlates of academic achievement. These variables may be the missing gap needed to reverse the situation of under achievement in Kitui county. In addition, the existing studies have studied these variables separately with scanty evidence of how the three constructs predict academic achievement jointly. As a result, the current study looked at how academic adaptability, academic psychological capital

and academic engagement predicts academic achievement among form three students in the sub-county secondary schools in Kitui County.

Academic adaptability is the ability to adjust one's thought patterns, affect, and the way one behaves while responding to a changing, new, or uncertain circumstances (Martin et al., 2012). It entails cognitive, behavioral and affective adaptability. Cognitive adaptability entails how quickly one adjusts his or her thoughts in understanding his or her environment; behavioral adaptability is one's ability to adjust the way one acts in order to fit in a certain environment while affective adaptability refers to an individual's ability to adjust their interactions and improving one's relationship with others (Holliman et al., 2018). Ployart and Bliese (2006) theory on Individual Adaptability explains how learners adjust to their learning environment. This helps the learners in interacting with other learners and the changing situations in a learning environment hence becoming academically adapted which enhances their academic performance.

Zhang et al. (2021) revealed existence of a positive correlation when academic adaptability and academic achievement were studied among learners in China. The researchers further reported an inverse relationship after correlating adaptability, academic achievement and undesirable academic emotion. With academic emotion as the mediator, it was also established that adaptability could be used to predict academic achievement. Collie et al. (2019) reported that the scores of the learners who were actively adapted in academics were higher.

In Kenya, Ochieng et al. (2019) identified academic adaptability to be a positive and a significant correlate of Chemistry performance. This implies that adaptability skills are

important for better academic achievement. Additionally, Addero (2020) related students' adaptability to the school environment and academic performance and found out that a connection exists between the two variables. The researcher confirmed that the students' adaptability to school environment could be used to predict academic performance.

Ngondi et al. (2020) also established a positive and significant relationship between students' adaptability skills and academic achievement. From the literature reviewed, little has been done to determine how academic adaptability predicts academic achievement particularly among students in the Kenyan context, hence the need for the proposed study.

Academic psychological capital was also focused on. Academic psychological capital is a combination of positive psychological traits which encompass hope, self-efficacy, resilience, and optimism (Carmona-Halty et al., 2019). Self-efficacy is characterized by a person's belief in one's capabilities to accomplish a task and realize success whereas hope empowers and encourages individuals to search for will and way powers. Will power helps individuals to work towards achieving goals while way power enables one to set strategies which would guarantee realization of the set goals. Although there was a dearth of information on academic psychological capital, according to (Carmona-Halty et al., 2019), hope creates positive emotions which help one to have expectations of achieving the goals and objectives which one is pursuing. Optimism is a virtue of being sure and confident that success would be attained in a given situation while resilience is a characteristic of an individual of being able to bounce back accordingly after being faced with challenges and adversities in a certain situation.

According to Broaden-and- Build theory by Fredrickson (2004), when learners have high levels of academic psychological capital, they most likely become high achievers. The theory further explains that, learners who have high levels of academic psychological capital tend to accomplish their educational goals. Academic psychological capital has been associated with positive learning behavior and outcomes. Kuar et al. (2018) observed that psychological capital significantly and positively impacted on academic scores among the university students pursuing their first-degree courses. Abukari (2008), found out that resilience and academic performance were significantly and positively related among college students in Ghana. Onivehu et al. (2020) observed that psychological capital and academic performance were significantly and positively correlated among university students in Nigeria.

Finally, the researcher looked at academic engagement which is the learners' involvement into the learning activities when they are mentally, emotionally and behaviorally absorbed in the learning materials and always interacting with one another (Hart et al., 2011). According to the studies done, people can be mentally engaged, which is the extent to which learners are willing and able to get involved into the learning task at hand. Emotional engagement involves the affective states that affect a learner's involvement in a learning activity while on the other hand behavioral engagement is the observable act of the learners being involved in academic activities. A number of scholars (Anokye & Nkwantabisa, 2021; Kuzminykh et al., 2021; Lei et al., 2018; Mohamed & Alsayed, 2021; Surum, 2018; Veldsman, 2018 & Wara et al., 2018) have established that academic engagement and academic achievement are positive and significant correlates. For instance, Lei et al. (2018) reported a significant relationship between the two variables.

Studies conducted in different countries in Africa, notably in South Africa and Ghana have confirmed the connection between the two variables. A study in South Africa found the two variables to be significant and positive correlates (Veldsman, 2018). On the other hand, a study done in Ghana by Anokye and Nkwantabisa (2021) reported a correlation between academic engagement and academic achievement when student's commitment was being used as the mediating factor.

Ngondi et al. (2020) also established a positive and significant relationship between students' engagement sub-scales and academic achievement. From the literature reviewed, little has been done to determine how academic engagement predicts academic achievement particularly among students in the Kenyan context, hence the need for the proposed study.

In Kenya, Wara et al. (2018) found out that secondary school students' academic engagement and academic performance were significantly and positively correlated. In analysis of the data obtained from a research done at Dadaab Refugee Camp, Surum (2018) reported similar results in addition to the finding that academic achievement was predictable from the learners' academic engagement.

Research results have demonstrated that academic engagement is an important psychological variable in academic achievement. Additionally, according to the engagement theory of learning by Kearsley and Schneiderman (1999), when students are meaningfully engaged in learning activities, it enhances their academic performance. Finally, the study sought to establish whether there were gender differences in the students' academic adaptability, academic psychological capital and academic engagement.

From the literature reviewed, there is a dearth of information on how academic adaptability, academic psychological capital and academic engagement predict academic achievement in

Kenya and more specifically in Kitui County. Therefore, it became necessary for a study to be done to bridge this noted gap and provide necessary research information that may help to address below average academic achievement in sub-county secondary schools in Kitui County.

1.3 Statement of the Problem

In Kitui County, the KCSE results for the Sub-county secondary schools have been below average. From the year 2017 to 2021, majority of the students in these schools scored a D+ and below in the national examinations. This consistent below average performance in KCSE indicates that largely, educational objectives are not met in the county. The affected students miss out opportunities for higher education and employment in the formal sector since academic achievement is the main pathway. These students have limited opportunities for career development and formal employment owing to the stiff competition in the country and around the world. Therefore, Kitui being a marginalized county, requires learned people to drive economic growth, spur innovation, strengthen institutions and foster social cohesion. Thus, the below average performance in the county is likely to continue enhancing the vicious cycle of poverty and poor health which have been a main concern.

These challenges negatively affect social and economic development in Kitui County and the country at large. If this issue is not conclusively addressed, it will hamper the realization of vision 2030 and SDGs. Therefore, the problem of perennial below average academic achievement in the sub- county secondary schools in the county requires urgent attention to avert this situation.

In Kenya and more specifically in Kitui county, there is limited research on academic adaptability, academic psychological capital and academic engagement which may boost the students' academic achievement. In addition, the research efforts made to address this

problem of low quality academic achievement have not conclusively addressed the issue because a significant number of students still have been persistently getting low grades in KCSE. This low persistence in academic achievement among the students calls for further research to try and unmask the reasons behind the trend and provide possible solutions to this challenge. As indicated earlier, little has been done on academic adaptability, academic psychological capital and academic engagement as predictors of academic achievement, a gap this study intends to fill. Additionally, academic adaptability, academic psychological capital and academic engagement were chosen for the study because of their theoretical relevance which will form a sound theoretical foundation of this study.

1.4 Purpose of the Study

The purpose of this study was to investigate how academic adaptability, academic psychological capital and academic engagement predicts academic achievement among form three students in Kitui County. The knowledge gained may be used to help the students in developing these constructs which enhances academic achievement. Finally, the study examined if there existed significant gender differences in students' academic adaptability, academic psychological capital and academic engagement.

1.5 Objectives of the Study

The objectives of this study were:

- i. To find out the relationship between academic adaptability and academic achievement among form three students in Kitui County.
- ii. To examine the relationship between academic psychological capital and academic achievement among form three students in Kitui County.
- iii. To establish the relationship between academic engagement and academic achievement among form three students in Kitui County.

- iv. To establish gender differences in students' academic adaptability, academic psychological capital and academic engagement among form three students in Kitui County.
- v. To determine predictive model of academic achievement from academic adaptability, academic psychological capital and academic engagement among form three students in Kitui County.

1.6 Research Hypotheses

The study looked into the following hypotheses:

- Ha1: There is a relationship between academic adaptability and academic achievement among form three students in Kitui County.
- Ha2: There is a relationship between academic psychological capital and academic achievement among form three students in Kitui County.
- Ha3: There is a relationship between academic engagement and academic achievement among form three students in Kitui County.
- Ha4: Gender moderates the relationship between the students' academic adaptability, academic psychological capital and academic engagement.
- Ha5: Academic adaptability, academic psychological capital and academic engagement predict academic achievement among form three students in Kitui County.

1.7 Significance of the Study

The study's results may benefit the students, instructors and any other stakeholders in the educational sector in their endeavors to address the problem of low academic achievement. The results may also provide empirical evidence to the Ministry of Education on these psychological factors that predict academic achievement impacting on how the students perform in their studies. Additionally, the results may also be used by the educational policy

makers to come up with policies and school programs aimed at promoting the learners' performance in academics in Kenya.

The information generated from this research may also be helpful to parents in informing them on how to enhance the development of self-efficacy, resilience, hope and optimism in the lives of the learners for them to perform better. The results may help the students in acquiring the appropriate academic psychological capital in the event of academic pressure and the demand to achieve high academic standards. Finally, the results offer valuable information which may contribute to the empirical literature on academic achievement that may inform future researchers in this area.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations of the Study

The current research was conducted in Kitui County involving a sample of form three students in the sub-county secondary schools and since the region differs in a number of ways from other counties in Kenya, the results may be generalized to other regions with caution. To enhance the generalizability of the study's findings, a representable sample was used. The researcher used questionnaires to collect data, and the use of the questionnaires may result into subjective responses from the students. However, to confine the degree of subjectivity, the researcher explained to the respondents on how to fill in the questionnaires. Explanatory sequential mixed method design was employed to establish the relationship between the study variables. However, the relationship between the variables cannot be used to make a conclusion on causality.

1.8.2 Delimitations of the Study

This study had the following delimitations. First, only form three students in selected sub-county secondary schools in Kitui County were involved. Secondly, only three predictors of

academic achievement were looked at and yet there are other variables which may predict the outcome variable.

1.9 Assumptions of the Study

An assumption was held that the learners accurately reported their academic adaptability, academic psychological capital, academic engagement and academic achievement. Academic achievement was assumed to have a linear relationship with the students' academic adaptability, academic psychological capital and academic engagement. It was also assumed that the schools involved set examinations that reflect accurate academic ability of the students. It was also assumed that the learners participating in the research had developed academic adaptability, academic psychological capital and academic engagement.

1.10 Theoretical and Conceptual Framework

1.10.1 Theoretical Framework

This study was guided by three theories.

a) Individual Adaptability (I-ADAPT) Theory (Ployhart & Bliese, 2006)

The main tenet of this theory is that adaptability is the measure of individual's ability to adjust in order to adapt to a new environment (Ployhart & Bliese, 2006). It allows an individual to make appropriate responses to changed or changing situations; the ability to modify or adjust one's behavior in meeting different circumstances or different people. Therefore, adaption is a skill that enables one to adjust to changing circumstances. People can be cognitively, affectively and behaviorally adapted. Research has found out that adaptability is a key determinant of whether an individual successfully responds to changes in their environment or not (Holliman et al.,2018). Individual adaptability theory explains the principles of behavior, environment and coping mechanisms. According to Ployhart and Bliese (2006), a person has to change own behavior through developing a certain positive mechanism in order to adjust to an environment or to changes in their current environment

for them to achieve their goals. The theory also explains that, individuals adapt to an environment in three different ways. When an individual adjusts to the environment by effectively and appropriately changing their decision policies to achieve their goals, this is what is referred to as cognitive adaptability. The second domain of adaptability according to the theory is behavioral adaptability which is explained as the changes in behavior that a person uses to adjust in an environment. The third domain is the affective adaptability which is explained as one's ability to control their emotions as they respond to a new challenge in an environment in order to achieve one's goals. Evidence shows that, adaptable students can exercise control over their learning activities thereby avoiding elements that can lead to failure, like anxiety, uncertainty and procrastination, (Holliman et al., 2018). Al kashee et al. (2020) revealed, that when the students have higher levels of academic adaptability their academic achievement increases. Other researchers have asserted that, students with higher levels of cognitive adaptability domain perform better than those with affective and behavioral domains of adaptability (Besser et al., 2020). Therefore, this theory can be used to explain how learners can adjust their thoughts, feelings and behaviors in response to new, changing or uncertain situations in a learning environment in order to achieve their academic goals. This theory was important in this study because it suggests that for a learner to achieve their learning goals, they have to adjust their thinking, feelings and also the way they behave.

b) Broaden -and -Build Theory (Fredrickson, 2004)

This theory is used to explain a person's positive psychological state of development. According to Fredrickson (2004), this theory refers to a set of resources a person can use to help improve their performance on the job and their success. The theory outlines the components of the psychological capital as hope, optimism, self-efficacy and resilience. According to this theory, these components of psychological capital are intertwined and each component supports the other with the outcome outweighing the contribution of a single

component if it stands on its own (Fredrickson, 2004). The theory explains hope as the process of setting goals and following through them while optimism is explained as having a positive thought pattern. Resilience is explained as the ability to bounce back from negative emotional experiences and by flexible adaptation to the changing demands of stressful experiences. Self-efficacy is explained as a person's believe in his or her ability to perform behaviors that leads to specific performance attainments. The theory further explains how these combined components leads to the increased performance and one's likelihood to achieve one's long term goals. This theory was used to expound on how academic psychological capital relates to the students' academic achievement. Based on this theory's explanation, firstly, students are supposed to set well defined learning goals and then each learner is supposed to push him/herself beyond the comfort zone. Thirdly, students are supposed to be ready to bounce back whenever they do not succeed in achieving their educational set goals and finally they should have a positive thought pattern while executing their learning activities (Abbas & Raja, 2019). This theory therefore suggests that psychological capital has a significant influence on academic achievement among students (Adil & Ghayas, 2020). In their study, Siu et al., (2014) reported that Broaden-and-build theory is appropriate for explaining how academic psychological capital enhances students' success in education. Similarly, Tugade and Fredrickson (2004) revealed that broaden-and build theory explains resilience which is a domain of psychological capital as playing a crucial role in predicting academic achievement among students. Ferreira et al. (2019) also indicated that academic achievement among students is influenced by their psychological capital.

When the students have high psychological capital, they most likely become high achievers (Lupsa & Virga, 2020). Students whose psychological capital is rated as high have many

ways of ensuring that they achieve their set educational goals. This theory was appropriate for this study because for learners to realize academic success, they must have a set of positive psychological resources. The theory was also used to form a theoretical basis to answer the research questions.

c) Engagement Theory of Learning (Kearsley & Shneiderman, 1999)

This Theory talks about a state of self-committed involvement in a learning task into which learners enter willingly and with the intention to complete and into which they are entirely present. It also explains that students who are involved and enmeshed mentally, emotionally and behaviorally enhances their learning (Kearseley & Shneiderman, 1999). The principles upon which this particular theory is based on are: learning through collaboration with others, creativity among the learners and learning using an outside focus. The employment of these principles helps the learners to be meaningfully engaged in a learning context, (Kearsley & Schneiderman,1999). The theory also explains that engagement in a learning environment falls under three domains which are interrelated and that academic engagement amongst students is predicted by personal traits and helps the students to develop a sense of belonging for better academic achievement (Dunn & Kennedy, 2019). The first domain is behavioral engagement, which is explained as the observable act of students being involved in a learning activity. The second domain is mental engagement, which is explained as the students' investment aimed at comprehending complex concepts and issues and acquiring difficult skills. The third domain is emotional engagement which involves emotional reactions linked to task investment. Students show effort and persistence along with paying attention, asking questions and seeking help which enables them to accomplish a learning task. This is followed by showing deep understanding of the subject matter and showing greater interest in the learning activities for them to achieve their educational set goals (Harvie,2021). Engagement theory of learning also explains that academic engagement significantly predicts

academic achievement of students (Kim et al., 2019). Similarly, Martinez et al. (2019) found out that engaged learning involves attending classes, paying attention as an instructor teaches, being an active participant when discussing with the other learners, timely completion of homework and demonstrating obedience and adherence to rules and regulations in a learning environment. This theory was important in this study because it suggests that learners have to actively get involved in a learning activity for them to succeed.

The three theories were used in this study because the first theory was used to explain academic adaptability while the second theory explained academic psychological capital and the third theory was used to explain academic engagement. The three theories complemented each other in their explanation on the role of students in a learning environment. The kind of psychological resources that the students have influence the way they adjust and engage in a learning environment. For example, according to Martínez et al. (2019) when the students have academic psychological capital, they are able to adjust in a new or a changing learning environment hence engage in a learning activity for them to perform better. On the other hand, when students do not have academic psychological capital, they are not able to adjust to any learning environment and as a result they are not able to engage well in any learning activity and they may end up performing poorly.

1.10.2 Conceptual Framework

This section explains the relationships among the study variables.

Figure 1.1

Conceptual Framework

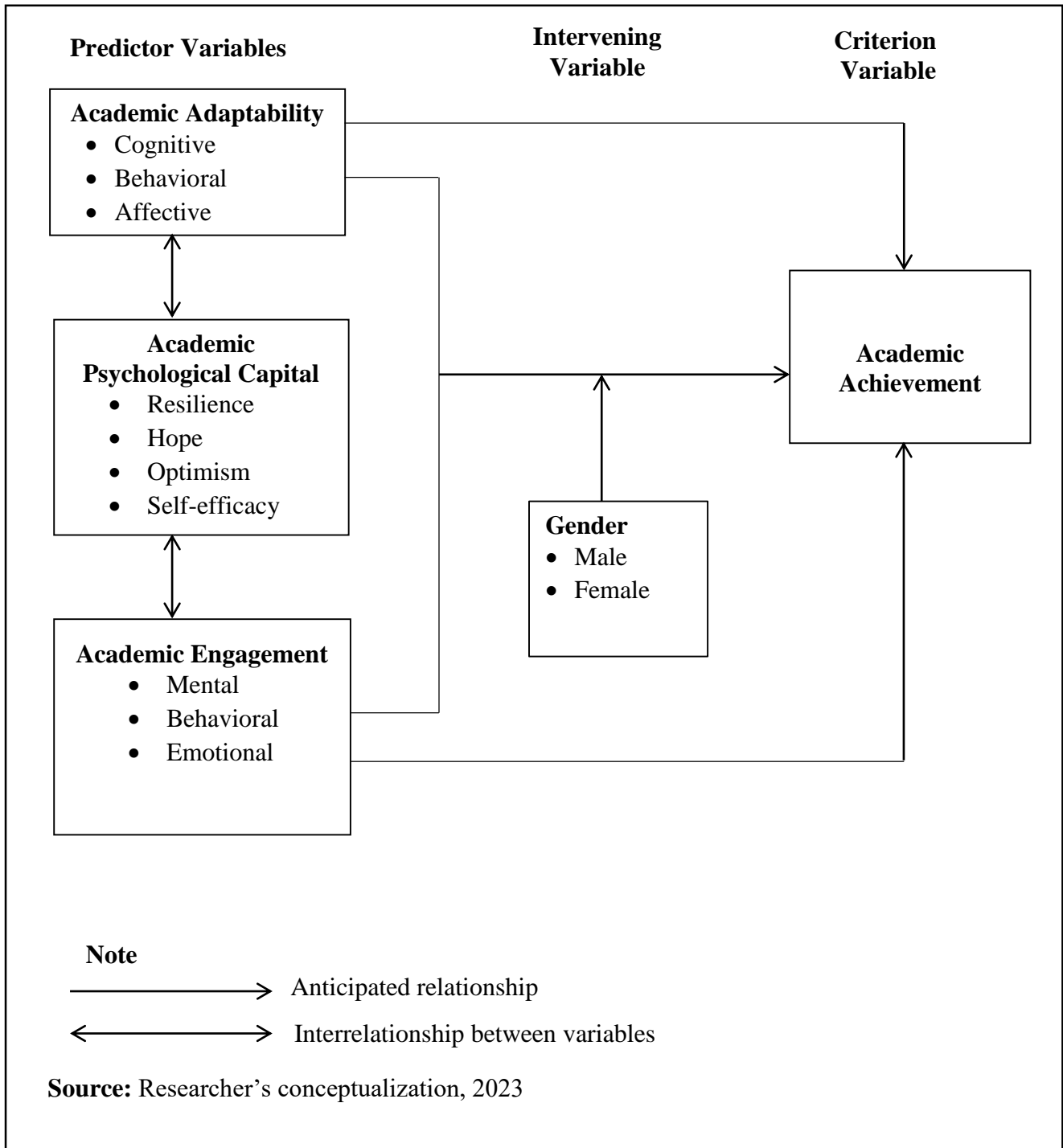


Figure 1.1 presents academic adaptability, academic psychological capital and academic engagement as the predictor variables in this study. Academic achievement was the criterion variable while gender was the intervening variable. It was hypothesized that academic adaptability, academic psychological capital and academic engagement were related to academic achievement.

1.11 Operational Definition of Terms

Academic Achievement: The standardized mean T-score obtained by students in form three, end of term one exams and term two opener 2023 examinations.

Academic adaptability: The extent to which a learner adjusts to the academic situations Within the school as indicated by a score in academic Adaptability scale.

Academic Engagement: The extent to which a learner demonstrates the ability to be involved in academic situations as indicated by a score in the academic Engagement Scale.

Academic psychological capital: The extent to which a learner demonstrates self-efficacy, Resilience, optimism, and hope in academic situations as Indicated by a score in academic psychological Questionnaire.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter describes the literature which relates to the current study in an organized way as per the study's objectives. The organization is as follows; the association of academic adaptability and academic achievement as well as the link between academic psychological capital and academic achievement. In addition, the association of academic engagement and academic achievement was reviewed. Further, studies to determine whether there were gender differences in the students' academic adaptability, academic psychological capital and academic engagement were also reviewed. The chapter also presented the literature review on how academic achievement may be predicted from academic adaptability, academic psychological capital and academic engagement. Lastly, the literature was summarized and the gaps were identified.

2.2 Relationship between Academic Adaptability and Academic Achievement

A few studies were found to have directly investigated the relationship between academic adaptability and secondary school students' academic achievement. Burns et al. (2019) studied how adaptability affects learners' performance among post graduate students in United Kingdom. The sample were mostly female (92 percent), whose age varied from 21 to 50 years ($M=34.33$; $SD=9.68$). The selection criterion for the sample size was random selection from any learners' stratum. The study used the cross-sectional research design. All the students on the psychology conversion area of study were deemed qualified and were invited to take part in the research. Adaptability and academic achievement were found to have a significant association. The study was conducted among college students in UK and college adaptability may vary when the same study is conducted in a Kenyan setting. This population and setting gap calls for a study to fill it.

Holliman et al. (2018), correlated academic adaptability and academic achievement among first year undergraduate students in Australia. The researchers used 400 participants (150 females and 250 males) aged between 20 to 26 years. This was a cross sectional study and the findings indicated that academic adaptability was positively related to academic achievement. Cross sectional studies suffer flaws arising from existence of conflict of interest. The current study used explanatory sequential mixed method design to bridge the methodological gap and yield results that may be used for comparison purposes.

Similarly, Birzina et al. (2019) conducted a study that aimed at exploring how adaptability of learners pursuing health related courses related to their performance in examinations. The study involved 1977 students and data collection was done using questionnaires. The percentage of successfully completed questionnaires was 79.08%. The study used cross-sectional research design. Descriptive statistics and factor analysis were done using SPSS software. Findings indicated that increase in academic adaptability resulted to a corresponding proportionate increase in academic performance. This study was done amongst university students in China and their adaptability skills could be higher due to their cognitive abilities. This necessitated a need to conduct a similar study amongst secondary school learners in Kenya to bridge the population gap.

A study done by Li et al. (2020) examined the relationship between career adaptability and academic performance. The researcher drew 149 (70 males, 79 females) participants aged between 12 and 14 years from a Chinese high school. Survey method was used for data collection and the findings showed that career adaptability influences academic performance among these high school learners. The study further explained that learners who were found to have high levels of career adaptability were found to be better performers. Survey method is characterized by inflexibility where there is no room for the questionnaire modification

throughout the data collection process since it will be considered as a new data. The current study used explanatory sequential mixed method which allows for the modification of the questionnaire. Secondly, the sample of this study was drawn from a developed country while the current study draws respondents from a developing country to compare the results.

In Australia, Holliman et al. (2018) looked at the relationship between the university students' adaptability and their mid-course academic achievement among university students. The sample size was 250 university students (105 females and 145 males). The participants were aged between 16 years and 20 years. The study used a cross-sectional research design and the findings showed that adaptability significantly predicted the students' mid-course academic achievement. This study used a cross-sectional research design whose findings can be flawed if there is a conflict of interest. The current study used explanatory sequential mixed method design which uses both quantitative and qualitative analyses for in-depth understanding.

Another study by Cai et al. (2020) studied the relationship between the children's school adaptation and academic achievement among Korean children. The sample size consisted of 695 children aged 10 years where 400 were boys while 295 were girls. The study used interviews for data collection and descriptive method was used to analyze the data. It was found out that there was a positive and a significant relationship between the children's adaptability and their academic achievement. The sample of this study was children from Korea, aged 10 years while the current study used form three students in Kenya to compare how the three constructs are affected by the cultural differences. Secondly, the study used interview to collect data and it is vulnerable to biasness while the current study used questionnaires to collect the data.

Al Akashee et al. (2020) did a study that aimed at identifying whether academic adaptation and academic performance were correlates. The variables were studied amongst university students of Sharjah in United Arab Emirates. The sample size used was 49 participants (29 males and 20 females), first year undergraduates and 152 third year undergraduates. The study used correlational research design. The participants completed the students' adaptation to college questionnaire. The results showed that in both groups the participants who scored higher on the adaptability scale were better performers. This study used correlational research design while the current study used explanatory sequential mixed method research design which expands on the quantitative results in order to compare the results.

Ochieng et al. (2019), did an investigation aimed at establishing whether a correlation exist between adaptability and students' achievement in Chemistry subject. The study was done in Rachuonyo South Sub-county. The target population was 4400 form three students of 2019 class. The sample size also included chemistry as well as guidance and counseling teachers. The study used correlational research design and the theory of planned behavior was used. Correlations were done and adaptability scores were found to relate positively to achieved Chemistry scores. This study used the theory of planned behavior which does not account for other variables that factor into behavior intention such as past experience to explain the interrelationships among variables while the current study used a different theory proposed by Ployhart and Bliese (2006) to explain the interrelationship and bridge the theoretical gap.

2.3 Relationship between Academic Psychological Capital and Academic Achievement

A number of studies conducted have correlated psychological capital and academic achievement. In Pakistan, Adil et al. (2020) investigated how psychological capital was associated with academic achievement among 300 university students. Perceived self-efficacy sub-scale, orientation towards life test, hope in academics and resilience in academic

scales were used to measure academic psychological capital components. The previous semester's average grades obtained by the students measured their achievement in academics. The structural equations model revealed a significant association between academic psychological capital and academic accomplishment. Academic psychological capital also had a parallel mediation between flow and self-handicapping behaviors and average grades. Academic psychological capital reduced self-handicapping behaviors and enhanced the flow experience, which in turn improved academic accomplishment. It was found that, learners who scored highly on the psychological capital scale performed better while those who scored lowly on the psychological capital scale, were found to be low achievers. This study was conducted in Pakistan among undergraduate students and the findings' generalization to Kenya may have limitations because university learning environment, academic demands and expected learning outcomes differ from those in secondary schools. Such experiences may make the students to adopt different psychological capital orientations to achieve their academic goals. The proposed study focused on psychological capital and academic achievement of secondary school students to fill the knowledge gap.

In Vietnam, a study done by Du and Chen (2021) investigated the relationship between positive academic emotions and academic achievement: the role of academic psychological capital. The target population was 1020 university students and the sample size was 613 university students. The study used a pre-designed questionnaire to collect the data on the relationship between the positive academic emotions, psychological capital and academic achievement. The study found out that psychological capital and the academic achievement of the university students had a positive and a significant relationship. While the study by Du and Chen (2021) focused on the university students who may be having different educational

experiences, the current study focused on the form three secondary school students in order to bridge this knowledge gap.

Carmona-Halty et al. (2021) did a study that investigated the relationship between psychological capital and academic achievement of adolescents. The study used descriptive survey method and sample comprised of 86 students (46 boys and 40 girls) from both government and private junior schools of Ghaziabad district in Uttar Pradesh by using simple random sampling. The data was collected using questionnaires and the data analysis was done using hierarchical linear modeling. The study's findings revealed that there was a significant relationship between the students' psychological capital and academic achievement. Given that the sample size was drawn from both government and private schools, the sample size might be too small to make generalizations about diverse population. The current study used Yamane (1967) formula to obtain the appropriate minimum sample size for the targeted population.

Ferreira et al. (2019) investigated the relationship between the students' psychological capital and academic performance. The sample size comprised of 1670 university students from four different universities in the city of Makassar in Indonesia. The female participants were (73.7%) with ages between 17 years to 24 years while the male participants were (26.3%). Correlational research design method was used to analyze the data and the results showed that psychological capital was related to the students' academic performance. This study used the psychological theory in human capital development that focuses on how an individual is changing while the current study used Broaden-and-Build Theory which explains an individual's positive psychological state of development to bridge the theoretical gap.

In Bahrain, Fati et al. (2019) sought to determine if psychological capital mediated the relations between academic stress and student engagement. To collect data, 371 undergraduate students were sampled from private universities in Bahrain. The study established that psychological capital significantly mediated the link that was evident in student engagement and academic stress. According to this study, the way students perceive teachers' demands and instructions combined with motivation to put forth their best efforts can all play a crucial role in fostering students' engagement with academics in general and perspectives on their own learning. This study focused on teachers' efforts in building psychological capital of the student. Furthermore, psychological capital was examined as a mediator variable. The proposed research aimed at looking at the psychological capital as a predictor of academic achievement of secondary school students in Kenya to bridge the knowledge gap.

In Ghana, a related study by Abukari (2018), examined the academic experiences of Ghanaian college students within the framework of resilience. A total of 30 college students were interviewed to yield data for the research. The focus was on the educational experiences of young people in Ghana who, in spite of numerous obstacles, managed to finish high school and enroll in college. The risk factors that were identified as having a negative impact on academic outcomes include socioeconomic and academic adversity resulting from spatial inequality and unfavorable cultural practices. Similar to social support systems, future orientation, and the personal trait of "not giving up" appeared as protective characteristics that have been shown to boost academic resilience. The reviewed study focused on university students and on one aspect of psychological capital. The current research aimed at establishing the extent to which psychological capital is related to academic achievement for more conclusive findings in the Kenyan context.

Onivehu et al. (2020) studied the relationship between psychological capital and academic performance of social work students in University of Ilorin in Nigeria. The target population was all 215 third and fourth year students. The sample size consisted of 180 aged between 19 years and 22 years both third and fourth year students selected by simple random sampling. The instrument of data collection that was used was a self-developed questionnaire. The study used descriptive survey research method of correlational type. The results indicated that there was a significant positive relationship between psychological capital and academic performance of the social work students. The sample size was drawn from a university and this limits generalization of the findings due to the schooling level. The current study was done in Kenya and among secondary school students in order to compare the findings between different schooling levels and bridge this knowledge gap.

In Kenya, Baluku et al. (2021) examined the relationship between psychological capital and School-To-Work Transition (STWT). Specifically, the study was on the mechanisms by which psychological capital affects students' readiness for STWT and how it helps to evaluate their success in careers. The study used 516 undergraduates learning in the last semester in Ugandan and Kenyan universities. The study established that the transition process heavily depends on one's capacity for swift adjustment. Those who struggle to make a smooth STWT face additional difficulties as they try to grow their careers. It was further established that psychological capital significantly affected perceptions of employability, preparation for STWT, and career satisfaction. Given that the population under focus was undergraduates, a question arises whether similar results may be obtained if learners were of a different level. The current study involved secondary school students in Kenya focusing on academic achievement to bridge the knowledge gap.

2.4 Relationship between Academic Engagement and Academic Achievement

Researchers have looked at the relationship between the students' academic engagement and academic achievement and found consistent patterns of correlations. A study conducted by Zhang et al. (2018) in China investigated whether academic engagement mediates the relation between internet addiction and how the learners achieve in academics. Data were collected over a six-month period from 2407 students in 47 courses by applying longitudinal methodology meant for short-term basis. The hierarchical data structure was explained by the use of a multilevel structural equation model. The findings showed that academic engagement significantly mediated the detrimental outcomes associated with internet addiction on student's eventual academic achievement. Additionally, the correlation among the variables was moderated among the high performing learners. However, the study focused on internet addiction among undergraduate students and limitations may arise if generalization of the findings is to be done among secondary level learners owing to the differences in learning experiences between university and secondary schools. The proposed research examined the extent to which academic engagement predicts academic achievement to address the gap.

Kuzminykh et al. (2021) did a study that investigated the relationship between the student's engagement and academic performance among primary school pupils in China. This study aimed at investigating whether the pupil's engagement influences academic performance in online education. The sample size comprised of 880 (480 boys and 400 girls) primary school pupils and whose age ranged between 8 years and 11 years. The data was collected using questionnaires and was analyzed using Pearson correlation. The analysis revealed that there was a positive and significant relationship between the pupil's engagement and their academic performance in online education. Given that the participants in this study were

primary school pupils who might not have developed the concept of academic engagement fully, this hence was a limitation. To address this population gap, the present study was done on secondary school setting where the participants age ranged between 14 years to 25 years.

A study done by Palos et al. (2019) looked at how the student's engagement and academic performance were related. This study was done among university students in Partido State University in Philippines. The sample size comprised of 200 fourth year students (106 males and 94 females). The study used descriptive correlational method and self-developed questionnaires were used for data collection. The findings of the study indicated that there was a relationship between the university student's engagement and their academic performance. Given that the sample size was drawn from the university students whose responses to questions may have been influenced by their level of education, there was a need for another study targeting learners on a lower level of education in order to address this knowledge gap.

A study done by Panadero et al. (2021) aimed at determining the influence of student's engagement on academic performance in Turkey. The participants of the study were 84 university students enrolled in a food science course. The study used questionnaires for data collection and the overall mean of the student's engagement was found to be 3.63($SD=.24$). The respondents were found to be more engaged in social engagement 3.98($SD=.63$), followed by emotional engagement 3.96 ($SD=.52$), behavioral engagement 3.46 ($SD=.44$) and lastly cognitive engagement 2.80 ($SD=.28$). This study used correlational research design to predict the influences of student's engagement towards academic performance. Secondly, the researcher used self-determination theory of motivation by (Deci and Ryan,1985) to form the basis of the study. The findings indicated that there was a significant relationship between the

student's engagements with academic performance. Given that this study used self-determination theory, the current study used engagement theory of learning by Kearsley and Shneidermann, (1999) to compare the results.

Another study was done by Myint and Khang (2020) on loneliness, student engagement, and academic achievement during emergency remote teaching during COVID 19. The study aimed at examining the relationship between loneliness, engagement and academic achievement among university students in Indonesia. The data was collected from 324 (all females) university students who were selected using purposive sampling. Correlation and regression analysis were used to analyze the data and the results indicated that student's engagement had a positive relationship with academic achievement. However, this study had some limitations; one, the participants were chosen using purposive sampling which is subject to biasness. Secondly the study used females only. The current study proportionately sampled the participants from both genders to address this gap.

In Nigeria, Kim et al. (2019) investigated how university students perceive e-learning, the mediating effect of academic engagement on their preparedness to handle technology and academic accomplishment in technology related courses. To obtain data, 614 students in a Korean university were sampled. The researchers investigated the links among the variables while the students were participating in university e-learning program. Partial least squares model was used in hypothesis testing. The results showed that the student's engagement mediated the link between learning experiences and digital experiences. The researchers concluded that in order for the students to be successful in their e-learning context at universities, they must be fully engaged. The study demonstrated the importance of academic engagement in learning and therefore, it was necessary to evaluate how academic engagement influences the achievement of the secondary school students.

In a Ghanaian higher education setting, Azilla-Gbetteor and Abiemo (2020) studied whether academic self-efficacy, perceived lecturer support and student engagement were linked. 376 undergraduates participated by filling in the questionnaires. Analysis of the data was done using descriptive statistics, structural equation modeling and partial least squares. It was established that engagement was positively and significantly predicted by academic self-efficacy and perceived lecturer support. Additionally, academic self-efficacy strongly moderated the relationship between student engagement and perceived lecturer support. Since the study focused on the predictors of student engagement, the proposed study examined how academic engagement predicts academic achievement to advance knowledge in this area.

Mtega (2021), studied the use of WhatsApp Messenger and its influence on the learning process which applied learner-centered approach in Tanzania. The academic resources that were shared via the messenger and the associated challenges in sharing the resources were investigated. The students and professors who were involved were selected purposively. The findings showed that WhatsApp Messenger was widely utilized to support learning and majority of the students embraced it. The results also showed that the use of WhatsApp improved student's engagement in reading. However, the study did not examine how student engagement was associated with academic achievement, a gap the current research aimed to fill.

2.5 Gender Differences in Academic Adaptability, Academic Psychological Capital and Academic Engagement.

There is a dearth of information on the gender differences in academic adaptability, academic psychological capital and academic engagement. However, the few studies that have been done were mostly done in the developed countries.

2.5.1 Gender Differences in Students' Academic Adaptability

Few studies have been done on gender differences on the students' academic adaptability. More specifically, there are no local empirical studies on the gender differences on the students' academic adaptability.

A study by Cholankeril et al. (2023) investigated gender differences in the use of coping strategies and their relationship to anxiety symptoms of workers during the initial covid-19 lock down period in USA. A survey was administered to a sample of 1673 respondents (66% women and 34% men). The results indicated that there were significant interactions between gender and coping strategies. Women were found to engage in high levels of active coping than men. This study was done among a sample of a working class people whose adaptability may have been influenced by their age and experience while the current study was done among secondary school students to bridge the population gap and compare the results.

Another study by Qian et al. (2018) investigated immigrant educational adaptation patterns between high school boys and girls. A representative sample of high school students was picked and studied and a longitudinal study was conducted. The findings revealed that there were significant gender differences in pattern of educational adaptation among boys and girls. This study gave inconclusive results since it did not reveal which gender adapted more. The current study sought to find out which gender adapted more to bridge the knowledge gap.

Another study done in Netherlands by Damman and Henkens (2020) focused on whether access to the workplace flexibility differs between male and female workers and how potential differences can be explained. Data was collected among 481 workers aged between 60-65 years. The findings indicated that women have less work place flexibility than men. This study focused on a working population and a question may arise if similar results may

be obtained if the study was done on a different population. The current study used secondary school students in Kenya to bridge the population gap.

Bashkireva and Bashkireva (2021) did a study which explored gender differences in adaptive reactions of students in the development of educational innovations using the non-invasive method of heart rate variability at Ryazan state university in Russia. A survey method was used to collect the data and comparative analysis was used to analyze the data. The findings revealed that, there were significant gender differences in adaptive responses in the implementation of information technology in education. This study used survey method which is subject to biasness while the current study used explanatory sequential mixed method to bridge the methodological gap.

2.5.2 Gender Differences in Students' Academic Psychological Capital

There is scarcity of studies on gender differences with regard to the student's academic psychological capital. Jayson (2019) looked at gender differences and the students' self-efficacy in California. The study used the experience sampling method to investigate gender differences in the students' self-efficacy states in high school physics. Two-level hierarchical linear model was used to analyze the data and the findings reported that female students had lower self-efficacy in physics than the male students who had higher self-efficacy in physics. This study used hierarchical linear model which has limited flexibility while the current study used explanatory sequential mixed method design to compare the results.

A study by Papyrina et al. (2021) focused on the gender differences and the students' self-efficacy in job skills among male and female students in Pakistan. The data was collected using survey method and the findings indicated that female students reported higher self-efficacy than male students. This study used survey method to collect the data and it is

subject to biasness while the current study used explanatory sequential mixed method design to collect the data and bridge the methodological gap.

Rani and Chatuvedula (2018) explored the relationship between positive psychological capital and job involvement among 100 males and 32 female officers of armed forces in India. The study aimed at investigating whether gender differences in psychological capital had any influence on job involvement. Psychological capital questionnaire and job involvement scale were administered on the sample. The data were analyzed using descriptives, pearson product moment correlation and regression analysis. The findings indicated that there was no evidence in support of the gender differences in psychological capital. This study sought to establish if there were significant gender differences in general psychological capital among male and female officers of armed forces in India while the current study sought to establish if there were significant gender differences in academic psychological capital among secondary school students in Kenya to bridge this population gap.

A study done by Mwangi et al. (2018) looked at the relationship among type of school, academic resilience and academic achievement among secondary school students in Kiambu county, Kenya. The researchers used a descriptive correlational design to analyze the data. A sample of 390 secondary school form three students was used and the data was collected using demographic form and the California Kids Survey (CHKS) resilience scale. The study used Bronfenbrenner's ecological transactional model of development to explain the relationship between school type, student academic resilience and academic achievement. The results revealed that there was a significant mean difference in the academic resilience scores when the type of school was considered and the difference was in favor of girls'

boarding schools. Interestingly, most of the students were found to have moderate levels of academic resilience. This study used Bronfenbrenner's ecological transactional model to explain the relationship between type of school, academic resilience and academic achievement while the current study used broaden-and-build theory to explain the components of psychological capital (resilience included) and how they relate the students' academic achievement to compare the results.

2.5.3 Gender Differences in Students' Academic Engagement

There is a dearth of information on gender differences in students' academic engagement Korlat et al. (2021) investigated gender differences in competence beliefs, intrinsic value, learning engagement and perceived teacher support. A sample of 19,190 Australian secondary school students participated in an online study in April 2020. Questionnaires were used to collect the data and Pearson's product moment correlation was used to analyze the data. The findings indicated that there was a higher perceived teacher support, intrinsic value and learning engagement among girls than boys while there were no significant sex differences found in competence beliefs regarding digital learning. This study was conducted in Australia while the current study was done in Kenya to bridge the setting gap and compare the results.

Houtte (2023) studied gender differences in educational engagement by looking at the three dimensions of gender; individual, interactional and institutional simultaneously. A sample of 5162 secondary school students in Belgium was used. The researcher used step-wise multi-level analysis to analyze the data. The results revealed that girls were more engaged in class than the boys. This study used step-wise multi-level analysis to analyze the data while the current study used multiple regression to analyze the data and compare the results.

Another study by Rozman et al. (2021) examined if there was a statistically significant gender differences in work satisfaction, work engagement and work efficiency among employees who work from home during the Covid-19 pandemic. The researchers used survey method to collect data and a sample of 785 employees in Slovenian companies was used. Factor analysis and t-test was used for two independent samples to analyze the data. The results showed significant gender differences in work satisfaction, work engagement and work efficiency between males and females who worked from home during the Covid-19 pandemic with men being more engaged than women. This study was done among employees in Slovenia while the current study was done in Kenya and among the secondary school students to bridge the population gap.

Banihashen et al. (2021) studied how female and male students differ in their engagement and self-regulation in an online constructivist learning design and learning analytics environment. A sample of 50 female and male graduates from Tabatabai University in Turkey participated in a module course. The engagement scale and self-regulation questionnaire were used to collect the data in two phases as pre-test and post-test. The results revealed that the female participants found the online constructivist learning design and learning analytics and self-regulative more engaging than male participants. This study used university students who have attained a higher level of learning while the current study used secondary school students to bridge the knowledge gap.

A study done by Ncororo et al. (2022) aimed at establishing prediction of academic engagement by intelligence beliefs among form three students in Meru County, Kenya. The study used convergent parallel mixed method to collect the data and a sample of 813 form three students from public secondary schools was used. The researchers used implicit self-

theories of intelligence to explain the relationship between the intelligence beliefs and academic engagement. The findings revealed that there were significant gender differences with regard to intelligence beliefs and academic engagement and the difference was in favor of the boys. This study used implicit self-theories of intelligence while the current study used engagement theory of learning to compare the results.

2.6 Prediction of Academic Achievement from Academic Adaptability, Academic Psychological Capital and Academic Engagement

There is very scanty literature on the prediction of academic achievement from academic adaptability, academic psychological capital and academic engagement. However, the few studies done previously have found out that academic achievement is predictable from academic adaptability, academic psychological capital and academic engagement. The studies reviewed in this section mostly focused on two predictor variables predicting the criterion variable. However, most of the studies reviewed were done in developed countries, and so there was a need for such a study in a developing country.

In Spain and Portugal, Martínez et al. (2019) examined how academic achievement, psychological capital and academic engagement were connected. Two distinct institutions, one in Portugal ($N = 243$) and one in Spain ($N = 389$) were involved. Academic engagement and psychological capital questionnaires were filled by the learners. Grade Point Average was used to evaluate academic achievement of the participants. Academic engagement, psychological capital, and academic achievement were found to have positive correlations in both samples. The findings also confirmed the academic psychological capital's role in mediating the link that was evident in academic engagement and performance. A better fit for the proposed model was found after investigating alternate models. The results showed that students who were intellectually involved recorded higher scores in psychological capital as well as demonstrating an improvement in their academic performance. The study was

however done among undergraduates from two different countries hence limiting generalizability of the results due to differences in the culture of the learners. The current research examined the same variables using a sample drawn from one country in order to bridge the gap.

In Australia, Collie and martin (2019) examined how adaptability, academic engagement and achievement were linked. Data was obtained from 186 undergraduate students by administering academic engagement and adaptability questionnaires. The findings indicated that academic engagement, adaptability and academic achievement were positive correlates. The findings also confirmed that adaptability positively impacts on academic engagement which in turn influences performance of the students. The study was however done among undergraduate students and results may be generalized to university students who have the similar learning experiences as those learners involved in the study. Therefore, there is a gap on how these variables would relate if studied among secondary school students. In order to bridge the gap, the current research examined how academic adaptability, academic psychological capital and academic engagement predicts academic achievement.

In South Africa, a study was done by Veldsman, (2018) to investigate the relationship between psychological capital, academic engagement and performance. Data were collected through questionnaires where 234 postgraduate students were involved. From the exploratory factor analysis, psychological capital related positively to academic engagement as well as performance. It was revealed that psychological capital positively predicted academic engagement amongst the students. It was established that this variable raises the level of self-efficacy, optimism and hope which contributes to their overall performance. The study was however done among postgraduate students whose level of education is quite advanced.

Generalization of these findings may not apply to learners of a lower level of education. In order to bridge this gap, the current research focused on examining the same variables among secondary school students.

2.7 Summary of Literature Reviewed and Gap Identification

From the foregoing review of the related literature, it was found that academic adaptability significantly relates to academic achievement. However, most of the studies involved college and university students. Academic adaptability of college and university students may be different from that of secondary school students owing to differences in academic demands. Furthermore, little has been done in Kenya on how academic adaptability and academic achievement relate, hence the proposed study becomes necessary.

Academic Psychological capital is an essential construct in predicting academic achievement although most of the studies looked at university students. Academic engagement also significantly relates to academic achievement but most of the studies involved university and college students from developed countries. This study focused on secondary school students from a developing country to enhance the generalization of the results. Additionally, some of the studies focused on general adaptability, general psychological capital and general engagement and how it relates to students' achievement.

This study was done as an effort to examine specifically how academic adaptability, academic psychological capital and academic engagement predicts academic achievement among secondary school students and contribute knowledge in this field. Additionally, very few studies have been done in Kenya and more specifically in Kitui County on these constructs. The focus of this research was to establish if there was a link between academic adaptability, academic psychological capital, academic engagement and academic achievement among secondary school learners to bridge the gap.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research design, research variables, research methodology, location of the study, target population, sampling techniques and sample size determination. Additionally, the chapter also discusses research instruments, pilot study, validity and reliability of the research instruments, data collection techniques, and data analysis. Logistical and ethical considerations of the study were also presented.

3.2 Research Design

This study used explanatory sequential mixed method research design. According to Clark (2011) and Creswell (2018), this design involves first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results. The purpose of this embedded design is to collect quantitative and qualitative data sequentially, and to have one form of data playing a supportive role to the other form of data. The researcher first collected and analyzed the quantitative data and then qualitative data was collected in the second phase of the study. Thus, qualitative data was used in the subsequent interpretation and clarification of the results from the quantitative data analysis. According to Creswell, (2018), this research design, helps the researcher to seek elaboration and clarification of the results. In this study therefore, this design helped the researcher to gain a deeper understanding of the relationship between academic adaptability, academic psychological capital, academic engagement and academic achievement.

3.3 Research Variables

The study variables were academic adaptability, academic psychological capital, academic engagement and academic achievement. The predictor variables were academic adaptability, academic psychological capital and academic engagement. Academic achievement was the criterion variable while gender was the intervening variable. Academic adaptability,

academic psychological capital, academic engagement and academic achievement were measured at an interval level of measurement while gender was measured at nominal level of measurement. Academic achievement was obtained from the respondents' mean scores in the form three end of term one examinations and the term two opener exams in the year 2023. The mean scores were converted into standard Z-scores and then transformed into T-scores to make them comparable among the different schools.

3.4 Research Methodology

Mixed methodology was used in this study in order to establish the relationship between academic adaptability, academic psychological capital, academic engagement and academic achievement. The researcher collected and analyzed quantitative and qualitative data in two consecutive phases. In this study, quantitative findings from the structured questionnaires were explained in depth by the findings from the qualitative data obtained from the interviews to make them more insightful Creswell (2018).

3.5 Location of the Study

The study was conducted in Kitui County. Over the years, the county has been experiencing consistent below average performance in KCSE compared to the neighbouring counties especially in the sub-county secondary schools which translates to educational objectives not being met in the county. For instance, in the year 2017, 68% of the students who sat for the KCSE in the county scored grade D+ and below. In Makueni county we had 48%, Embu county 58%, Machakos county 51% while in Tharaka Nithi county we had 62% in the same year 2017 (Regional Education office, 2021). In the years 2018 to 2021, the percentages of the students who scored D+ and below in Kitui county were 52%, 61%, 55% and 56% respectively (Kitui County Education Office, 2021). In Makueni county, the percentages of the students who scored D+ and below during the years 2018 to 2021 were 49%, 56%, 50%, and 47%. In Embu county, the percentages of the students who scored D+ and below during

the years 2018 to 2021 were 51%, 55%, 44% and 53%. In Machakos county, the percentages of the students who scored D + and below for the years 2018 to 2021 were 47%, 55% 48% and 45% while in Tharaka Nithi county the percentages were 46%, 48% 49% and 51% respectively (Regional Education office 2021). From above evidence, Kitui county had the largest number of students who scored D+ and below compared to the neighbouring counties in the Eastern region. This implies that majority of the learners were not able to join institutions of higher learning. This problem has been persistent over the years despite the efforts that have been made to address it, therefore necessitating the choice of this locale. Many factors such as students' psychological factors, teacher factors and school factors have been associated to the below average performance in Kitui County (Munyithya, 2019; Musyoki, 2020). This study therefore investigated how academic adaptability, academic psychological capital and academic engagement relates to academic achievement to try and unmask this problem in the county. The summary of the Kitui County KCSE performance over the years is evident in Table 3.1.

Table 3.1

Summary of Kitui County KCSE Performance (2017 to 2021)

Year	Grades								
	A	A-	B+	B	B-	C+	C	C-	D+ and below
2017	0	5	29	73	97	122	176	271	1642
2018	1	24	59	131	124	165	198	248	1012
2019	0	17	40	120	136	170	156	335	1526
2020	0	12	50	100	150	196	250	400	1442
2021	0	08	70	118	132	218	209	380	1380

Source: County Director of Education Office (2021)

3.6 Target Population

The target population for this study was 10080 (5130 boys and 4950 girls) sub-county secondary school students. The target group was form three students in the sub-county secondary schools within Kitui County in the year 2023. Form three students were chosen for the sample because they have spent most of their three quarters of their secondary life and are likely to be well oriented towards academics. According to Collie et al. (2019) students in their third year in school are supposed to have shown a registered level of psychological variables.

3.7 Sampling Technique and Sample Size Determination

3.7.1 Sampling Techniques

The study was conducted in Kitui County which was selected using purposive sampling technique. The county was purposively selected because cases of below average performance among sub-county secondary school students have been on the rise in the county Munyiithya (2019). The schools to be involved in the study were selected using purposive sampling technique based on school categories. Simple random sampling technique was used to select one stream in schools with more than one stream. Stratified random sampling was used to categorize the schools into boys boarding, girls boarding, coeducational boarding and coeducational day secondary schools. Form three students in the county were selected using purposive sampling because they are assumed to have shown a registered level of academic adaptability, academic psychological capital and academic engagement. The students to be involved in the study from each school category were selected using proportionate sampling technique.

3.7.2 Sample Size Determination

The researcher used Yamane (1967) formula to obtain the sample size. The formula is as follows;

$n = \frac{N}{1+N(0.05)^2}$ where n is the sample size, N is the target population and e is the significance level. From a target population of 10080, the sample size is obtained as follows;

$$n = \frac{10080}{1+10080(0.05)^2} = 385$$

According to Draugalis et al. (2008), the sample size is increased by between 10% and 15% to take care of attrition and non-response in the final analysis. Therefore, the sample size for this study was increased by 11% to obtain 427 students.

The sample size from each school type was obtained using proportionate sampling as follows; $n_{sc} = \frac{N_{sc}}{N_T} \times 385$, where n_{sc} is the sample size from school type, N_{sc} is the target population in the school type and N_T is the total target population. The sample size from each school type was proportional to relative size of that category in the population.

Table 3.2 shows the target population and the sample size.

Table 3.2

Target Population and Sample Size

Type of school	Population		Sample size			
	Schools	Students		Schools	Students	
		Boys	Girls		Boys	Girls
Boys boarding	20	1500	-	3	63	-
Girls' boarding	15	-	1200	2	-	50
Co-edu. Boarding	10	1130	1050	2	48	45
Co-edu. Day	30	2500	2700	3	107	114
Sub-total		5130	4950		218	209
Total	75	10080		10		427

According to the data obtained from the Kitui county Director of Education's office (2022), there are 10080 form three students in sub-county secondary schools (5130 boys and 4950

girls). The sample size was 427 students (218 boys and 209 girls) who were obtained from 10 sub- county secondary schools.

3.8 Research Instruments

Questionnaires, interview schedule and a pro forma summary of students' academic results were used to collect data.

3.8.1 Academic Adaptability Scale

The researcher adapted adaptability scale developed by Martin et al. (2013) to measure academic adaptability of the students. The original scale had 9 items which were all adapted to fit the form three students. The scale developer's established that reliability coefficient was .87 but the researcher carried out a pilot study to establish its reliability among secondary school students in Kenya. The 9 items in this scale measure adaptability on a five point Likert scale ranging from *Strongly Disagree* to *Strongly Agree*. It consists of three sub-scales namely; cognitive, behavioral and affective. Cognitive adaptability was measured by items 1-3, behavioral adaptability was measured by items 4-6 while affective adaptability was measured by items 7-9. Scoring was done by adding the scores for each item. The scores ranged from 9 to 45 on the global scale and 9-15 for the sub -scales. A score between 9 and 27 implied low level of adaptability, 28 and 35 implied moderate level of academic adaptability while a score between 36 and 45 signified high level of academic adaptability. The research instrument was free for use and the source has been referenced according to the APA 7th edition.

3.8.2 Academic Psychological Capital Scale

This scale was developed by Lorenz et al. (2016) to measure psychological capital of students. The authors reported a reliability coefficient of .83. The original scale comprises of 12 items which were all adapted. The 12 items measure psychological capital on a five point Likert scale (*Strongly Disagree* to *Strongly Agree*). It consists of four sub -scales namely;

Self-efficacy, hope, optimism and resilience and the authors reported reliability coefficients of .85, .82, .86 and .73 respectively. Scoring involved calculating the sum of the scores. The expected maximum score was 60 while the minimum score was 12. A score between 48 and 60 implied high level of psychological capital while a score below 48 implied low level of psychological capital. This research instrument was free for use and the source has been referenced according to the APA 7th edition.

3.8.3 Academic Engagement Scale

This questionnaire was developed by Hart et al. (2011) with a reliability coefficient of .79. The original scale had 14 items which were all adapted to suit the purpose of this study. The 14 items measured academic engagement of the students on a 5-point Likert scale that ranges from *Strongly Disagree* to *Strongly Agree*. The responses were scored by adding the scores from each item. The expected maximum score was 70 while the minimum score was 14. A score below 42 indicated low level of academic engagement while a score between 56 and 70 signified high level of academic engagement. A score between 43 and 55 signified moderate level of academic engagement. The researcher was given permission by the authors to use this instrument (Appendix E) and the source has been referenced.

3.8.4 Interview Schedule

The researcher used a semi-structured interview schedule to collect qualitative data on the students' academic adaptability, academic psychological capital and academic engagement. The academic adaptability, academic psychological capital and academic engagement semi-structured interview guides had five questions each. The interview schedule was constructed by the researcher and the 15 items were a clarification of those items from the questionnaires. The qualitative data helped the researcher in understanding of the better meaning of the quantitative data obtained in the first phase. The interviews were conducted on 40 participants where, the first 20 participants were the ones who rated themselves highly on

academic adaptability, academic psychological capital and academic engagement. The other group of 20 participants were the ones who rated themselves lowly on academic adaptability, academic psychological capital and academic engagement scales. The interview schedule was divided into two parts; section A and B. Section A was used to collect background information of the students which included school code, gender, age and school category. Section B was used to collect data on Academic adaptability. Section C collected data on Academic Psychological Capital and section D collected data on Academic Engagement.

3.8.5 Pro Forma Summary of Students' Examination

To measure the students' academic achievement, the researcher examined the achievement records of the form three students in the sub-county secondary schools. The total marks for the form three end of term one examinations and the term two opener examinations in the year 2023 were obtained. The average score for every student was tabulated on the two examinations. The mean scores were transformed into Z- scores and then into T-scores so as to make them comparable among the students in different schools.

3.9 Pilot Study

The researcher carried out a pilot study in one school in Kitui central sub-county to pre-test the research instruments. It helped the researcher to prepare appropriately for the actual study. The pilot study was carried out on 30 randomly sampled students from one of the co-educational boarding secondary schools. The reliability coefficients from the pilot study were 0.79, 0.77 and 0.72 for academic adaptability, academic psychological capital and academic engagement respectively. According to Oladimeji (2015) a reliability coefficient of 0.70 and above is considered appropriate. The validity of the research instruments was cross checked by the the supervisors and the peers in the department of educational psychology. They reviewed the items in the questionnaires to ensure face validity while construct validity was tested using factor analysis. The school used was not involved in the actual study. The data

collected was used to test the validity and reliability of the research instruments. The pilot study also helped the researcher to estimate the time required to fill in the research instruments. Piloting also helped the researcher to know the appropriateness of the tools which were used in the study and whether there were issues of ambiguity on the questions and acquaint with the whole process of data collection.

3.9.1 Validity of the Research Instruments

The university supervisors in the Department of educational psychology, Kenyatta University through reviewing of the questionnaires crosschecked content validity. Colleague students also read the items in the questionnaires and gave their recommendations. Factor analysis was used to establish construct validity of the research instruments.

3.9.2 Reliability of the Instruments

The researcher used internal consistency reliability method to determine the instruments' reliability. The researcher chose this method because it requires only one administration of a single form of a test Gay (1999). The internal consistency method was used to assess the correlation between multiple items in the questionnaire. Cronbach's alpha which is a measure of internal consistency was used to determine the internal consistency of the research instruments. In an event where a correlation of .70 and above is obtained, it indicates that the research tools are reliable Mcnesh (2018).

3.10 Data Collection Techniques

Data was collected in two phases, where the first phase was the administration of questionnaires to the respondents in order to obtain the quantitative data. The questionnaires were administered in a period of one hour (4pm-5pm) with the help of the class teachers. The reason for the second phase was to seek an in-depth explanation of the results from the quantitative data. The second phase was the administration of interview schedules to the respondents who had rated themselves highly and also those who had rated themselves lowly

on academic adaptability, academic psychological capital and academic engagement questionnaires. The interview responses were recorded using a mobile phone voice recorder which was then coded and stored in the lap top for analysis. The researcher requested form three class teachers for the academic achievement records so as to get the academic data for the end of term one exams and the term two opener examinations, 2023.

3.11 Data Analysis

3.11.1 Quantitative Data Analysis

This study collected quantitative and qualitative data. The Statistical Program for Social Science program (SPSS) version 25.0 was used to analyze the quantitative data. Procedures for descriptive and inferential statistics were used. Null hypotheses were tested using inferential statistics while mean and standard deviation were used to describe the characteristics of the participants. The degree of relationship that exists between academic adaptability and academic achievement, academic psychological capital and academic achievement and academic engagement and academic achievement were measured using Pearson's product moment correlation (r). According to Schober et al. (2018), Pearson product moment correlation was used to establish the degree and the direction of the correlation between each two variables. Multiple regression was used to test the predictive weight of academic adaptability, academic psychological capital and academic engagement on academic achievement. According to Beslsey et al. (1980), multiple regression is used to determine the influence of one or more predictor variables on the outcome variable. The researcher used t-test to establish whether there were significant gender differences in students' academic adaptability, academic psychological capital and academic engagement. According to Zimmermann (2004), t-test is used to compare the means of two samples. Finally, structural modelling equation was done to establish the best model that can be used

to predict academic achievement. The following null hypotheses were tested using Pearson's product moment correlation coefficient, t-test and Multiple regression.

H₀₁: There is no significant relationship between academic adaptability and academic achievement among form three students in Kitui County. Statistical Technique: Pearson's product moment correlation.

H₀₂: There is no significant relationship between academic psychological capital and academic achievement among form three students in Kitui County. Statistical Technique: Pearson's product moment correlation.

H₀₃: There is no significant relationship between academic engagement and academic achievement among form three student in Kitui county. Statistical Technique: Pearson's product moment correlation.

H₀₄ There are no significant gender differences in academic adaptability, academic Psychological capital and academic engagement in relation to the academic achievement. Statistical Technique: t- test for independent samples

H₀₅: There is no significant predictive model of academic adaptability, academic psychological capital and academic engagement on academic achievement. Statistical Technique: Multiple regression.

3.11.2 Analysis of Qualitative Data

To analyze the qualitative data, the researcher grouped the responses into four common themes developed from academic adaptability, academic psychological capital and academic engagement scales. The purpose of the qualitative data was to help the researcher to have an in depth understanding of the quantitative data Creswell (2018). The interview schedule had 15 items whose purpose was to examine the students' academic adaptability, academic psychological capital and academic engagement. The qualitative analysis grouped the

learners into those who had high and low levels of academic adaptability, academic psychological capital and academic engagement.

3.12 Logistical and Ethical Considerations

3.12.1 Logistical Considerations

Once the research proposal was accepted at the Department of Educational Psychology and the Graduate school, the researcher obtained research authorization letter from Kenyatta University's Graduate school. The authorization letter was used to apply for a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Once the research permit was obtained, the researcher reported to the Kitui County Director of Education and county commissioner for authorization to carry out the study in the county. The researcher assembled all the requirements for data collection. The research instruments were printed and counter checked to ensure all the questions have been printed. The schools to be involved in the study were identified and then appointments were booked with the principals for data collection.

3.12.2 Ethical Considerations

The researcher adapted the questionnaires that were used in data collection. In line with ethical guidelines for research, the researcher requested for written permission from the authors to use their instruments. The students who were involved in this study did so voluntarily without coercion. The respondents were given a consent form with all the details concerning the study. They were allowed to read it and understand the purpose of the study before making an informed decision to participate or decline to participate in the study. Confidentiality was strictly adhered to throughout the research process. The respondents were not required to write their real names on the questionnaire.

The data collected was only used for the purpose of this study and the results were presented in summary form without any information that could be used to identify the respondents. The references used in the study were acknowledged and cited appropriately.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings, interpretation and discussions of the results according to the objectives of the study and the stated hypotheses. The first section in this chapter is the introduction, which is followed by the return rate and then the participants' demographic analysis. Appropriate descriptive statistics for every objective is given together with the inferential statistics testing each of the null hypotheses on the third section. The fourth section presents the findings of the qualitative analysis of the earlier obtained quantitative findings.

4.2 Return Rate

In this section, general information on the questionnaires return rate is presented. The data is presented in Table 4.1.

Table 4.1

Return Rate

Type of school	Sample size Schools	Students		Return rate Students	
		Boys	Girls	boys	girls
Boys Boarding	3	63(14.8)	-	60 (95)	-
Girls Boarding	2	-	50(11.7)	-	48 (96)
Coeducational Boarding	2	48(11.2)	45(10.5)	47(98)	42(93)
Coeducational Day S.	3	107(25)	114(26.8)	105(98)	113(99)
Sub-total		218(51)	209(49)	212(97)	203(97)
Total	10	427(100)		415 (97)	

Note. N=415, () percentage

From Table 4.1, it is observed that the sampled schools were 10 public sub-county secondary schools and the number of the respondents who participated in the study were 427 (218 boys, 209 girls). However, from the same Table 4.1, it is observed that the return rate for the questionnaires was 97%, which represents a total of 415 questionnaires (212 girls, 203 boys). All the 427 questionnaires were administered and collected but during data coding and cleaning, it was discovered that 8 questionnaires were not fully filled up and so they were discarded. The statistics in the same table show that majority of the participants were drawn from the coeducational day schools (51.8) while the least figure was drawn from the girls boarding (11.7). The second largest number of participants was drawn from the Coeducational boarding (21.7). Male respondents in this study were the majority representing 51% of the total participants while the female respondents represented 49% of the total participants. According to a criterion by Creswell (2014), a return rate of 70% and above is excellent for a survey.

4.3 Demographic Analysis

In this section, the researcher looked at the descriptions of the participants age, cross tabulations of their age and gender, age and the school type and lastly gender and school type.

4.3.1 Age of the Participants

The participants' data on age was collected and analyzed and the findings were presented in Table 4.2.

Table 4.2*Description of the Participants Age in Years*

Age	Frequency	Percent
14-18	382	92
19-25	32	7.8
26 &above	1	0.2
Total	415	100

Note. N=415, () =percent

From the above Table 4.2, participants who were aged between 14-18 were 382 and formed the largest percentage of (92) while those that were aged between 19-25 were 32 and formed a percentage of (7.8). Only one participant was aged 26 years and above and formed a percentage of (.2)

4.3.2 Participants Age and Gender

A cross tabulation of the participants age and gender was done and the results were presented in Table 4.3.

Table 4.3*Descriptions of the Participants Age and Gender*

	Gender		Total
	Boys	Girls	
Age 14-18	188 (45)	194(46.7)	382(92)
19-25	23 (6)	9 (2.2)	32(7.8)
26 and above	1 (0.2)	-	1(0.2)
Total	212(51.2)	203(48.9)	415(100)

Note. N=415, () percentage.

From Table 4.3, it is observed that female respondents aged between 14-18 were 194 and formed the majority with (46.7%) while the male participants in the same age bracket formed less than half of the total participants (45%). Male participants whose age ranged between 19-25 formed less than a quarter of the total participants (6%) while their female counterparts in the same age bracket were the least (2%). There was only one male participant who was aged 26 and above.

4.3.3 Participants Age and School Category

The students' age and school category was cross-tabulated and the results were presented in Table 4.4.

Table 4.4

Descriptions of Participants Age and School Category

	Type of school				Total
	BB	G B	CB	CDS	
Age 14-18	51(12.3)	44(10.6)	82(19.8)	205(49.4)	382(92.1)
19-25	9(2.2)	4(0.96)	6(1.5)	13(3.1)	32(7.7)
26 & A	0	0	1(0.2)	0	1(0.2)
Total	60(14.5)	48(11.56)	89(21.5)	218(52.5)	415(100)

Note. N=415, BB=boys boarding, GB=girls boarding, CB=coeducational boarding, CDS=coeducational day school, ()=percentage.

As given in Table 4.4, majority of the participants' (49.4) aged between 14-18 were found in coeducational day schools. In the same age bracket, those who were in coeducational boarding schools were (19.8) and the least percentage of (10.6) in the same age bracket were enrolled in girls boarding. On the other hand, the largest percentage of the participants aged

between 19-25 was found in coeducational day school (3.1) followed by those in co-educational boarding (1.5) while the least percentage (0.96) was found in the girls boarding schools. Participants aged 26 and above had the least percentage (0.2) and was only found in coeducational boarding.

4.3.4 Participants' Gender and School Category

The students' gender and school category was cross-tabulated and the results were presented in Table 4.5 below.

Table 4.5

Descriptions of Participants Gender and School Category

	Type of school				Total
	BB	G B	CB	CDS	
Gender Male	60(14.5)	0	47(11.3)	105(25.3)	212(51.1)
Female	0	48(11.6)	42(10.1)	113(27.2)	203(48.9)
Total	60(14.5)	48(11.6)	89(21.4)	218(53)	415(100)

Note. N=415, BB=boys boarding, GB=girls boarding, CB=coeducational boarding, CDS=coeducational day secondary, () =percentage.

As shown in the Table 4.5, there were more girls (27.2) than boys (25.3) in the coeducational day secondary school. On the other hand, there were more boys (11.3) than girls (10.1) in the coeducational boarding schools. In the boys boarding, there were more participants (14.5) than in the girls (11.6) boarding schools.

4.4 Results as per the Study Objectives

The findings of this study were presented according to the stated objectives. The relevant descriptive statistics for each objective was given followed by the specific inferential statistics used to test the null hypothesis. Finally, a discussion of the findings was given.

4.4.1 Relationship between Academic Adaptability and Academic Achievement

The first objective of the study needed to establish whether academic adaptability predicted academic achievement among the form three students. The researcher operationalized the participant's scores in the academic adaptability questionnaire in order to achieve this objective. Descriptive statistics for academic adaptability and academic achievement were conducted and presented in the following section.

a. Descriptive Statistics of Academic Adaptability

The participants' academic adaptability scores were analyzed to get the range, mean, standard deviation, skewness and kurtosis. The results were presented in Table 4.6

Table 4.6

Description of Academic Adaptability Scores

<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Sk</i>	<i>Kur</i>
415	27.00	9.00	36.00	23.83	5.3	-.125	-.133

Note. *N*=415, *MIN*=Minimum, *MAX*=maximum, *SD*=Standard deviation, *SK*=Skewness,

Kur=Kurtosis

As indicated in Table 4.6, the minimum and the maximum scores were 9 and 36 respectively giving a range of 27. The mean score was 23.8 (*SD*=5.3) meaning that most of the learners had low academic adaptability. The minimum and maximum scores were 9 and 45 respectively. The scores were negatively skewed with the coefficient of skewness as -.125 meaning that most of the participants had rated themselves highly on the academic adaptability scale. The Kurtosis was -.133 which showed that the distribution was platykurtic with more scores at the extremes and very few scores concentrating around the mean. Further analysis was done to determine the descriptive statistics of academic adaptability by gender

in order to compare the mean of the boys and the girls in this study and the results were as presented in Table 4.7.

Table 4.7

Descriptive Statistics of Academic Adaptability by Gender

Gender	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Range</i>	<i>Mean</i>	<i>SD</i>	<i>Kur</i>	<i>Sk</i>
Boys	212	9.00	36.00	27.00	23.39	5.18	-.27	-.10
Girls	203	9.00	36.00	27.00	24.28	5.42	.03	-.18
Total	415	9.00	36.00	27.00	23.83	5.31	-.133	-.13

Note. *N*=415, *Min*=Minimum, *Max*=Maximum, *SD*=Standard Deviation, *Kur*=Kurtosis, *SK*=Skewness.

As indicated in Table 4.7, the range for both participants was 27 with the minimum and the maximum scores being 9 and 36 respectively. On the other hand, the girls' had the highest mean 24.28(*SD*=5.42) while boys had the least mean 23.39 (*SD*=5.18). As observed from the same table 4.7, the boys' kurtosis was -.27 implying that the distribution of their scores was platykurtic meaning that more scores were spread out. The boys were also found to have a negative skewness of -.10 meaning that majority of the boys rated themselves highly on the academic adaptability scale. On the other hand, the girls Kurtosis was found to be .03 which implied that the distribution of their scores was leptokurtic meaning that more scores were concentrated around the mean. Finally, the girls were also found to have a negative skewness of -.18, which implied that more girls, just like the boys rated themselves highly on the academic adaptability scale.

To categorize, the participants' academic adaptability levels into low, moderate and high their academic adaptability scores were used. The findings were presented in Table 4.8.

Table 4.8*Descriptions of the Participants Levels of Academic Adaptability*

	Frequency	Percent
low	315	75.9
Moderate	93	22.4
high	7	1.7
Total	415	100.0

Note. N=415

Most of the participants were rated as having a low level of academic adaptability (75.9%) as observed from Table 4.8 while less than half of the total participants were rated as having moderate level of academic adaptability (22.4%). Only 1.7% of the participants were rated as having high level of academic adaptability. Since academic adaptability has three subscales; cognitive adaptability, affective adaptability and behavioral adaptability, the researcher focused on their analysis. Therefore, further analysis of the participants' academic adaptability sub-scales was done to determine the range, mean, standard deviation, skewness and the kurtosis of each of the sub-scale and the findings were presented in Table 4.9.

Table 4.9*Descriptive Statistics of the Academic Adaptability Sub-Scales*

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>SK</i>	<i>Kur</i>
BA	415	12.00	3.00	15.00	11.16	2.13	-.37	-.06
AA	415	12.00	3.00	15.00	10.74	2.60	-.58	-.03
CA	415	12.00	3.00	15.00	10.81	2.45	-.57	-.04
Valid N (listwise)	415							

Note. *N*=415. *Min*=Minimum, *Max*=Maximum, *SD*=standard deviation, *SK*=skewness, *KUR*=kurtosis, *BA*=behavioral adaptability, *AA*=affective adaptability, *CA*=cognitive adaptability.

As shown in Table 4.9, the highest mean was obtained from behavioral adaptability domain 11.16 (*SD*=2.13) followed by cognitive adaptability 10.81(*SD*=2.45) while the least mean was obtained on the affective adaptability domain 10.74 (*SD*=2.60). The distribution of the scores for all the domains were negatively skewed, meaning that all the participants' rated themselves highly on the three sub-scales. Kurtosis values were less than 3 implying that there was a platykurtic distribution which means that the scores were more widely spread out from the mean. Further analysis was done on the participants' academic achievement. Firstly, the participants' end of term one examination and the term two opener examination 2023 were obtained and the average calculated. The mean scores obtained were transformed into Z-scores and then into T-scores to make them comparable among the students in different schools. The findings were presented in Table 4.10.

Table 4.10*Participants' Descriptive Statistics of Academic Achievement*

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Sk</i>	<i>Kur</i>
academic achievement	415	54	25	79	50	10	.07	.2

Note. *N*=415, Max=Maximum, Min=Minimum, S=Standard deviation, SK=Skewness, Kur=Kurtosis

As it is observed from Table 4.10, the range was 54 meaning that the maximum and the minimum T-scores were 79 and 25 respectively. The mean for the students' academic achievement was found to be 50 while the standard deviation was 10 meaning that the distribution of the participants' academic achievement scores had been transformed into T-scores. The kurtosis for the academic achievement T-scores was .2 implying that the distribution was leptokurtic meaning that more scores were concentrated around the mean. As a result, the researcher sought to determine the levels of academic achievement of the participants. The results of the analysis were presented in Table 4.11.

Table 4.11*Levels of Academic Achievement*

	Frequency	Percent
Low	29	7.0
Moderate	370	89.2
High	16	3.9
Total	415	100.

Note. *N*=415.

As shown from Table 4.11, more than three quarters of the total participants were classified as being moderate in their academic achievement (89.2). The participants who were found to have low academic achievement were (7.0) while those that were found to have high

academic achievement were the least (3.9). The researcher sought to determine the academic achievement levels across different levels of academic adaptability. The findings were presented in Table 4.12.

Table 4.12

Academic Adptability Levels Across Levels of Academic Achievement

		Levels of Academic Achievement			
		Low	Moderate	High	Total
Levels of Academic Adaptability	Low	18(4.3)	79(19)	9(2.2)	106(25.5)
	Moderate	0	252(60.7)	0	252(60.7)
	High	11(2.7)	39 (9.5)	7 (1.7)	57(13.8)
	Total	29(7)	370(89.2)	16(3.9)	415(100)

Note. N=415, ()=percent

As shown in Table 4.12, (4.3) of the total participants were found to have low levels of academic achievement and academic adaptability. It is also observed that (19) of the total participants were found to have moderate levels of academic achievement and low levels of academic adaptability. Lastly, (2.2) of the total participants were found to have high levels of academic achievement and low levels of academic adaptability. On the other hand, (60.7) of the total participants were found to have moderate levels of both academic achievement and academic adaptability while (1.7) of the total participants were found to have high levels of both academic adaptability and academic achievement. From the same table 4.12, it is also shown that (9.5) of the total participants were found to have high levels of academic adaptability and moderate levels of academic achievement. According to this analysis, more than three quarters of the total participants who were found to have low and moderate levels of academic achievement were also found to have low and moderate levels of academic adaptability hence explaining their low academic achievement. This finding may be used to

explain the problem of low academic achievement in the sub-county secondary schools in Kitui county. The researcher went further and sought to determine the academic achievement means across different levels of academic adaptability. The findings were presented in Table 4.13.

Table 4.13

Levels of Academic Adaptability across Academic Achievement

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
LAA					
Low	315	24.65	75.61	37.34	18.16
Moderate	93	27.57	68.33	47.24	7.95
High	7	30.48	78.52	60.30	8.19

Note. *N*=415, *MIN*=minimum, *MAX*=maximum, *SD*=standard deviation, *LAA*= level of academic adaptability.

As observed from Table 4.13, participants who were found to have high levels of academic adaptability were found to have the highest mean 60.30 (*SD*=8.19). Those who were rated as having moderate levels of academic adaptability followed with a mean of 47.24 (*SD*=7.95) while those who were rated as having low level of academic adaptability had the least mean of 37.34(*SD*=18.16). This finding can be used to explain the problem of low academic achievement in the sub-county secondary schools in Kitui county. More than three quarters of the total participants who were found to have low and moderate levels of academic achievement were also found to have low and moderate levels of academic adaptability hence explaining their low academic achievement.

b. Hypothesis Testing

In order for the researcher to determine how academic adaptability, relates to academic achievement, the first null hypothesis was stated as follows:

H₀₁: There is no significant relationship between the students' academic adaptability and Academic achievement.

Firstly, the assumptions of regression analysis were tested before testing the hypothesis.

4.4.2.1 Test for Assumptions of Regression Analysis

To test for the normality of the scores of academic adaptability, academic psychological capital, academic engagement and academic achievement, two methods were used; skewness and kurtosis coefficients and a histogram. The findings are presented in Table 4.14 and figure 4.1 below.

Table 4.14

Normality Assumption Test

N	Skewness		kurtosis	
	Statistic	std.Error	statistic	std.Error
AA TOTAL	415	.140	-.321	.298
APC TOTAL	415	.140	-.235	.141
AE TOTAL	415	.140	-.501	.499
AA TOTAL	415	.140	-.281	.332
Valid (listwise)	415			

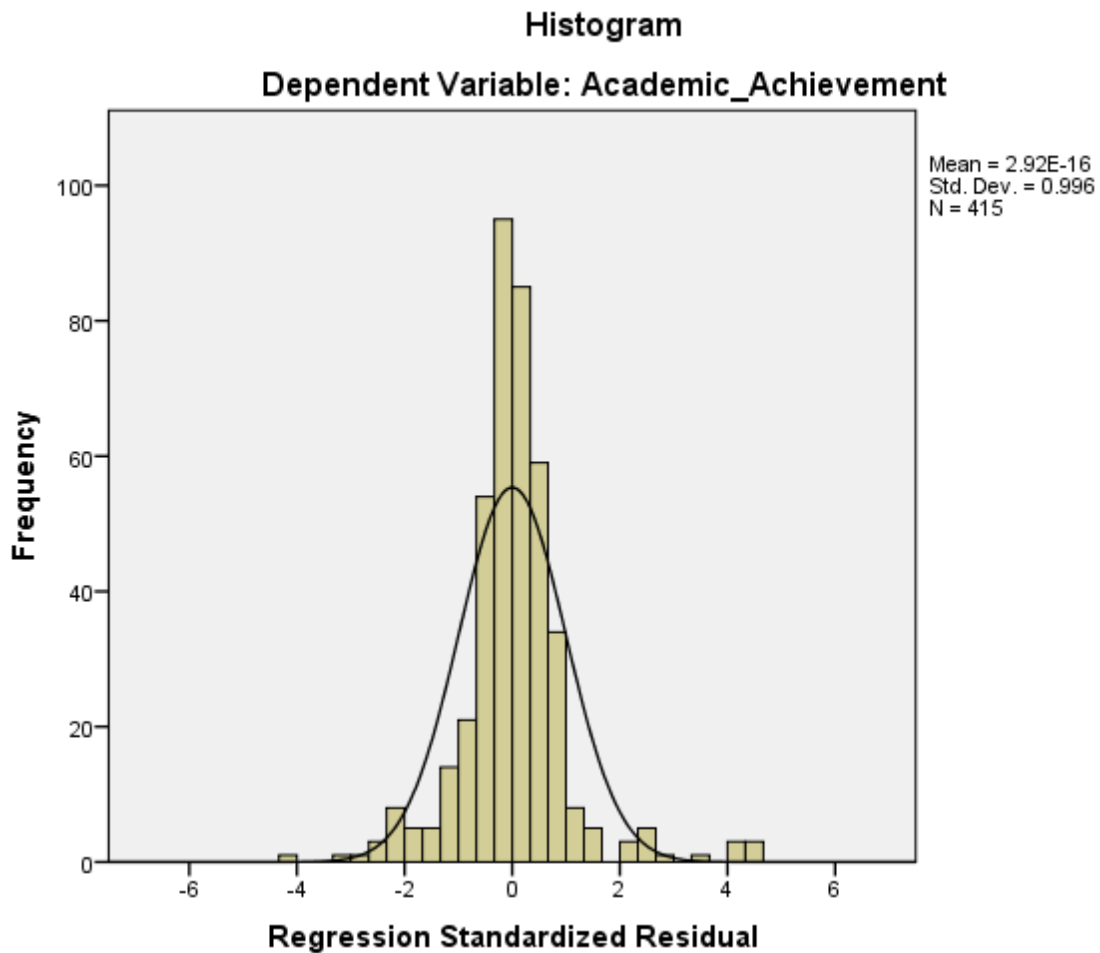
Note. N=415, AA= academic adaptability, APC=academic psychological capital, AE=academic engagement, AA=academic achievement

According to Huck (2012), Scores are regarded as normally distributed when they fall under the range of 1 for both the skewness and the kurtosis. As presented in Table 4.14, the skewness and kurtosis coefficients for academic adaptability were -.321 and .298 respectively. The skewness coefficient for academic psychological capital was -.235 while the kurtosis coefficient was .141. With regard to academic engagement, the skewness coefficient was -.501 while the kurtosis coefficient was .499. Finally, the skewness and kurtosis coefficients for academic achievement were -.281 and .332 respectively. According to the results in Table 4.14, all the scores for both the skewness and kurtosis were below the

range of 1 hence providing evidence that the scores are normally distributed. A histogram was also used to test the assumption of the normality.

Figure 4.1

Histogram for Academic Achievement Scores



As seen from figure 4.1, the graph was approximately bell-shaped. This finding indicated that the scores for the academic achievement (criterion variable) were normally distributed.

In order to test for the multi-collinearity and singularity assumption, tolerance and Variance Inflation Factor was used. The statistics are summarized in Table 4.15.

Table 4.15*Regression Coefficients for the Prediction of Academic Achievement*

Model	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>T</i>	<i>Sig.</i>	<i>Collinearity Statistics</i>	
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			<i>Tolerance</i>	<i>VIF</i>
1(Constant)	15.22	2.00		7.70	.000		
AA	.333	.10	.17	3.21	.001	.68	2.15
APC	.68	.11	.42	5.97	.000	.68	2.15
AE	.17	.08	.13	2.09	.037	.68	2.15

a Dependent Variable: Standardized scores of academic achievement

Note. $N=415$, AA=academic adaptability, APC= academic psychological capital, AE= academic engagement

As shown in Table 4.15, the VIF for academic adaptability, academic psychological capital and academic engagement were less than 10 while the tolerance scores were above 0.20. Tabachnick and Fidell (2019) argued that when the VIF is less than 10 and the tolerance scores are above 0.20, the indication is that the study variables are not highly correlated. Therefore, the data met the assumption of multi collinearity and singularity.

The third assumption tested was whether the sample scores were independent from each other. The findings are presented in Table 4.16.

Table 4.16*Model Summary for Test of Independence*

Model	R	R Square	Adjusted R Square	Std. Error Estimate	Durbin-Watson
1	.66 ^a	.40	.43	7.50	1.56

Note: N=415

a Predictors: (Constant), Academic Engagement, Academic Adaptability, Academic Psychological Capital

b Dependent Variable: Academic Achievement

The findings in Table 4.16 shows a Durbin-Watson statistics value of 1.56. According to Tabachnick and Fidell (2019) the acceptable range of Durbin-Watson value is 0-4. Therefore, the results gave sufficient evidence that there was no correlation among the observed values of academic adaptability, academic psychological capital, academic engagement and academic achievement. The researcher tested whether there was a linear relationship between academic adaptability and academic achievement using deviation from linearity test in ANOVA. The findings are presented in Table 4.17

Table 4.17*Linearity Diagnostics for Academic Adaptability and Academic Achievement*

		Sum of Squares	Df	Mean Square	F	Sig.
	(Combined)	36562.717	26	459.451	3.895	.000
	Between Linearly	12977.819	1	14575.963	123.570	.000
AAC-TOTAL	Groups Deviation from Linearity	23584.898	25	198.035	1.679	.071
AA -TOTAL	Within Groups	4837.283	388	117.957		
	Total	41400.000	414			

Note. N=415, AAC= academic achievement, AA= academic adaptability

As observed from Table 4.17 the p value for the deviation from linearity was .071 which was greater than 0.05. The results therefore, indicated that there was a linear relationship between academic adaptability and academic achievement. The researcher went further and tested for the linear relationship between academic psychological capital and academic achievement. The findings were presented in Table 4.18.

Table 4.18

Linearity Diagnostics for Academic Psychological Capital and Academic Achievement

		Sum of Squares	Df	Mean Square	F	Sig.
	(Combined)	36163.462	32	459.451	3.234	.000
	Between Linearity	17356.493	1	14575.963	119.356	.000
AAC-TOTAL	Groups Deviation from Linearity	18806.969	31	189.809	1.896	.081
APC -TOTAL	Within Groups	33263.780	382	1247.437		
Total		41400.000	414			

Note. N=415, AAC= academic achievement, APC= academic psychological capital

As seen from Table 4.18 the p value for the deviation from linearity was .081 which is greater than 0.05. This revealed that there was a linear relationship between academic psychological capital and academic achievement. Finally, the linear relationship between academic engagement and academic achievement was tested and the results presented in Table 4.19.

Table 4.19*Linearity Diagnostics for Academic Engagement and Academic Achievement*

			Sum of Squares	Df	Mean Square	F	Sig.
(Combined)			38015.214	38	402.441	3.136	.000
AAC-TOTAL	Between	Linearity	13249.873	1	15225.542	131.280	.000
	Groups	Deviation from	24765.340	37	122.673	1.723	.059
Linearity							
AE-TOTAL	Within	Groups	3384.786	376	121.102		
Total			41400.000	414			

Note. N=415, AAC=academic achievement, AE=academic engagement

The findings in Table 4.19 shows that, the deviation from linearity was .059 which was greater than the p value (0.05). The results therefore, indicated that there was a linear relationship between academic engagement and academic achievement. Having met all the assumptions, the first hypothesis was tested. The data was subjected to a bivariate correlation analysis using the Pearson's product moment correlation co-efficient. The results are presented in Table 4.20.

Table 4.20*Correlation between Academic Adaptability and Academic Achievement*

Correlations		Academic Achievement
	Pearson Correlation	1
Academic Adaptability	N	415
	Pearson Correlation	.56**
	Sig. (2-tailed)	.00
	N	415

Note. N=415

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

As observed in Table 4.20 above, there was a significant and a positive relationship between academic adaptability scores and academic achievement scores. The obtained Pearson r value was $r(415) = .56, p < .05$, indicating that the two variables were moderately correlated. As a result, the null hypothesis was therefore rejected, meaning that there is a positive and a significant relationship between the students' academic adaptability and academic achievement. These findings prompted further analysis to determine whether there existed a correlation between the three sub-scales of academic adaptability and academic achievement and which sub-scale had a higher correlation with academic achievement. As a result, the cognitive, behavioral and affective sub-scale scores and academic achievement scores were subjected to a bivariate correlation analysis using the Pearson's product moment correlation coefficient. The following findings were obtained and presented in Table 4.21.

Table 4.21

Correlation between Academic Adaptability Sub- Scales and Academic Achievement

		Academic achievement
Cognitive Adaptability	Pearson Correlation	.51**
	Sig. (2-tailed)	.00
Affective adaptability	Pearson Correlation	.41**
	Sig. (2-tailed)	.00
Behavioral Adaptability	Pearson Correlation	.66**
	Sig. (2-tailed)	.00

Note. $N = 415$.

As shown in Table 4.21, there is a significant and a positive relationship between all the sub-scales of academic adaptability and academic achievement. The correlation between cognitive adaptability, affective adaptability and academic achievement were found to be moderate while the correlation between behavioral adaptability and academic achievement

was found to be strong. The highest correlation was found between the sub-scale of behavioral adaptability and academic achievement $r(415) = 0.66, p < 0.05$. The correlation between cognitive adaptability and academic achievement was the second with a correlation of $r(415) = 0.51, p < 0.05$ while the least correlation was found between affective adaptability and academic achievement $r(415) = 0.41, p < 0.05$. These findings may imply that participants who were behaviorally adapted were better performers in their academic achievement followed by those participants who were cognitively adapted. On the other hand, the findings also may imply that, those participants who were affectively adapted performed lowly compared to their counter parts. The researcher went further to establish the coefficient of determination of academic adaptability that explained the total variance in students' academic achievement. The data was subjected to a multiple regression and the findings were presented in Table 4.22.

Table 4.22

Adjusted R² of Academic Adaptability Sub-Scales on Academic Achievement

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.67a	.44	.44	7.49

Note. Note=415

a Predictors: (Constant), Affective Adaptability, Behavioral Adaptability, Cognitive Adaptability

As shown in Table 4.22, R square value ($R^2=0.44$) was moderate and it thus implied that 44% of the variation which occurred on the dependent variable, was caused by the sub-scales of academic adaptability. This finding meant that, 44% of the variations that occurred on the students' academic achievement was caused by the three domains of academic adaptability. Following this finding, further analysis was done to compare academic achievement means across the three domains/sub-scales of academic adaptability. One way ANOVA was

performed to compare the academic achievement means across the sub-scales of academic adaptability. The findings were presented in Table 4.23.

Table 4.23

ANOVA for Regression Analysis of Academic Adaptability Sub-Scales Across Academic Achievement Means.

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	18351.92	3	6117.30	109.09	.00b
Residual	23048.09	411	56.08		
Total	41400.00	414			

Note. N=415

a Dependent Variable: Standardized scores of academic achievement

b Predictors:(Constant), Affective adaptability, Behavioral Adaptability, Cognitive Adaptability

From the above Table 4.23, there was a statistically significant mean difference between the sub-scales of academic adaptability as determined by the one way ANOVA ($F(3, 411) = (109.09), P=.00$). These findings meant that there was a significant difference in the means between those that were found to have affective, cognitive and behavioral academic adaptability. The implication of this finding could be that, participants who were found to have scored highly on the behavioral adaptability sub-scale could be better performers than their counter parts. The researcher went further to establish which of the three sub-scales of academic adaptability was a best predictor of academic achievement. The Beta Coefficients of the sub-scales of academic adaptability from the multiple regression analysis were presented in Table 4.24.

Table 4.24*Beta Coefficients for the Sub-Scales of Academic Adaptability*

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>
(Constant)	16.01	1.97	-	8.13	.00
Cognitive A	.19	.31	.05	.063	.53
Behavioral A	3.48	.30	.74	11.52	.00
Affective A	-.65	.25	-.17	2.63	.01

Note. N=415

a. Dependent Variable: Standardized scores of academic achievement.

b. Predictors: (Constant), Affective adaptability, Behavioral Adaptability, Cognitive Adaptability

As per the data given in Table 4.24, the prediction equation was developed as follows;

$\hat{y} = 16.01 + 0.74 BA + 0.05CA - 0.17AA$. From the above table, it is evident that behavioral adaptability had the highest predictive index ($\beta = 0.74$) followed by cognitive adaptability ($\beta = 0.05$) while the least predictive index was realized in affective adaptability ($\beta = -0.17$).

Behavioral adaptability and cognitive adaptability had a positive predictive index of ($\beta = 0.74$) and ($\beta = 0.05$) respectively, giving an indication that whenever there is an increase in behavioral or cognitive adaptability scores, it resulted into an increase in the academic achievement score.

On the other hand, the sub-scale of affective adaptability had a negative predictive index, implying that when there is an increase in affective adaptability score it leads to a decrease in

academic achievement score and vice versa. The fact that behavioral adaptability sub-scale had the highest predictive index of ($\beta=0.74$), the implication was that it was the best predictor of academic achievement followed by cognitive adaptability sub-scale ($\beta=0.05$) while the sub-scale of affective adaptability ($\beta=- 0.17$) was the least predictor. These findings were in line with the findings in Table 4.15, where behavioral adaptability was found to have the highest correlation ($r=0.66, p< 0.05$) followed by cognitive adaptability ($r= 0.51, p<0.05$) while the least correlation was found in affective adaptability ($r= 0.41, p<0.05$).

c. Discussion of the Findings

The study sought to establish whether academic adaptability predicted academic achievement. The study's findings revealed that the students' academic adaptability was positively and significantly related to their academic achievement ($r(415) = .00, p<.05$). The study's findings also went further and revealed that, behavioral adaptability sub-scale was found to have the highest correlation with academic achievement ($r(415) = .66, p<.05$). Cognitive adaptability sub-scale was the second, and was found to have a positive and significant correlation with academic achievement ($r(415)=.51, p<.05$) and the least correlation was found between the sub-scale of affective adaptability and academic achievement ($r(415)=.41, p<.05$). Both cognitive and affective adaptability had a positive and moderate relationship with academic achievement while behavioral adaptability was found to have a positive and strong relationship with academic adaptability. The implication of this finding is that learners who scored highly on the behavioral sub-scale were better performers compared to their counterparts.

The findings obtained in this study were in line with the earlier findings by Burns et al. (2019) and Holliman et al. (2018) that, there is a significant and a positive relationship between the students' academic adaptability and academic achievement. The two studies used cross-sectional research design while the current study used explanatory sequential research

design. The samples used in Burns et al. (2019) and Holliman et al. (2018) were different from the samples used in this study. The previous studies used students who were at the university level while the current study used high school students. This therefore meant that irrespective of the level of schooling, academic adaptability was found to be significantly and positively related to academic achievement. On the other hand, the findings indicated that irrespective of the cross-cultural differences and different schooling levels, academic adaptability was significantly and positively related to academic achievement. These results implied that, students who were found to have high levels of academic adaptability were likely to perform better than those who were found to have low or moderate levels of academic adaptability.

The findings of the current study were also in line with a previous study done by Li et al. (2020), who found out that there was a positive and a significant relationship between the students' career adaptability and academic achievement. The study was done on students from a Chinese high school and the Survey method was used. Although the study was done on high school students, China is a developed country compared to Kenya. Despite this disparity, the findings were similar to the findings of the current study and the results showed that career adaptability influences academic performance among these high school learners. The study went further and explained that those students who showed high levels of career adaptability performed better in their academics than those who were found to have low levels of career adaptability.

The findings of the current study also concurred with those of an earlier study by Holliman et al. (2019) which revealed that there existed a relationship between the university students' adaptability and their mid-course academic achievement. The sample used in the previous study differed from the sample used in the current study in their level of schooling and also in

their location of study. However, the findings of the two studies indicated that there was a relationship between the student's adaptability and their academic achievement. These findings implied that despite the schooling level and the study location, academic adaptability was found to be significantly related to academic achievement.

The current study's findings also agreed with those of another study done by Cai et al., (2020) which indicated that there was a relationship between children's adaptability and academic achievement. In these two studies the samples differed in terms of their age and also the methods of data collection differed. Therefore, these findings may imply that irrespective of the age of the participants, and the methods used in the data collection academic adaptability predicts academic achievement. Birzina et al. (2019) identified that learners' adaptability is significantly related to their performance in exams. The sample size in the study was comprised of university students and in an urban setting while the current study drew the sample size from the high school students and in a rural setting. However, the two studies gave similar findings.

A research done by Al Akashee et al. (2020) on whether academic adaptability and academic performance were correlates, was supported by the findings of the current study that the two variables were positively and significantly related. The study used a sample drawn from the university students and in an urban setting while the current study drew its sample from the high school students and in a rural setting. The study also reported that participants who scored highly on the academic adaptability scale were better performers. Despite the two samples in the two studies being different in terms of the location of the study, they both provided similar findings.

The findings of a previous study by Ochieng et al. (2019) agreed with the findings of the current study that students' academic adaptability was significantly and positively correlated

to their academic achievement. The study by Ochieng et al. (2019), used a correlational research design and the theory of planned behavior while the current study used explanatory sequential mixed method research design and Individual Adaptability theory. However, despite the two studies using different study research designs and different theories, the findings were similar.

In general, it can be concluded that irrespective of the different study samples, different study methodologies, different theories and different cultural contexts, it was found that the students' academic adaptability was significantly and positively correlated to their academic achievement.

Individual adaptability theory offers an explanation of the findings in this study on academic adaptability as a predictor of academic achievement. This theory explains that an individual can make appropriate responses to changed or changing situations in order to meet different circumstances Ployhart & Bliese (2006). According to this theory, adaptability is a key determinant of whether an individual successfully responds to changes in their environment or not (Holliman et al.2018). This theory can further be used to explain how learners can adjust to their learning environment and develop different ways of thinking in order to overcome learning difficulties. The theory can also be used to explain the interrelationships between academic adaptability and academic achievement.

4.4.2 Relationship between Academic Psychological Capital and Academic Achievement

In this study, the second aim was to establish the relationship between academic psychological capital and academic achievement. Descriptive statistics were used to summarize the students' academic psychological capital and finally the inferential statistics were used to determine the relationship between academic psychological capital and academic achievement.

a. Descriptive Analysis of Academic Psychological Capital

The participants' academic psychological capital was analyzed based on the academic psychological capital score. The analysis aim was to get the score's mean, range and standard deviation. The findings were presented in Table 4.25

Table 4.25

Description of Academic Psychological Capital Scores

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>SK</i>	<i>Kur</i>
APC	415	33.00	12.00	45.00	30.5	6.2	-.37	-.24
Valid N	415							

Note. $N=415$, APC=academic psychological capital, MIN=minimum, MAX=maximum,

SD=Standard deviation, SK=Skewness, Kur=Kurtosis

As shown in Table 4.25, the range for the academic psychological capital was 33 while the minimum and maximum scores were 12 and 45 respectively. The mean of the academic psychological capital scores was 30.5($SD=6.2$) and the coefficient of skewness was -.37 implying that the participants rated themselves highly on the academic psychological capital scale. The kurtosis was -.24 implying that the distribution was platykurtic indicating that the scores were spread out from the mean. Further analysis was done to determine the descriptive statistics of academic psychological capital by gender in order to compare the mean of the boys and the girls in this study and the results were presented in Table 4.26.

Table 4.26*Descriptive Statistics of Academic Psychological Capital by Gender*

Gender	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Range</i>	<i>Mean</i>	<i>SD</i>	<i>Kur</i>	<i>Sk</i>
Boys	212	12.00	45.00	33.00	30.00	6.04	.31	-.27
Girls	203	12.00	45.00	33.00	31.00	6.30	.80	-.48
Total	415	12.00	45.00	33.00	30.5	6.18	.505	-.365

Note. *N*=415, *MIN*=Minimum, *MAX*=Maximum, *SD*=Standard deviation, *Kur*=Kurtosis, *SK*=Skewness

From Table 4.26, the range for both the boys and the girls' participants was 33 with the minimum and the maximum scores being 12 and 45 respectively. On the other hand, the boys' mean was 30 (*SD*=6.04) while the girls' mean was 31 (*SD*=6.30) and so the girls were found to have the highest mean. As observed also, the boys' kurtosis was .31 which gave the implication that the distribution was leptokurtic meaning that more scores were concentrated around the mean. The boys' negative skewness of -.27 meant that majority of the boys rated themselves highly on the academic psychological capital scale. The girls Kurtosis was .80 meaning that the distribution was leptokurtic with more scores concentrating around the mean. The girls' skewness was -4.8 which meant that more girls just like the boys, rated themselves highly on the academic psychological capital scale. The levels of the academic psychological capital were analyzed and the participants were classified as low, moderate or high. The findings were presented in Table 4.27.

Table 4.27*Levels of Academic Psychological Capital*

	Frequency	Percent
Low	332	80.0
Moderate	83	20.0
Total	415	100.0

Note. N=415

As shown in Table 4.27, all the participants rated themselves into only two levels. Majority, of the participants rated themselves within the low level of academic psychological capital (80%). It is also observed that, less than half of the total participants were categorized as having moderate level of academic psychological capital (20%). None of the participants were found to have high levels of academic psychological capital. This finding could be used to explain the problem of low academic achievement among the sub-county secondary school students' in Kitui County. Further descriptive statistics of the sub-scales of the academic psychological capital which includes; self-efficacy, resilience, hope and optimism were done so as to determine the participants' statistical measures on each of the four sub-scales. The results were presented in Table 4.28.

Table 4.28*Descriptive Statistics of the Sub-Scales of Academic Psychological Capital*

		<i>Range</i>						
	<i>N</i>		<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>SK</i>	<i>Kur</i>
Self- efficacy	415	12.00	3.00	15.00	10.06	2.65	-.21	-.50
Resilience	415	12.00	3.00	15.00	11.63	2.08	-.73	.74
Hope	415	12.00	3.00	15.00	11.70	2.11	.71	.69
Optimism	415	12.00	3.00	15.00	11.91	2.29	-1.1	1.62

Note. *N* =415. Min=minimum; Max= Maximum, SD=Standard deviation, SK=Skewness, Kur =Kurtosis

The data in Table 4.28 reveals that the range, the minimum and the maximum scores were the same for the four sub-scales. The highest mean score of 11.91 was observed on the Optimism sub-scale with a standard deviation of 2.29 while the lowest mean score of 10.06 was observed on the self-efficacy sub-scale with a standard deviation of 2.65. The coefficient of skewness was negative for all the sub-scales with the highest negative value of (-.73) being observed on the resilience sub-scale. The findings on the coefficient of skewness implied that the participants rated themselves highly on the Optimism sub-scale than the other three sub-scales. Further analysis was done by cross tabulating the levels of academic psychological capital and levels of academic achievement in order to compare the levels. The findings were presented in Table 4.29.

Table 4.29*Levels of Academic Psychological Capital Across Levels of Academic Achievement Means*

		Levels of Academic Achievement			
		Low	Moderate	High	Total
Psychological capital levels	Low	22(5.3)	233(56.1)	6(1.5)	261(62.9)
	Moderate	7(1.7)	137(33)	10(2.4)	154(37.1)
Total		29(7)	370(89.1)	16(3.9)	415(100)

Note. N=415, ()=percent

As shown from Table 4.29, 5.3% of the total participants were found to have low levels of academic achievement and academic psychological capital. Those that were found to have moderate levels of academic achievement 56.1% were found to have low levels of academic psychological capital. In addition, 1.5% of the participants who were found to have high levels of academic achievement were found to have low levels of academic psychological capital. On the other hand, 33% of the participants who were found to have moderate levels of academic psychological capital were also found to have moderate levels of academic achievement. Lastly, 2.4% of the participants who were found to have high levels of academic achievement were also found to have moderate level of academic achievement. Further analysis was done through cross tabulation of the levels of academic psychological capital and academic achievement scores in order to determine which level of academic psychological capital had the highest mean. The findings were presented in Table 4.30.

Table 4.30*Levels of Academic Psychological Capital Across Academic Achievement Means.*

Levels of Academic Psychological Capital		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Low	academic achievement	332	24.65	75.61	47.39	7.98
	academic achievement	83	26.11	78.52	60.45	10.44
Moderate						

Note. *N*=415, MIN=minimum, MAX=maximum, SD=standard deviation

From the statistics given in Table 4.30, the maximum and the minimum score for those participants who were found to have moderate level of academic psychological capital was 78.52 and 26.11 respectively while for those who were found to have low level of academic psychological capital was 75.61 and 24.65 respectively. On the other hand, the participants who were classified as having moderate level of academic psychological capital were found to have the highest mean 60.45(*SD*=10.44) than the participants who were found to have low level of academic psychological capital 47.39(*SD*=7.98). The implication of this finding is that, those students who had moderate level of academic psychological capital performed better in academics than their counterparts who were found to have low levels of academic psychological capital.

b) Hypothesis Testing

Following the second objective which was to examine the relationship between academic psychological capital and academic achievement, the following null hypothesis was advanced:

H₀₂: There is no significant relationship between academic psychological capital and academic achievement.

To test this hypothesis, a bivariate correlation analysis was performed using Pearson product moment correlation coefficient. The results were presented in Table 4.31.

Table 4.31

Correlation between Academic Psychological Capital and Academic Achievement

	Academic Achievement	
academic psychological capital	Pearson Correlation	1
	Sig. (2-tailed)	.65**
		.00

Note. $N=415$.

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

The findings in Table 4.31 shows that there is a significant and a positive relationship between the students' academic psychological capital and academic achievement ($r(415) = 0.65, p < 0.05$). It is also observed that the relationship between academic psychological capital and academic achievement was strong. As a result, the null hypothesis was therefore rejected meaning that the academic psychological capital was significantly correlated to academic achievement.

Further analysis was done to determine the correlation between the sub-scales of academic psychological capital and academic achievement. The findings were presented in the Table 4.32.

Table 4.32

Correlations between the Sub-Scales of Academic Psychological Capital and Academic Achievement

		Academic Achievement
Self-efficacy	Pearson Correlation	.57**
	Sig. (2-tailed)	.00
Hope	Pearson Correlation	.61**
	Sig. (2-tailed)	.00
Resilience	Pearson Correlation	.68**
	Sig. (2-tailed)	.00
Optimism	Pearson Correlation	.62
	Sig. (2-tailed)	

Note. N=415

Correlation is significance at 0.05 level

It is observed from Table 4.32 that, all the sub-scales of academic psychological capital had a significant and a positive correlation with academic achievement. Among the four sub-scales, resilience, optimism and hope were found to have a strong relationship with academic achievement while self-efficacy was found to have a moderate relationship with academic achievement. The highest correlation was found between the sub-scale of resilience and academic achievement ($r(415) = .68, p < .05$). This was followed by the correlation between optimism and academic achievement ($r(415) = .62, p < .05$). The correlation between the sub-scale of hope and academic achievement was ($r(415) = .61, p < .05$) while the least correlation was found between the sub-scale of self-efficacy and academic achievement ($r(415) = .57, p < .05$). These findings indicated that the participants who scored highly on the sub-scale of

resilience performed better compared to those on the other three sub-scales. Further analysis was done to establish the proportion of variation that the sub-scales of academic psychological capital have, that explains the total variance in students' academic achievement. The data was subjected to a multiple regression and the findings were presented in Table 4.33.

Table 4.33

Model Summary of the Sub-Scales of Academic Psychological Capital

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the estimate</i>
1	.68a	.47	.47	7.3

Note. =415

a Predictors: (Constant), Optimism, Self-efficacy, Resilience, Hope

Table 4.33 indicates that the R square value ($R^2=0.47$) explains the variance of the dependent variable from the four sub-scales of academic psychological capital. In this case, it is observed that 47% of the students' academic achievement is explained by the sub-scales of the academic psychological capital. The R value measures the strength of the relationship between the model and the criterion variable which is the students' academic achievement in this study. As a result, the R value (0.68) shows that the relationship between the model and the criterion variable is very strong. The implications of this finding may be that, the students' academic achievement in the sub-county secondary schools in Kitui County was predictable from the four sub-scales of academic psychological capital.

Further analysis was done in order to determine whether there was a significant mean difference between those participants who were found to have self-efficacy, resilience, hope and optimism. The findings were presented in Table 4.34.

Table 4.34*ANOVA for the Regression Model of the Sub-Scales of Academic Psychological Capital*

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	19550.27	4	4887.57	91.71	.00b
Residual	21849.73	410	53.29		
Total	41400.00ss	414			

*Note. N=414**a Dependent Variable: Standardized scores of academic achievement**b Predictors: (Constant), Optimism, Self-efficacy, Resilience, Hope*

As shown in Table 4.34, there was a statistically significant mean difference between the four sub-scales of academic psychological capital as determined by the one way ANOVA ($F(1, 410) = (91.71), P = .00$). These findings meant that there was a significant difference in the means between those participants who were found to have self-efficacy, resilience, hope and optimism. The implication of this finding could be that learners who scored highly on the resilience and optimism sub-scales could be better performers than their counter parts who scored highly on the sub-scales of hope and self-efficacy. This finding could be true because resilience has to do with the ability to overcome academic setbacks, stress and study pressure associated with the school factors Mwangi (2015). The researcher went further to determine which of the four sub-scales of academic psychological capital is a better predictor of academic achievement. The findings are summarized in the following Table 4.35.

Table 4.35*Beta Coefficients for the Domains of Academic Psychological Capital*

<i>Model</i>	<i>Unstandardized</i>		<i>Standardized</i>		
	<i>Coefficients</i>		<i>Coefficients</i>		
1	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>
(Constant)	10.27	2.38	-	4.31	.000
Self-efficacy	-.19	.31	-.055	-.61	.542
Resilience	2.52	.44	.525	5.79	.000
Hope	.43	.44	.090	.97	.333
Optimism	.62	.31	.142	2.01	.045

Note. N=415

a Dependent Variable: Standardized scores of academic achievement

From Table 4.35, the prediction equation that was developed using the coefficients was as follows;

$$\hat{y} = 10.27 + 0.525R + 0.142OP + 0.090H - 0.055SE$$

As shown from Table 4.35, resilience ($\beta = 0.525$), optimism ($\beta = .142$), and hope ($\beta = .090$) were found to have a positive predictive index while self-efficacy was found to have a negative predictive index of ($\beta = -.055$). This finding implied that an increase in the resilience, optimism and hope scores may lead to an increase in academic achievement score. On the other hand, the negative predictive index may imply that an increase in the self-efficacy score may lead to a decrease in academic achievement score and vice versa. The best predictor of academic achievement from the sub-scales of academic psychological capital was resilience ($\beta = .525$), followed by optimism ($\beta = .142$). The third in line was hope ($\beta = 0.09$) while the

least prediction was found in the sub-scale of self-efficacy ($\beta = -.055$). These findings agreed with the findings in Table 4.32 where the highest correlation between the sub-scales of academic psychological capital and academic achievement was found in resilience ($r=0.68$, $p<0.05$). The second highest correlation was found in optimism ($r=0.62$, $p< 0.05$) and the third was found in the hope sub-scale ($r=0.61$, $p<0.05$) while the least was found in self-efficacy ($r= 0.57$, $p<0.05$).

c. Discussion of the Results

The second objective was to examine the relationship between academic psychological capital and academic achievement. The study's findings established that there was a positive and significant relationship between the students psychological capital and academic achievement ($r(415)=0.65$, $p<0.05$). More specifically, the findings of this study revealed that the highest correlation was found between the sub-scale of resilience and academic achievement ($r(415)=.68$, $p<.05$), followed by the correlation between the sub-scale of optimism and academic achievement ($r=0.62$, $p< 0.05$). The correlation between the sub-scale of hope and academic achievement was ($r(415)=.61$, $p<.05$) while the least correlation was found between the sub-scale of self-efficacy and academic achievement ($r(415)=.57$, $p<0.05$). The implications of these findings may be that students who scored highly on the sub-scale of resilience and optimism were better performers than those who scored highly on the sub-scale of hope and self-efficacy.

The current study findings are in line with the findings of a study done by Adil et al. (2020) on how psychological capital correlates with academic achievement among university students. These findings indicated that, there was a significant association between academic psychological capital and academic achievement. The study also revealed that, learners who scored highly on psychological capital scale performed better. On the other hand, students who were found to have low scores on the academic psychological capital scale were low

achievers. The sample used in the previous study was drawn among the university students while the sample for the current study was drawn from high school. These findings could be used to explain that despite the level of schooling and the study location, academic psychological capital was a positive and a significant correlate of academic achievement. A study done by Du and Chen (2021) reported that academic psychological capital and academic achievement were correlates and so the current findings supported the findings of the previous study.

The current study's findings also supported the findings of another study done by Ferreira et al. (2019) which revealed that the students' psychological capital and academic performance were significantly related. The study used psychological theory in human capital development that focusses on how an individual is changing while the current study used Broaden-and-Build Theory which explains on individual's positive psychological state of development. Despite the two studies using different theories to form the theoretical framework of the two studies, the two variables were found to be significantly related. Another study by Carmona-Halty et al. (2021), reported similar findings with the current study that the student's psychological capital was positively and significantly related to their academic achievement. Although the study used a sample of 86 participants which may have been very small, the findings agreed with the findings of the current study.

The findings also supported those of another earlier study done by Fati et al. (2019) which revealed that psychological capital mediated the relations between academic achievement and student engagement. The results revealed that, there was a significant and a positive relationship, between the students' academic psychological capital and the students' academic achievement. From the four sub-scales of the psychological capital, resilience had the highest correlation with the students' academic achievement. The fact that resilience was

highly correlated with the students' academic achievement in the previous study and also in the current study, this meant that students who were able to overcome academic set backs, academic stress and academic pressures were likely to be high achievers.

In Ghana, similar findings by Abukari (2018) reported that students' academic resilience had a significant and positive relationship with the students' performance. This finding was supported by the current study which reported the highest correlation between resilience which is a sub-scale of academic psychological capital and the academic achievement. Although the earlier study was done among the university students' and in Ghana, the current study was done among secondary school students and in Kenya and the results were similar. This could mean that the correlation between psychological capital and academic achievement was not affected by the level of schooling, study locations or even the cross-cultural differences.

The findings of the current study also concurred with the findings of a previous study by Onivehu et al. (2020) in Nigeria, which reported a positive and a significant relationship between psychological capital and academic performance of social work students among university students. On the other hand, the current study's sample was drawn among high school students. Now, although the two studies differed in terms of the study samples, level of schooling and also in their culture, the results indicated that there was a significant positive relationship between psychological capital and academic performance of students irrespective of their educational background and also their cultural differences.

In Kenya, similar findings were reported by Baluku et al. (2021), whose study examined the relationship between psychological capital and School- To-Work Transition among Ugandan and Kenyan University students. It was established that there was a positive relationship, between the psychological capital and STWT. It was also found out that for the students to

transit smoothly, they required psychological capital. Therefore, from the above findings the problem of below average performance among the sub-county secondary school students in Kitui County could be associated with their levels of academic psychological capital.

The theory of Broaden-and-Build by Fredrickson (2004) can be used to explain the findings of this study. The theory talks about a set of personal resources that a person can use to help improve their performance and their success. Siu et al. (2014) reported that Broaden-and-build theory can be used to explain how academic psychological capital enhances students' success in education. According to this theory, a student whose psychological capital is rated high has many ways of ensuring that they achieve their set educational goals.

4.4.3 Relationship between Academic Engagement and Academic Achievement

In this study, the third objective was to establish the relationship between academic engagement and academic achievement. Descriptive statistics were used to summarize the students' academic engagement and finally the inferential statistics were used to determine the relationship between engagement and academic achievement.

a. Descriptive Statistics of Academic Engagement

The participants' academic engagement was analyzed, based on the academic engagement scores. The aim of the analysis was to get the range, mean, and the standard deviation of the scores. The findings were presented in Table 4.36.

Table 4.36

Description of Academic Engagement Scores

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>SK</i>	<i>Kur</i>
AES	415	41.00	14.00	55.00	37.16	7.68	-.29	.02

Note. *N*=415, *SD*=standard deviation, *SK*= skewness, *AES*=academic engagement scores

As shown in Table 4.36, it is observed that the maximum and the minimum scores were 55 and 14 respectively. The range of the distribution was 41 while the mean was 37.16 and a standard deviation of 7.68. The distribution of the academic engagement scores was found to be negatively skewed (skewness= -.29). This finding meant that most of the participants rated themselves highly on the Academic Engagement Scale. The kurtosis was found to be .02 which implied that the distribution was leptokurtic meaning that more scores were concentrated around the mean. Further analysis on the academic engagement scores was done in order to classify the participants as low, moderate or high according to the academic engagement scale. The data were presented in Table 4.37.

Table 4.37

Levels of Academic Engagement

	Frequency	percent
	Cumulative	
Valid Low	305	73.5
Moderate	110	26.5
Total	415	100.0

Note. N=415

As shown in Table 4.37, all the participants were rated as having moderate and low levels of academic engagement and none of them were rated as having high level of academic engagement. Majority of the participants, 73.5% were found to have low level of academic engagement while only 26.5% were found to have a moderate level of academic engagement. Given that academic engagement has three sub-scales; mental, behavioral and emotional, it was then necessary to perform a descriptive analysis to find out the mean, standard deviation, skewness, kurtosis, range, minimum and maximum scores of the three sub-scales. The findings were presented in Table 4.38.

Table 4.38*Descriptive Statistics of the Sub-Scales of Academic Engagement*

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>SK</i>	<i>Kur</i>
Mental engagement	415	11.00	4.00	15.00	10.08	1.97	.16	.37
Emotional engagement	415	20.00	5.00	25.00	19.83	3.48	-.69	.82
Behavioral engagement	415	21.00	9.00	30.00	22.34	4.01	-.35	.01

Note. *N* =415. *Min* =Minimum; *Max* =Maximum, *SD*=Standard deviation; *SK* =Skewness; *Kur* =Kurtosis.

As shown in Table 4.38, the range for the mental sub-scale was 11.00 with the minimum and the maximum scores being 4.00 and 15.00 respectively. For the emotional sub-scale, the range was 20.00 with the minimum and the maximum scores as 5 and 25.00 respectively. On the behavioral sub-scale, the range was 21 with the minimum and maximum scores being 9 and 30 respectively. Behavioral engagement was found to have the highest mean of 22.34 (*SD*=4.01) followed by mental engagement which was found to have a mean of 10.08(*SD*=1.97) while emotional engagement was found to have the least mean of 3.48 (*SD*=-.69). The coefficient of skewness for the mental engagement was .16 implying that the participants rated themselves low on the mental engagement scale. The coefficient of skewness for both the emotional and the behavioral engagement were -.69 and -.35 respectively, indicating that participants rated themselves highly on these two sub-scales. The kurtosis for the three subscales were .37, .82 and .01 respectively, implying a leptokurtic distribution where the scores were concentrated around the mean. Further analysis was done to determine the descriptive statistics of academic engagement by gender and the results are presented in Table 4.39 below.

Table 4.39*Descriptive Statistics of Academic Engagement by Gender*

<i>Gender</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Range</i>	<i>Mean</i>	<i>SD</i>	<i>Kur</i>	<i>Sk</i>
Male	212	18.00	55.00	37.00	36.50	7.49	-.18	-.27
Female	203	14.00	55.00	41.00	37.85	7.84	.24	-.33
Total	415	14.00	55.00	41.00	37.16	7.69	.016	-.29

Note. *N*=415, *Min*=minimum, *Max*=maximum, *SD*=standard deviation, *Kur*=kurtosis, *SK*=skewness

From the above Table 4.39, the range for the boys was 37 with the minimum and the maximum score as 18 and 55 respectively. The range for the girls was 41 with the minimum and the maximum score as 14 and 55 respectively. The girls were found to have the highest mean 37.85 (*SD*=7.84) while the boys were found to have the least mean 36.50 (*SD*=7.49). The boys' kurtosis was -.18 implying that the distribution was platykurtic, meaning that more scores were widely spread out from the mean. The skewness was -.27, which implied that majority of the boys rated themselves highly on the academic engagement scale. On the other hand, the kurtosis for the girls was .24 which implied that the distribution was leptokurtic, meaning that more scores were centered around the mean. The skewness for the girls' was -.33 indicating that more girls also rated themselves highly on the academic engagement scale.

Further analysis was done through cross tabulation of levels of academic engagement and the levels of academic achievement in order to analyze the relationship between the levels. The findings were presented in Table 4.40 below.

Table 4.40*Levels of Academic Engagement Across Levels of Academic Achievement*

Academic Achievement		Low	Moderate	High	Total
Academic	Low	41(9.9)	25(6)	0(0)	66(16)
Engagement	Moderate	0(0)	333(80.2)	16 (3.9)	349(84)
Total		41(9.9)	358 (86.3)	16 (3.9)	415(100)

Note. N=415, ()=percent

As shown in Table 4.40, 9.9% of the total participants who were found to have low levels of academic achievement were also found to have low levels of academic engagement. In addition, 6% of the participants who were found to have moderate levels of academic achievement were also found to have low levels of academic engagement. Lastly, 3.9% of participants who were found to have high levels of academic achievement were also found to have moderate levels of academic engagement. On the other hand, 9.9% of the total participants who were found to have low level of academic engagement were also found to have low level of academic achievement. In addition, 80.2% of the participants who were found to have moderate levels of academic engagement were also found to have moderate levels of academic achievement. Finally, 3.9 % of the participants who were found to have high levels of academic achievement were also found to have moderate levels of academic engagement. This finding, that the participants who were found to have low level of academic engagement were also found to have low level of academic achievement could be implying that such students are low achievers. On the other hand, those participants who were found to have high and moderate levels of academic achievement were found to have moderate level of academic engagement. This finding could be implying that such students are high

achievers. The researcher went further to establish which level of academic engagement had the highest mean when cross tabulated with the standardized academic achievement scores. The findings which were obtained were as given in Table 4.41.

Table 4.41

Levels of Academic Engagement Across Academic Achievement Means

Levels of Academic Engagement	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Low	academic achievement 305	29.02	78.52	46.69	7.73
Moderate	academic achievement 110	24.65	69.79	59.17	9.88

Note. *N*=415, *MIN*=minimum, *MAX*=maximum, *SD*=standard deviation

As it is shown in Table 4.41, participants who were found to have moderate levels of academic engagement were found to have the highest mean score 59.17 (*SD*=9.88) while those who were found to have low level of academic engagement were found to have the least mean 46.69 (*SD*=7.73). The results implied that, participants who were found to have moderate level of academic engagement performed better in academics than those who had low level of academic engagement. Therefore, this finding can be used to explain the problem of low academic achievement in the sub-county secondary schools in Kitui County.

b. Hypothesis Testing

According to the third objective of this study, the researcher sought to determine whether there was significant and a positive relationship between academic engagement and the students' academic achievement. As a result, the following null hypothesis was stated:

H02: There is no significant relationship between academic engagement and academic achievement.

In order to test this hypothesis, the researcher subjected the data to a bivariate correlation analysis using the Pearson product moment correlation. The findings were presented in Table 4.42.

Table 4.42

Correlation between Academic Engagement and Academic Achievement

		Academic engagement
academic achievement	Pearson Correlation	1
		.57**
	Sig. (2-tailed)	.00

Note. N=415

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

As displayed in Table 4.42, there was a significant and a positive relationship between academic engagement and academic achievement $r(415) = .57, p < 0.05$. This finding led to the rejection of the null hypothesis. It is also observed that academic engagement and academic achievement were found to have a moderate relationship. Further analysis was done to determine whether the three sub-scales of academic engagement were correlated to academic achievement score. In order to achieve this, a bivariate correlation analysis using Pearson product moment correlation was used and the findings were presented in Table 4.43.

Table 4.43*Correlation between Academic Engagement Sub- Scales and Academic Achievement*

		Academic achievement
Academic Achievement	<i>Pearson Correlation</i>	1
	<i>Sig. (2-tailed)</i>	.00
Emotional engagement	<i>Pearson Correlation</i>	.78**
	<i>Sig. (2-tailed)</i>	.00
Behavioral engagement	<i>Pearson Correlation</i>	.87**
	<i>Sig. (2-tailed)</i>	.00
Mental engagement	<i>Pearson Correlation</i>	.51**
	<i>Sig. (2-tailed)</i>	.00

*Note. N=415**** Correlation is significant at the 0.05 level (2-tailed).*

In Table 4.43, the data shows that all the three sub-scales of academic engagement are significantly and positively correlated to the total academic achievement score. The correlation between mental engagement and academic achievement was found to be moderate (.51). However, the correlation between emotional engagement and academic achievement was found to be strong (.78) while the correlation between the behavioral engagement and academic achievement was also very strong (.87). On the other hand, the highest correlation was found between behavioral engagement and academic achievement ($r(415)=0.87$, $p < 0.05$), followed by the correlation between emotional engagement and academic achievement ($r(415)=0.78$, $p < 0.05$). The least correlation was found between mental engagement and academic achievement ($r(415) = 0.51$, $p > 0.05$). The researcher did further analysis using multiple regression analysis in order to establish the proportion of variation in the students'

academic achievement which is predicted by the sub-scales of academic engagement. The findings were presented in Table 4.44.

Table 4. 44

Model Summary for the Sub-Scales of Academic Engagement

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.63a	.40	.40	7.80

Note. N=415

a Predictors: (Constant), Behavioral engagement, Emotional engagement, Mental engagement

In Table 4.44, it is shown that the R-value was relatively high (.63), implying that the correlation was very strong. The R square value ($R^2=.40$) was moderate and this implied that 40% of the variation that occurred on the criterion variable (academic achievement) was caused by the sub-scales of the academic engagement. This finding may imply that the academic achievement of the sub-county secondary school students in Kitui County was predictable from the sub-scales of academic engagement. Further analysis was done based on the multiple regression analysis in order to determine the significance of the prediction equation. The findings were as presented in Table 4.45.

Table 4.45*ANOVA Analysis for the Sub-Scales of Academic Engagement*

<i>Model</i>		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1	Regression	16376.12	3	5458.71	89.66	.00b
	Residual	25023.88	411	60.89		
	Total	41400.00	414			

Note. N=415

a Dependent Variable: Standardized scores of academic achievement

b Predictors: (Constant), Behavioral engagement, Emotional engagement, Mental engagement

As shown in Table 4.45, there was a statistically significant mean difference between the sub-scales of academic engagement as determined by the one way ANOVA ($F(3, 411)=(89.7)$, $P=.00$). This finding implied that there was a significant difference in the means between those participants who were found to have mental, behavioral and emotional domains/sub-scales of academic engagement. The researcher did further analysis in order to determine the best predictor of academic achievement given the sub-scales of academic engagement. The findings were as given in Table 4.46.

Table 4.46

Regression Coefficients for the Prediction of Academic Achievement from the Sub-Scales of Academic Engagement

1	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>		
	<i>B</i>	<i>Std.Error</i>	<i>Beta</i>	<i>t</i>	<i>sig.</i>
(Constant)	15.58	2.30	-	6.78	.00
Mental engagement	1.21	.41	.24	3.00	.00
Emotional engagement	1.84	.197	.64	9.35	.00
Behavioral engagement	-.64	.217	-.26	-3.00	.00

Note. N=415

a Dependent Variable: Standardized scores of academic achievement.

From the data in Table 4.46, the prediction equation developed using the coefficients was as follows:

$$\hat{y} = 15.58 + 0.64 \text{ AE} + 0.24 \text{ CE} - 0.26 \text{ BE}$$

Both emotional engagement and mental engagement had positive predictive index of ($\beta=0.64$) and ($\beta=0.24$) respectively. The implication of this finding is that an increase in emotional and mental engagement scores may be associated with an increase in academic achievement scores. On the other hand, behavioral engagement was found to have a negative predictive index of ($\beta=-0.26$). This may imply that an increase in behavioral engagement score may lead to a decrease in academic achievement score and a decrease in behavioral engagement score may lead to an increase in academic achievement score. This finding was

contrary to the findings found in Table 4.43 on the correlations of the academic engagement sub-scales on academic achievement where the highest correlation was found in behavioral engagement ($r=.87, p<0.00$). This was followed by emotional engagement ($r=.78, p<0.00$) while the least correlation was found in mental engagement ($r=.51, p<0.00$).

c. Discussion of the Results

The third objective of this study sought to establish the relationship between the students' academic engagement and their academic achievement. The findings of the study indicated that there was a significant and a positive relationship between the students' academic engagement and academic achievement ($r(415) = .57, P < 0.05$). The study findings further revealed that among the sub-scales of academic engagement, the highest correlation was found between behavioral engagement and academic achievement ($r(415) = 0.87, p < 0.05$), followed by the correlation between emotional engagement and academic achievement ($r(415) = 0.78, p < 0.05$). The least correlation was found between mental engagement and academic achievement ($r(415) = 0.51, p > 0.05$). These findings implied that the students who scored highly on behavioral engagement sub-scale, were likely to be high achievers than their counter parts.

The findings of the current study were in line with the findings of a previous study by Zhang et al. (2018) in China which reported that academic engagement significantly mediated the detrimental outcomes associated with internet addiction on students' eventual academic achievement. The findings of the current study were also consistent with another study done in Nigeria by Kim et al. (2019). The study investigated how students perceived e-learning with academic engagement being the mediator among the university students. A partial least model squares was used to test the hypothesis. The researchers concluded that the students' engagement mediated the link between learning experiences and digital experiences. The

researchers also reported that in order for the students to be successful in their e-learning contexts at the university, they must be fully engaged in e-learning contexts.

The current results were in consistent with the findings of a previous study by Kuzminykh et al. (2021) which investigated the relationship between the student's engagement and academic performance among primary school pupils. The results revealed that the pupil's academic engagement influences their academic performance in an online education. The study's sample size was comprised of primary school pupils whose age ranged between 8years and 11 years. The current study sample was secondary school students whose age ranged between 14 years to 25years. The findings of these two studies revealed that irrespective of the schooling level and age of the learners, academic engagement predicted academic achievement.

The findings of the current study also supported the findings of a previous study done by Palos et al. (2019) on how the student's engagement and academic performance were related. The findings of the two studies implied that irrespective of the cultural differences that existed between the two samples academic engagement was positively and significantly related to academic achievement. The current findings were also in line with the findings of a study done by Panadero et al. (2021) which aimed at determining the influence of student's engagement on academic performance. The results revealed that the students' engagement and academic achievement were significant correlates. Myint and Khang (2020) reported similar findings when they studied the relationship between the students' loneliness, engagement and academic achievement during emergency remote teaching during COVID 19.

These findings were also in line with those by Mtega (2021) in Tanzania. The study explored the use of WhatsApp messenger on students' academic engagement and reported that its use

improved the students' engagement in reading. In all the studies done, it is worth noting that there has been a significant and a positive relationship between academic engagement and academic achievement. Therefore, this can be used to imply that students of different study locations, cultures and levels of schooling require academic engagement to improve their academic achievement.

The engagement theory of Learning by Kearsley & Shneiderman (1999) can be used to explain the findings of this study. This theory explains that engagement is a state of committed involvement in a learning task. It explains engaged learning as the process of attending classes, paying attention as the instructor teaches, being an active participant when discussing with other learners, timely completion of homework and showing obedience and adhering to rules and regulations in a learning environment. This theory can be used to explain why learners with moderate levels of academic engagement perform better than those with low levels of academic engagement.

4.4.4 Gender Differences in Students' Academic Adaptability, Academic Psychological Capital and Academic Engagement.

The results of the fourth objective are presented in this section. The descriptive statistics of the gender differences in the student's academic adaptability, academic psychological capital and academic engagement are given. Lastly, the appropriate inferential statistics are also presented.

a. Description of Gender Differences and Academic Adaptability

The respondents' academic adaptability scores were analyzed in order to find the mean and standard deviation and the results are summarized in Table 4.47 below.

Table 4.47*Gender Differences in Academic Adaptability*

	Gender	N	M	SD
Academic	Male	212	23.39	5.18
Adaptability Scores	Female	203	24.28	5.41

Note. N=415. M=mean; SD=standard deviation.

As shown in Table 4.47, the academic adaptability mean score for boys was 23.39 ($SD=5.18$) while girls were found to have a mean of 24.28 ($SD=5.41$). As a result, girls were found to have a higher academic adaptability mean score than the boys. This implied that girls had rated themselves highly on academic adaptability scale than the boys. Further, as observed in Table 4.8 academic adaptability scores had been used to categorize the participants into low, moderate and high levels of academic adaptability. These levels were cross tabulated with gender and the findings are presented in Table 4.48.

Table 4.48*Level of Academic Adaptability and Gender of the Participants*

		Gender of the participant		
		Male	Female	Total
Level of	low	62(14.9)	44 (10.6)	106(25.5)
academic				
adaptability	moderate	127(30.6)	125(30.2)	252(60.8)
	High	23(5.5)	34(8.2)	57(13.7)
Total		212(51)	203(48.9)	415 (100)

Note. N= 415; () = percentage.

The findings in Table 4.48 shows that there were more boys than girls in the low and moderate categories. It is also observed that more than half of the participants were moderate in their academic adaptability with more boys 30.6% than girls 30.2% in the moderate category. There were more girls 8.2% than boys 5.5% in the high category level. The researcher did further analysis to investigate whether there were gender differences in the sub-scales of academic adaptability. The findings of this analysis is given in Table 4.49.

Table 4.49

Gender Differences in the Means of the Sub-Scales of Academic Adaptability

	Gender	N	M	SD
cognitive Adaptability	Male	212	10.60	2.43
	Female	203	11.03	2.45
Behavioral Adaptability	Male	212	11.04	2.04
	Female	203	11.29	2.22
Affective adaptability	Male	212	10.52	2.55
	Female	203	10.97	2.64

Note. N=415. M=mean; SD=standard deviation

The findings in Table 4.49 indicated that girls were found to have a higher mean ($M=11.03$, $SD=2.45$) in the cognitive adaptability than the boys ($M=10.60$, $SD=2.43$). Secondly, girls were also found to have a higher mean ($M=11.29$, $SD=2.22$) in behavioral adaptability than boys ($M=11.04$, $SD=2.04$). Lastly, girls were also found to have a higher mean ($M=10.97$, $SD=2.64$) in the sub-scale of affective adaptability than the boys ($M=10.52$, $SD=2.55$).

b. Gender Differences and Academic Psychological Capital

The participants' academic psychological capital scores were analyzed so as to find out the mean and the standard deviation of the scores. The findings were presented in Table 4.50.

Table 4.50*Gender Differences in Academic Psychological Capital*

	Gender	N	M	SD
Psychological Capital	Male	212	1.34	.47
Scores	Female	203	1.41	.49

Note. $N=415$. M =mean; SD =standard deviation.

The results in Table 4.50 indicated that girls were found to have a higher mean in academic psychological capital ($M=1.41$, $SD=.49$) than the boys ($M=1.34$, $SD=.47$). Since academic psychological capital score had been used to categorize the participants into two levels; moderate and low, the two levels were cross tabulated with gender in order to find out if there were gender differences. The results are presented in Table 4.51.

Table 4.51*Levels of Academic Psychological Capital and Gender*

		Gender		
		Male	Female	Total
Psychological	Low	141(34)	120(29)	261(63)
capital	Moderate	71(17)	83(20)	154(37)
Total		212 (51)	203(49)	415 (100)

Note. $N=415$

The findings in Table 4.51 shows that, majority of the participants, who were found to have low level of academic psychological capital were boys 34%. It is also observed from the same Table 4.51 that more girls were found to have moderate level of academic psychological capital (20%) than the boys (17%). Given that academic psychological capital has four sub-scales, it was necessary to investigate the mean differences in these sub-scales

taking gender differences into consideration. The findings of this analysis are presented in Table 4.52.

Table 4.52

Gender Differences in the Means of the Sub-Scales of Academic Psychological Capital

	Gender	N	M	SD
Self-efficacy	Male	212	9.84	2.63
	Female	203	10.29	2.67
Resilience	Male	212	11.59	1.97
	Female	203	11.67	2.20
Hope	Male	212	11.54	2.08
	Female	203	11.88	2.14
Optimism	Male	212	11.83	2.19
	Female	203	11.98	2.40

Note. N=415; M=mean; SD=standard deviation.

As observed in Table 4.52, girls were found to have a higher mean in all the sub-scales of academic psychological capital than boys. This finding is in agreement with the findings in Table 4.50 where girls were found to have the highest mean in academic psychological capital scores than the boys.

c. Gender Differences and Academic Engagement

The participants' score in academic engagement were analyzed in order to get the mean and the standard deviation. The findings were presented in Table 4.53.

Table 4.53

Gender Differences in Academic Engagement

	Gender	N	M	S D
Academic Engagement	Male	212	36.50	7.49
	Female	203	37.82	7.9

Note. N=415; M=mean; SD=standard deviation

The findings in Table 4.53 show that the mean academic engagement score was 36.50 and 37.82 for boys and girls respectively. This revealed that in terms of academic engagement, girls were found to have the highest mean score ($M=37.82$, $SD=7.94$) than boys ($M=36.50$, $SD=7.49$). Given that academic engagement score had been used to group the participants into categories of low and moderate levels, a cross tabulation of these levels with gender was necessary and the results are presented in Table 4.54

Table 4.54

Levels of Academic Engagement and Gender

		Male	Female	Total
Academic	Low	52 (12.5)	22(5.3)	74(17.8)
Engagement	Moderate	160(38.6)	181(43.6)	341(82.2)
Levels				
Totals		212(51.1)	203(48.9)	415(100)

*Note.*415; ()= percentage

As shown in Table 4.54 majority of the participants were categorized as having moderate level of academic engagement 82.2 %, while the least 17.8% were categorized as having low level of academic engagement. Interestingly, more boys 12.5% were found to have low levels of academic engagement while more girls 43.6% were found to have moderate levels of academic engagement. Further, the researcher investigated the gender differences in the academic engagement sub-scales and the results are presented in Table 4.55.

Table 4.55*Gender Differences in the Sub-Scales of Academic Engagement*

	Gender	<i>N</i>	<i>M</i>	<i>SD</i>
Mental engagement	Male	212	9.92	1.9
	Female	203	10.24	2.03
Emotional engagement	Male	212	19.56	3.44
	Female	203	20.12	3.51
Behavioral engagement	Male	212	22.18	3.88
	Female	203	22.51	4.16

Note. *N*=415; *M*=mean; *SD*=standard deviation.

As observed in Table 4.55, girls had a higher mean in all the sub-scales of academic engagement ($M=10.24$, $SD=2.03$), ($M=20.12$, $SD=3.51$) and ($M=22.51$, $SD=4.16$), than boys ($M=9.92$, $SD=1.9$), ($M=19.56$, $SD=3.44$) and ($M=22.18$, $SD=3.88$). This finding implied that girls could be better achievers than the boys.

d. Hypothesis Testing on Gender Differences in Students' Academic Adaptability, Academic Psychological Capital and Academic Engagement.

According to the fourth objective that sought to establish whether there were significant gender differences in students' academic adaptability, academic psychological capital and academic engagement, the fourth null hypothesis was stated as follows.

H₀₄: There are no significant gender differences in students' academic adaptability, academic psychological capital and academic engagement.

The following three supplementary null hypotheses were formulated in order to test this hypothesis.

H_{04.1}: There are no significant gender differences in students' academic adaptability.

H_{04.2}: There are no significant gender differences in students' academic psychological capital.

H_{04.3}: There are no significant gender differences in students' academic engagement.

d. i. Testing the First Supplementary Null Hypothesis

H_{04.1}: There are no significant gender differences in students' academic adaptability.

To test this null hypothesis, descriptive analysis of the participants' academic adaptability scores by gender were analyzed to find the mean and the standard deviation. The results are presented in Table 4.56.

Table 4.56

Descriptive Statistics of Academic Adaptability by Gender

	Gender	N	M	SD
Academic	Male	212	23.39	5.18
Adaptability Scores	Female	203	24.28	5.41

Note. N=415. M=mean; SD=standard deviation.

The findings in Table 4.56 show that girls had a higher academic adaptability mean score ($M=24.28$, $SD=5.41$) than boys ($M=23.39$, $SD=5.18$). In order to test whether these mean differences were statistically significant, an independent samples t-test for the students' academic adaptability scores was done. The findings are presented in Table 4.57.

Table 4.57

Independent Samples t-test for Academic Adaptability Scores

		t	df	Sig. (2-tailed)
Total				
academic	Equal variances assumed	-1.71	413	.04
Adaptability Score	Equal variances not assumed	-1.71	409.83	.04

Note. N=415, df= degrees of freedom.

The findings in Table 4.57 revealed that, there was a significant gender differences in academic adaptability scores between the boys and the girls ($t(413) = -1.71, p < .05$) and the difference was in favor of the girls. Therefore, the first supplementary null hypothesis was rejected. This finding was in agreement with the results in Table 4.56 that revealed that girls were found to have a higher mean in academic adaptability scores than boys. This finding was in line with a study by Qian et al. (2018) who found out that there were gender differences in pattern of educational adaptation among boys and girls. Another study by Bashkireva and Bashkireva (2021) also found out that, there were gender differences in adaptive responses in the implementation of information technology in education. Further, the researcher investigated whether there were significant gender differences between the individual sub-scales of the students' academic adaptability. The data obtained was therefore subjected to the independent samples t-test of the individual sub-scales of academic adaptability and the results are presented in Table 4.58

Table 4.58

Independent Samples t-test of the Sub-Scales of Students' Academic Adaptability

	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
<i>Cognitive Adaptability</i>	-1.78	413	.03
<i>Affective Adaptability</i>	-1.73	413	.06
<i>Behavioral Adaptability</i>	-1.19	413	.24

Note. $N=415$. df =degrees of freedom.

As observed from Table 4.58, there were significant gender differences within cognitive adaptability ($t(413) = -1.78, p < .05$). This implied that more girls were found to have the ability to effectively and appropriately change their decision policies to learn. On the other

hand, there were no significant gender differences between boys' and girls' in both affective adaptability ($t(413) = -1.73, p >.05$) and behavioral adaptability ($t(413) = -1.19, p >.05$). This meant that although the girls were found to have a higher mean in affective and behavioral adaptability than the boys, their mean differences were not statistically significant. This finding implied that the differences in the means of affective adaptability and behavioral adaptability between the boys and the girls in this study could be due to chance.

d. ii. Testing the Second Supplementary Null Hypothesis

The second supplementary null hypothesis (according to objective four) was stated as follows:

H_{04.2}: There are no significant gender differences in students' academic psychological capital. A descriptive analysis of academic psychological capital scores by gender was done so as to obtain the mean and the standard deviation. The findings are presented in Table 4.59.

Table 4.59

Gender Differences in Academic Psychological Capital

	Gender	N	M	SD
Psychological Capital	Male	212	1.34	.47
Scores	Female	203	1.41	.49

Note. N=415. M=mean; SD=standard deviation.

As shown in Table 4.59, girls were found to have a higher mean ($M=1.41, SD=0.49$) than the boys ($M=1.34, SD=.47$). To test whether there was a statistical significance in the mean differences above, an independent sample t-test for the students' academic psychological capital scores was done and the findings are presented in Table 4.60.

Table 4.60*Independent Samples t-test for Gender Differences in Academic Psychological Capital*

		t	df	sig.(2-tailed)
Academic	Equal variances assumed	-1.63	413	.01
Psychological	Equal variances not assumed	-1.63	409.69	.01
Capital				

Note. N=415

From Table 4.60, it is observed that, there was a significant gender differences in academic psychological scores ($t(415)=-1.63, p < .05$) and the difference was in favor of girls. Therefore, the second supplementary null hypothesis was rejected. Girls were found to have a higher academic psychological capital scores compared to boys in the sub-county secondary schools in Kitui County. This finding could be used to explain the reason as to why girls were performing better than the boys in the sub-county secondary schools in Kitui County.

Since academic psychological capital is made up of four components, the researcher investigated whether there existed significant gender differences between the individual sub-scales of academic psychological capital. An independent samples t-test of the sub-scales was done and the findings presented in Table 4.61.

Table 4.61*Independent Samples t-test of the Sub-Scales of Students' Academic Psychological Capital*

APC		t	df	Sig. (2-tailed)
Self-efficacy	Equal variances assumed	-1.736	413	.05
Resilience	Equal variances assumed	-.393	413	.01
Hope	Equal variances assumed	-1.638	413	.03
Optimism	Equal variances assumed	-.645	413	.0

Note. N=415. APC= academic psychological capital, df= degrees of freedom;

The results in Table 4.61 indicate that there were significant gender differences with regard to the academic psychological capital sub-scales. This finding is in agreement with a finding by Mwangi (2015) which found out that there was a significant gender difference in the academic resilience scores between boy schools and the girl schools and that the difference was in favor of girls. However, the findings were inconsistent with earlier findings by Jason (2019) who reported that boys were found to have a high self–efficacy level in physics than the girls. The difference in this study and the present study could be because of the cultural differences.

d. iii. Testing the Third Supplementary Null Hypothesis

The third supplementary null hypothesis was stated so as to help in establishing whether there existed any gender differences in the students' academic engagement scores. The hypothesis was stated as follows:

H_{04.3}: There are no Significant Gender Differences in Students' Academic Engagement.

The researcher did a descriptive analysis of the students' academic engagement scores by gender and the results are presented in Table 4.62

Table 4.62*Descriptive Statistics of Academic Engagement Scores by Gender*

	Gender	N	M	SD
Academic				
Engagement	Male	212	36.50	7.49
Scores	Female	203	37.82	7.94

Note. $N=415$, M = mean, SD = standard deviation

As shown in Table 4.62, girls were found to have a higher academic engagement score mean ($M= 37.82$, $SD= 7.94$) than the boys ($M=36.50$, $SD=7.49$).

The researcher went further and investigated whether the mean differences were statistically significant. An independent samples t-test for the students' academic engagement scores was done and the results are presented in Table 4.63.

Table 4.63*Independent Samples t-test for Academic Engagement Scores*

		t	df	Sig. (2-tailed)
AE	Equal variances assumed	-1.74	413	.04
	Equal variances not assumed	-1.74	408.75	.04

Note. $N =415$. AE= academic engagement, df= degrees of freedom

As seen in Table 4.63, there was a significant gender difference in overall academic engagement scores ($t(415) = -1.74$, $p < 0.05$) and the difference was in favor of the girls. The third supplementary null hypothesis was therefore rejected. Girls were found to engage more in learning activities than the boys.

The researcher went further and investigated if there were significant gender differences between the sub-scales of academic engagement. The participants score in each of the academic engagement sub-scale was subjected to independent sample t-test and the findings of this analysis are presented in Table 4.64

Table 4.64

Independent Samples t-test for Gender Differences in Academic Engagement Sub-Scale

AE Sub-scales		t	df	Sig. (2-tailed)
Mental engagement	Equal variances assumed	-1.67	413	.05
Emotional engagement	Equal variances assumed	-1.65	413	.04
Behavioral engagement	Equal variances assumed	-.83	413	.05

Note. N=415. AE= academic engagement, df= degrees of freedom

The findings in Table 4.64 show that there was a significant gender difference with regard to all the academic engagement sub-scales and that the differences were in favor of the girls. This finding implied that girls were found to engage more in learning activities than the boys in the sub-county secondary schools in Kitui County. The finding was in agreement with those of Korlat et al. (2021) who found out that there was a significant gender differences in learning engagement and the difference was in favor of girls. However, the findings differed with those of Ncororo (2022) who found out that there was a significant gender differences with regard to intelligence beliefs and academic engagement and that the difference was in favor of the boys. The difference between this study and the current study may be due to cultural differences.

The researcher went further and investigated whether there existed gender differences in the outcome variable (academic achievement) even though it was not in the objectives of the

study. To obtain the mean and the standard deviation, a descriptive analysis of the academic T-scores by gender was performed and the results are presented in Table 4.65.

Table 4.65

Gender Differences in Academic Achievement

Gender	N	M	SD
Male	212	49.58	9.89
Female	203	50.44	10.12

Note. N=415. M=mean, SD=standard deviation

As seen in Table 4.65, girls were found to have a higher mean ($M = 50.44$, $SD = 10.12$) than the boys ($M = 49.58$, $SD = 9.89$) in academic achievement. This finding may have been enhanced by the findings in Table 4.47, Table 4.50 and Table 4.53 where girls were found to have a higher mean in academic adaptability, academic psychological capital and academic engagement respectively. The researcher went further and investigated whether the gender differences were statistically significant. An independent samples t-test of academic achievement was performed and the results are presented in Table. 4.66.

Table 4.66

Independent Samples t-test of Gender Differences in Academic Achievement

	t	df	Sig. (2-tailed)
academic achievement	-.88	413	.38

Note. N=415

The findings in Table 4.66 shows that there were no significant gender differences in academic achievement ($t(413) = -0.88$, $p > .38$). These findings were in agreement with those of Mutua (2018) who found out that there were no significant sex differences in academic achievement.

4.4.5 Prediction of Academic Achievement from Academic Adaptability, Academic Psychological Capital and Academic Engagement.

The fifth objective of this study was to develop a predictive equation for academic achievement from academic adaptability, academic psychological capital and academic engagement. Multiple regression analysis was performed on the data in order to achieve this objective. The outcome of this analysis was a model summary, ANOVA and the regression coefficients. The model summary presented in Table 4.67 gave the multiple correlation coefficient and the R square for the regression model.

Table 4.67

Model Summary for Regression Equation

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>R Std. Error of the Estimate</i>
1	.67 ^a	.54	.45	7.5

Note. N=415

a. Predictors: (Constant), Academic Engagement, Academic Adaptability, Academic Psychological capital score

Table 4.67 shows the R square value as ($R^2 = 0.54$) which explains the percentage of the variation in the dependent variable that is explained by the independent variables. The R value ($R = 0.67$) measures the strength of the relationship between the model and the dependent variable and in this case the relationship is strong. According to the data in Table 4.67, 54% of the variation that occurred on the students' academic achievement was caused by the academic adaptability, academic psychological capital and academic engagement. The implications of these results is that to a large extent, academic achievement of the sub-county

secondary school students in Kitui County was predictable from academic adaptability, academic psychological capital and academic engagement.

b. Hypothesis Testing

After the researcher found out that the dependent variable was predictable, it was necessary to test the significance of the prediction equation. With reference to the fifth objective of this study, the following null hypothesis was advanced:

H₀₅: There is a no significant predictive model of academic achievement from academic adaptability, academic psychological capital and academic engagement.

Based on the multiple regression analysis, the summary ANOVA table was used to determine the significance of the prediction equation and the findings are presented in Table 4.68

Table 4.68

ANOVA Summary Table for the Regression Model

<i>Model</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	18415.02	3	6138.34	109.76	.00 ^b
1 Residual	22984.98	411	55.93		
Total	41400.00	414			

Note. N=415

The data presented in Table 4.68 shows that the prediction model for academic achievement from academic adaptability, academic psychological capital and academic engagement is significant ($F(3, 411) = .00, p < .05$). As a result, the null hypothesis was rejected, indicating that academic adaptability, academic psychological capital and academic engagement significantly predicts academic achievement. Further analysis was done to determine the

predictive weight of the three independent variables on academic achievement. The findings are presented in the Table 4.69.

Table 4.69

Regression Coefficients for the Prediction of Academic Achievement

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>T</i>	<i>Sig.</i>	
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			
	(Constant)	15.22	2.00		7.70	.000
1	AAS	.33	.10	.17	3.21	.001
	APCS	.68	.11	.42	5.97	.000
	AES	.17	.08	.13	2.09	.037

Note. N=415

a. Dependent Variable: Academic Achievement

Note: AAS=Academic adaptability score, ACPS= Academic psychological capital score, AES= Academic engagement score.

The researcher developed a prediction equation using the coefficients as follows;

$$\hat{y} = 15.22 + 0.17AAS + 0.42 APCS + 0.13 AES$$

From the data in Table 4.69, it is shown that the predictive index for academic adaptability, academic psychological capital and academic engagement is ($\beta = 0.17$), ($\beta = 0.42$) and ($\beta = 0.13$) respectively. Since the predictive indices are positive, the implications of these findings may be that an increase in academic adaptability, academic psychological capital and academic engagement score may lead to an increase in academic achievement score. Academic psychological capital was found to have the highest predictive index ($\beta = 0.42$), followed by academic adaptability ($\beta = 0.17$) and the least predictive index was from academic engagement ($\beta = 0.13$). These findings may imply that academic psychological capital could be the best predictor of academic achievement followed by academic

adaptability. The least predictor of academic achievement according to Table 4.69 could be academic engagement.

b) Discussion of the Results

The fifth objective of the study sought to establish the prediction equation for academic achievement from academic adaptability, academic psychological capital and academic engagement. The findings of the study showed that the prediction model for academic achievement from academic adaptability, academic psychological capital and academic engagement was significant ($F(3, 411) = .00, p < .005$). The findings also gave a prediction equation using the coefficients as follows;

$$\hat{y} = 15.22 + 0.17AAS + 0.42 APCS + 0.13 AES$$

The findings of this study further revealed that the predictive index for academic adaptability, academic psychological capital and academic engagement was ($\beta = 0.17$), ($\beta = 0.42$) and ($\beta = 0.13$) respectively. The implications of these findings may be that an increase in the academic adaptability, academic psychological capital and academic engagement score may lead to the increase in academic achievement score.

The findings were in line with those of an earlier study by Martinez et al. (2019). The study explored how academic achievement, academic psychological capital and academic engagement were connected among university students. It was reported that there was a positive correlation among the three variables. A similar study done in Australia by Collie et al. (2019) presented similar findings. The study looked at how academic adaptability, academic engagement and academic achievement were linked. The data was collected among the university students and the analysis was done using exploratory factor analysis. It was reported that academic engagement, academic adaptability and academic achievement were

positively correlated. The samples used in these studies differed in terms of the study location, and on the respondent's age. However, despite of all these variations, academic engagement and academic adaptability were found to significantly relate to students' achievement.

The findings of the current study supported the findings of a study done in South Africa by Velsdeman (2018) which investigated the relationship between psychological capital, academic engagement and performance. The data was collected among 234 post graduate students and analyzed using the exploratory factor analysis. It was reported that psychological capital was positively related to academic engagement as well as performance.

As observed in Table 4.67, the R square value ($R^2=0.54$) showed that 54% of the total variation in the students' academic achievement can be explained by the combined effect of the students' academic adaptability, academic psychological capital and their academic engagement. The findings also gave an implication that about 46% of the students' academic achievement was explained by other factors like school factors, environmental factors or even individual factors. Factors like locus of control, personal traits are some of the individual factors while teacher factors, school factors and home factors may be some of the environmental factors.

From the prediction analysis, it can be explained that students who have high levels of academic adaptability, moderate levels of psychological capital and academic engagement may be classified as high achievers. On the other hand, those students with low levels of the same variables could be classified as low achievers. This finding can be used to explain the problem of the below average performance in sub-county secondary schools in Kitui County.

4.5 Exploratory Analysis

4.5.1 Structural Equation Modeling

Further analysis was done using SEM to establish the interactions of the variables used in this study. According to Bollen (1989), one reason for using SEM is to analyze the interactions between latent variables. In this study SEM is used to examine how academic adaptability, academic psychological capital, academic engagement and academic achievement interact with each other, their indirect effects and then come up with the best model that can be used to predict academic achievement. Figure 4.2 shows the model of how academic adaptability, academic psychological capital and academic engagement predict academic achievement.

Figure 4.2

Academic Adaptability as an Exogenous Variable

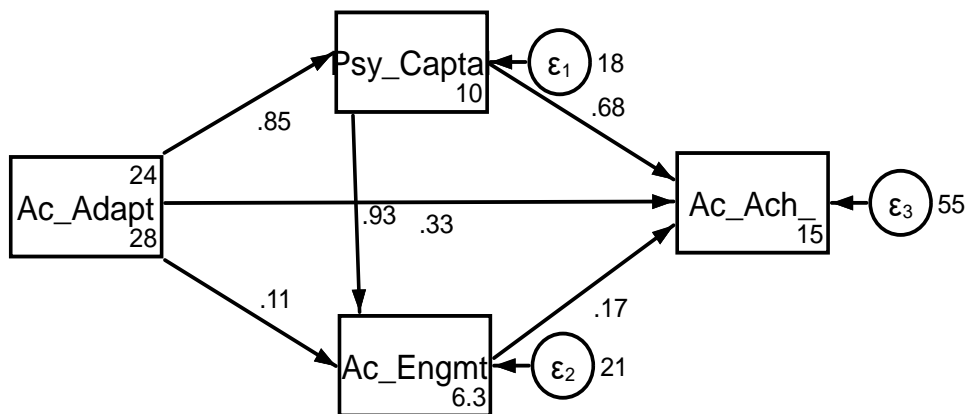


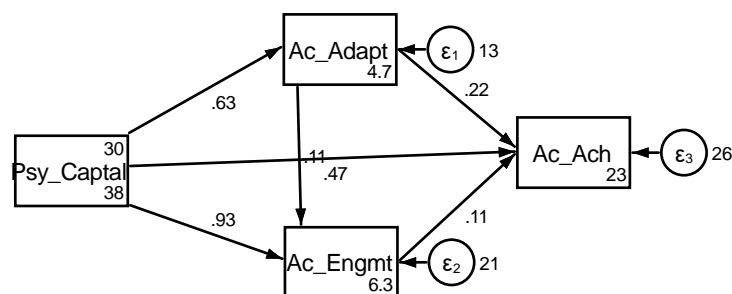
Figure 4.2 shows the association of academic adaptability and academic achievement where academic psychological capital and academic engagement act as endogenous variables while academic adaptability is an exogenous variable. The model estimate for the direct path between academic adaptability and academic achievement was significant and positive ($\beta = 0.33, p < .05$). Likewise, the direct path from academic psychological capital to academic achievement was positive and significant ($\beta = 0.68, p < .05$). Similarly, the direct path from

academic engagement to academic achievement was positive and significant ($\beta = 0.17$, $p < .05$). Furthermore, the path from academic adaptability to academic engagement was positive and significant ($\beta = 0.11$, $p < .05$). The model also revealed that the path from academic adaptability to academic psychological capital was positive and significant ($\beta = 0.85$, $p < .05$) and the path from academic psychological capital to academic engagement was proven to be positive and significant ($\beta = 0.93$, $p < .05$). The model was fit in predicting academic achievement, $\chi^2(3) = 12.13$, $p < .05$. The results suggested that the model can be used to predict academic achievement where academic adaptability acts as the exogenous variable while academic psychological capital and academic engagement act as endogenous variables.

The second model of the study sought to scrutinize the interaction between academic psychological capital and academic achievement. The exogenous variable of the model was academic psychological capital and the endogenous variables were academic adaptability and academic engagement. The model is presented in Figure 4.3.

Figure 4.3

Psychological Capital as an Exogenous Variable



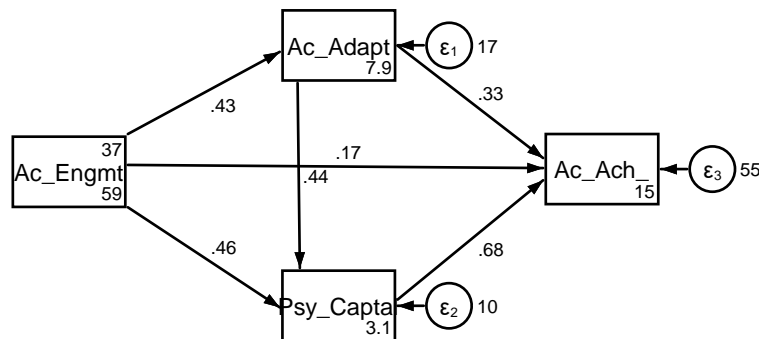
In figure 4.3, the estimate of the direct path showing the relationship between academic psychological capital and academic achievement was positive and significant ($\beta = 0.47$, $p <$

.05). The path from academic psychological capital to academic adaptability was also positive and significant ($\beta = 0.63, p < .05$). The path from academic psychological capital and academic engagement was positive and significant ($\beta = 0.93, p < .05$). Likewise, the path from academic adaptability to academic engagement was positive and significant ($\beta = 0.11, p < .05$). On the other hand, the direct path from academic adaptability to academic achievement was significant and positive ($\beta = 0.22, p < .05$). Finally, the direct path from academic engagement to academic achievement was significant and positive ($\beta = 0.11, p < .05$). The model was fit in predicting academic achievement, $\chi^2(3) = 8.32, p < .05$.

Finally, the third model sought to establish how academic engagement directly predicts academic achievement. In this model, academic engagement acted as exogenous variable while endogenous variables were academic adaptability and academic psychological capital. The model is shown in Figure 4.4.

Figure 4.4

Academic Engagement as an Exogenous Variable



The model in Figure 4.4 shows that the estimate for the direct path from academic engagement to academic achievement was significant and positive ($\beta = .17, p < .05$). Likewise,

the estimate for the direct path from academic engagement to academic adaptability was positive and significant ($\beta = .43, p < .05$). The estimate for the direct path from academic adaptability to academic achievement was also positive and significant ($\beta = .33, p < .05$). On the other hand, the estimate for the direct path from academic psychological capital to academic achievement was positive and significant ($\beta = 0.68, p < .05$). The estimate for the direct path from academic engagement to academic psychological capital was positive and significant ($\beta = .46, p < .05$) and the estimate for the direct path from academic adaptability to academic psychological capital was positive and significant ($\beta = 0.44, p < .05$). The model was fit in predicting academic achievement, $\chi^2(3) = 9.41, p < .05$ implying that the model was fit for the prediction of academic achievement with academic engagement as the exogenous variable and academic adaptability and academic psychological capital as endogenous variables.

To establish the best model that can be used to predict academic achievement, analysis of direct effect, indirect effect and total effect was examined and the results are presented in Table 4.70.

Table 4. 70*Analysis of Direct Effect, Indirect Effect and Total Effect*

Variables	Direct Effect	Indirect Effect	Total Effect
Academic adaptability	0.47	0.36	0.56
Academic Psychological capital	0.74	0.56	0.84
Academic engagement	0.43	0.78	0.48

Table 4.70 shows the direct effect, indirect effect and total effect of academic adaptability, academic psychological capital and academic engagement each acting as exogenous variable. The path that has the highest total effect in the prediction of academic achievement starts with academic psychological capital (0.84) followed by academic adaptability (0.56) while the least total effect in the prediction of academic achievement was found in academic engagement (0.48). Based on the results, the best way to predict academic achievement of the sub-county secondary school students' in Kitui County is to enhance their academic psychological capital first, followed by academic adaptability and then improve their academic engagement. This may go a long way to improve academic achievement in secondary schools in Kitui County and the country at large.

According to the first model in figure 4.2, academic adaptability had a significant and positive relationship with academic achievement. This confirms the results that academic adaptability influences academic achievement among the students Holliman et al. (2019). The

results of SEM analysis implied that academic psychological capital strengthened the relationship between academic adaptability and academic achievement. On the other hand, the results also suggested that academic engagement also strengthened the relationship between academic adaptability and academic achievement. The model also revealed a significant relationship between psychological capital and academic engagement. These findings are in line with Martinez et al. (2019) who argued that these variables are precursor to academic achievement and they help students enhance their learning.

The study also found out in figure 4.3, that academic psychological capital positively and significantly predicted academic achievement. In the same model the results revealed that academic adaptability and academic engagement positively strengthened the relationship between academic psychological capital and academic achievement. The results similarly revealed the importance of academic psychological capital as it enhances academic achievement among students. This is in support of the theory that anchored this study, which suggests that psychological capital has a significant influence on academic achievement among students Adil et al. (2020). Similarly, Abbas and Raja (2019) revealed that psychological capital among the students plays a crucial role in predicting academic achievement amongst students.

Finally, it was revealed in figure 4.4, that academic engagement positively and significantly predicted academic achievement. The SEM analysis results indicated a positive and significant direct relationship between academic engagement and academic achievement. Academic adaptability was found to significantly and positively strengthen the relationship between academic engagement and academic achievement. Similarly, academic psychological capital was found to positively and significantly strengthen the relationship between the academic achievement and academic engagement. The results are in line with the

engagement theory of learning which states that academic engagement significantly predicts academic achievement of the students Kim & Hong (2019).

In conclusion, the path model that has the highest predictive effect on academic achievement is academic psychological capital, academic adaptability and then academic engagement. According to Kuzminykh (2021) academic engagement amongst students is predicted by personal traits and helps students to develop sense of belonging for better academic achievement. Ferreira et al. (2019) also indicated that academic achievement among students is influenced by their psychological capital. Besser et al. (2020) revealed that the higher the academic adaptability the higher the academic achievement. The study therefore concludes that to improve academic achievement of students, there is need to enhance their academic psychological capital, academic adaptability and then academic engagement in that order. This will help to improve academic achievement of sub-county secondary schools in Kitui County.

4.6 Qualitative Analysis

Qualitative data analysis is the process of organizing, analyzing and interpreting non-numeric information in order to capture themes and patterns. The purpose of the qualitative analysis was to help the researcher to have an in depth understanding of the quantitative data Creswell (2018). Interview questions were created from academic adaptability, academic psychological capital and academic engagement questionnaires and were informed by the quantitative findings. The interviews were conducted on some specific participants, (20 boys and 20 girls) in order to get an in depth explanation of the students' academic adaptability, academic psychological capital and academic engagement. From the quantitative analysis, Learners with higher levels of academic adaptability, academic psychological capital and academic engagement performed better. While on the other hand, learners with low level of academic adaptability, academic psychological capital, and academic engagement performed

poorly. From the above findings, we may deduce that individual differences in beliefs and values may bring forth individual differences in performance as suggested by Dweck and Leggett (1988).

4.6.1 Interview Data Analysis

From all the data that was collected for this study, a data set of 40 participants (20 boys and 20 girls) was purposively sampled to participate in the interviews. Since the quantitative results were based on the researcher's interpretations of the study variables, there was need for a detailed data based on the participant's interpretations and perspectives of the students' academic adaptability, academic psychological capital and academic engagement. To analyze the interview data, the researcher read through the set of the data looking for patterns or themes, as proposed by Braun and Clarke (2006). The interviews were analyzed by organizing and preparing the data for analysis by reading through the data, coding the data and generating themes and descriptions. The researcher aimed at reporting word for word, as it was recorded at the interview and also including the non-verbal responses in the written transcription of the interview.

4.6.2 Data Coding

Coding is the process of systematically categorizing texts in the qualitative data in order to find themes and patterns. Data coding allows you to interpret, organize and structure the observations and interpretations into meaningful theories. Codes can be developed from the raw data, from theories or even from research questions or goals. Converting of the audio recordings of the interviews into a text format was done and re-read severally following the method suggested by Creswell (2014). The researcher used open coding where the ideas and the meanings in the raw data were examined. Axial coding followed where the researcher established the relations that may exist within the codes. The text was grouped into themes

and qualitative reliability was checked through high inter-coder agreement in order to allow for logical and objective interpretations of the qualitative data.

4.6.3 Code Book Development

A code book is a detailed description of the codes, how they should be used, their relationship to each other, what should be included and excluded in each code. According to Creswell (2014), code book is a set of codes, definitions and examples used as a guide to help analyze interview data. The coding process followed the eight steps as stipulated by Creswell (2014). The researcher developed a qualitative code book highlighting the list of codes, code labels, detailed descriptions of the codes, inclusion and exclusion criteria and examples of quotes illustrating each code. The advantage of this method is that it defines the criteria and maximizes the consistency among the codes. Revisiting the transcripts and finding the specified text was made easy by the coding process. The researcher used the mentioned coding method to analyze the data and identify the themes. The interview data was to provide an in depth understanding of the relationship between academic adaptability, academic psychological capital, academic engagement and academic achievement. Priority was given to the topics that were relevant to the respondents and the topics were arranged hierarchically in the code book. Forty participants, among them 20 participants who rated themselves highly and another 20 participants who rated themselves lowly were further questioned on the academic adaptability, academic psychological capital, academic engagement and their academic achievement. A code book for students' academic adaptability, academic psychological capital and academic engagement was developed and presented in Table 4.71.

Table 4.71

Code Book for Students' Academic Adaptability, Academic Psychological Capital and Academic Engagement

Parameters	Topic
Code	Response to challenges
Description	Despite the general believe that form three work is quite hard, some students agree That they require some effort in order to perform better. Other students are of the View that they cannot perform any better.
Inclusion Criteria	Putting effort
Exclusion Criteria	No effort
Examples	<p>“Form three work is quite hard but when i put some more effort I am able to do better”.</p> <p>“There is a lot of hard work in form three and the content is too hard to master.”</p>
Code	Adjusting to a learning environment
Description	<p>Some students believed that they are able to adjust to any learning task in order to improve on their performance.</p> <p>Other students do not like new learning tasks because they do not understand it.</p>
Inclusion Criteria	Being able to adjust
Exclusion Criteria	Not able to adjust
Examples	<p>“When a teacher introduces a new learning activity, I am able to follow and understand.”</p> <p>“I don’t like when a new content is being taught because I don’t understand.”</p>
Code	Believing in Oneself

Description	Some students believed that they could read and understand on their own and as a result improve their performance. Others believed that when they read on their own, they cannot understand and that is why they fail.
Inclusion Criteria	Believing in one's self
Exclusion Criteria	Not believing in one's self
Examples	<p>"I am always confident that I can read and understand a content on my own."</p> <p>"I lost interest in reading because whenever I read I don't understand."</p>

Code Engaging in Learning Activities

Description	Some students are attentive and get interested when being taught. Some students have lost interest in learning and so they do not pay attention
Inclusion Criteria	Involvement in learning activities
Exclusion Criteria	Disengaged
Examples	<p>"I am always attentive and interested whenever the teacher is in class."</p> <p>"I have no interest when being taught that is why I do not pay attention."</p>

i) Low Academic Adaptability

The participants who rated themselves lowly on the three sub-scales of academic adaptability were classified as having low levels of academic adaptability. Therefore, two participants (1 female and 1 male) were selected to be interviewed in order to give their personal perceptions on their performance.

Academic adaptability is the learner's ability to adjust to their new or changing learning environment Holliman et al. (2018). As a result, those students who were found to have low

scores on academic adaptability scale were found to have rated themselves lowly on behavioral, cognitive and affective sub-scales. They felt that they are not able to adjust and perform better when given a new learning task. Such students focus on the fact that they do not like new learning tasks because they are not able to understand. These students did not show any sign of improvement in their academic achievement. Most of them revealed that, they were not interested in learning because they cannot pass. Depending on the quantitative findings, two participants (a male and a female) whose scores were low in the academic adaptability scale were identified. The essence of this interview was to get the students' opinion for the purpose of having an in depth understanding of the quantitative results. The names of the participants used the researcher were not their real names.

Mumbe: This was the first participant who had scored lowly on the academic adaptability scale, and when asked why form three work was hard and challenging she said, “there is a lot of work in form three and the content is too hard to understand, as I result I have decided not to bother myself.” When the interviewee was interrogated further, she said, “even my parents say that I cannot improve and my subject teachers have given up on me”. During her end of term one examinations and the second term opener examinations, Mumbe had scored D and D- minus respectively. When asked what she can do to improve on her performance, she said, “I have lost any hope of ever improving and so I just want to do to my KCSE and do away with this stress.” When asked about how she arrived at her optional subjects she said, “I followed what majority of the students chose, not that I have any special interest in the subjects that I chose.” This statement indicated that, Mumbe had no interest in her studies and that is why she followed her colleagues without considering what was best for her. She went further to explain that even when they go to the laboratory for Chemistry practicals she has to follow what the other students are doing because she cannot understand the instructions. When asked whether Chemistry is the only challenging subject she said, “I also do not like

history and C.R.E because they have a lot of notes which I find difficult to read and internalize.

When asked whether she can adjust her behavior and attitude towards her studies she said, “how do I change my attitude towards something that I know I cannot succeed in it? Even if I try to read I know I cannot pass because I even do not understand when the teacher is teaching.” Mumbe was then asked about what she thinks about herself and her answer was, “I know I have disappointed my parents so much and that is the reason why I have given up on reading because I don’t think that I can ever improve.” When asked whether she can seek out new information to help her improve on her studies she said, “where do I seek this new information from?” When asked on whether she can change her reading habits, she said, “I have always performed poorly and so, it does not matter which reading method I use, I know that I cannot pass.” According to her, nobody has ever told her that she can do better if she puts some effort and that has made her to give up.

When asked about how she deals with the negative emotions she said, “negative emotions make me nervous and I am not able to reason rightly”. When asked about whether she has accepted that she will fail in her end of the form four examination, she said, “I want to try and see whether I can get at least a grade that can place me in any tertiary institution.” Although this response was not agreeing with what she had said earlier, she seemed to understand that there was need for her to put in some more effort if at all she was to advance in her schooling. This revealed that Mumbe having been categorized as having a low level of academic adaptability, her responses agreed with the findings in the quantitative analysis.

Mutua: This was the second respondent who had scored lowly on the academic adaptability scale. When asked how the form three work was, he said “I think form three work is quite

hard and more demanding than I expected, having to read for three papers in one subject is not easy, I don't like this issue of paper one, two and three." When asked about the choice of his optional subjects he said, "I didn't choose the optional subjects because I loved them but because it was a must for each student to do so." This gave the implication that what this student was doing was just like a duty to him but not a personal decision. When interrogated further he said, "subjects like English Literature and Kiswahili Fasihi are very challenging, you have to read a whole set book to understand the flow of the story, the characters and the themes which is not easy." When asked about how he performed in form three he said "I got a good E at the end of the term one examination and a D minus in the second term opening examinations." He was asked whether he was okay with that kind of performance and the response was, "I have accepted that I cannot pass, that is why I have lost interest in my studies." When asked about the best grade that he has ever attained since he joined form one, he said, "I once attained a D plus in form one third term, but I think it was just by a mere luck".

Upon being asked how he handles his learning tasks, he said, "I always wait to see what my classmates are doing and then I copy what they do". When asked whether he is able to join a discussion group when doing an assignment to see if he can improve, he said "I don't think that I am able to work with other people, they definitely know that I perform poorly and I may end up being ridiculed". Mutua further noted that he does not like the way there are a lot of learning activities in form three. When asked what he meant by a lot of work in form three he said, "the set books for both English and Kiswahili is a real head ache to me, then we have to go for practicals for both Biology and Chemistry which is too much for me to handle given that I have other notes to read". Going by what the respondent was saying, it was clear that

this student was not able to adapt to the form three work in order to try and improve his performance.

Mutua was then asked on how he handles new learning tasks he said, “I don’t like anything new because it makes me nervous, and as a result I don’t perform well”. Asked whether he is able to adjust his thinking when doing an assignment, he said, “every time I am attempting to do an assignment, my mind always tells me I cannot make it”. When asked whether he is able to change his reading habits, he said, “I do not need to, after all I cannot pass and I have given up on reading”. Asked how he deals with negative emotions his response was, “I don’t know how to control them and as a result, they make me hate everything about learning”. When he was asked on how he reduces negative emotions, he said, “negative emotions are my un doings, fear to fail and anxiety always make me very unstable emotionally”. When asked about what emotions can help him in learning, his response was, “self-confidence, which I don’t have, I have always believed that I cannot do anything good”. When asked about why he does not believe in himself he said, “I always fail and so there is nothing that I can do about it”.

ii) High Academic Adaptability

Students who scored highly on the academic adaptability scale were categorized as having high levels of academic adaptability. As a result, two students (1 male and 1 female) were sampled for the interview.

According to the theory of Individual Adaptability by Ployhart and Bliese (2006), students with high level of academic adaptability do not show signs of burn out and they demonstrate higher levels of concentration in learning and academic performance. These students are able to adjust into any new or changing learning environment and work harder in order to improve

their performance Ochieng et al. (2019). Such students are helped by the change in the teaching methods, learning materials and assignments in order to improve their performance. On the bases of the quantitative outcome, two participants (one female, one male) who were classified as having high academic adaptability were interviewed so that the researcher can get further information about the respondent's individual views and their experiences.

Jane: This was the first respondent with high academic adaptability score, who seemed to be sure of herself. When she was asked about how the form three work was, she said, "form three work is not easy, it requires one to put some effort in order to do better." When she was asked about the optional subjects that she chose, she said, "Biology is my favorite subject and I don't struggle to understand whenever I am revising, as for chemistry I find it a little bit challenging but I always seek help from my teachers and my colleagues." According to this respondent, interacting with other students and teachers was of help because it made her improve her performance. Asked about how her parents viewed her performance she said, "my parents and my siblings know my ability and so they have no problem with my performance, and I have assured them of a good grade." When she was interrogated on the grades she had attained in form three, her answer was, "I got a B during my end of term one examinations and a B minus during the second term opening examinations and I am working hard to maintain my grade or even do better."

When asked whether she is able to adjust her learning approaches her answer was, "yes, of course, I make sure that I accept whenever I fail and look for another learning approach". I always congratulate myself whenever I perform better and I always purpose to work more hard." Asked whether she has a program that she follows when reading she says, "I have a time table that I always follow and I make sure that whenever I deviate a bit, I go back and

compensate”. She continued and said, “the time table helps me a lot in managing my time so that I don’t spend a lot of my time reading what I like most.” When she was asked on how does she manage reading a lot of content within a short time, her answer was, “every time I read a new content I make summary notes and this helps me later when I am revising in a rush.” She was further asked on whether she beliefs in herself and she said, “I have no doubt that I will pass in my examinations, what I am not sure of is which grade from a B minus and above will I attain.”

When asked about how he handles new learning tasks, she said, “whenever I come across a new learning item, I like discussing it with my discussion group members and in case we don’t come up with a solution we consult our teachers”. Asked whether she is able to adjust her thinking when doing an assignment, she said,” yes of course, whenever for example I am doing an assignment alone and I face a challenge, I like consulting”. Asked whether she is able to seek out new information to help her perform well, she said “I read a lot of revision books and they have been of great help to me”. When she was asked how she reduces negative feelings, when studying she said, “I like relaxing whenever I feel nervous and so as a result sometimes I like going to the field and play with my friends”. She continued to explain and said that,” other times I don’t blame myself for being anxious especially during examination time because such feelings are normal”.

Abdi: This was a second respondent who had scored highly on the academic adaptability scale. When asked to comment on the form three work, his answer was, “it is true that form three work is demanding and somehow very challenging but I work very hard, I make sure that I repeat every content that I do not understand over and over again.” When asked about the optional subjects that he chose, his answer was, “I choose the subjects that I loved most,

of course with the help of our career teacher, I had also identified a career that made me choose Biology and Physics.” Asked about his performance in form three, he said, “during the end of term one examinations, I had scored a B plus while in the second term’s opening examinations, I scored a B.” Asked what he can say about his performance he said, “I am definitely sure that I will score a B plus and above during my KCSE.”

When asked whether he is able to adjust to a lot of work being taught in form three, he says, “I believe I am equal to the task, I am able to adjust myself to cope up with every challenge in my studies.” This alone created the implications that Abdi was able to adjust to any new learning environment in order to improve his performance. When asked about what he does whenever he does not perform well, he says, “I sit down and evaluate myself to find out where I went wrong and then start working on it so that I can polish up on my problem.” When asked about why he works hard in class he says, “I work so hard with an aim of understanding the content taught and help me improve my performance.” When he was asked about whether he has a program to follow when revising, his answer was, “I have always had a timetable that helps me manage my time well and also balance my revisions.”

When asked how he deals with new learning tasks, he said, “I read a lot of books and consult a lot whenever I come across a new content”. Asked whether he is able to adjust his thinking when doing an assignment, he said, “I very much like different study methods whenever I am reading or doing an assignment”. He further explained and said that, “I even like seeking new information that can make me improve my performance like using google when I can to look for more information on a certain content”. When asked how he deals with negative emotions he said, “I like talking to our guidance and counseling teacher who helps me on how to navigate such thoughts”. Asked about how he deals with uncertainties when reading

he said, “I am always ready for any eventualities in my studies and so having an open mind helps me a lot”.

Based on the interview conversations, with the four respondents, it was established that there was a relationship between their responses and what they scored in the academic adaptability scale. It was also clear that their responses corresponded with their academic achievement results. From their conversations, the researcher established that those who had scored lowly on the academic adaptability scale, were not able to adjust and perform better in their form three work. Such respondents made remarks like “I have lost interest, “I always fail”, I don’t bother to read any more”, “I scored D and D minus respectively”. These responses reflected low academic achievement. Those respondents who had scored highly on the academic adaptability scale were able to adjust to the challenges that came with the form three work. In their conversations, they gave declarations like, “I have interest in learning new things”, “I am able to change my reading habits”, “I am certain that I will get good grades”. These statements point out to a student who has the ability to perform better.

iii) Low Academic Psychological capital

Those students who had scored lowly on the academic psychological capital scale, were rated as having low levels of academic psychological capital. According to the quantitative results, two participants (a female and a male) who were classified as having low level of academic psychological capital were followed and interviewed with an aim of getting some additional information.

According to Abukari (2018), students who are rated as having low levels of academic Psychological capital are also categorized as low achievers. These students’ lack hope, self-efficacy, optimism and resilience which are key elements for any individual student to

perform better. In this study those students who were categorized as having low academic psychological capital levels were followed in order to give their personal opinions.

Kelly: This was the first respondent in low academic psychological capital scale. When she was asked how the form three work was generally, she said “I don’t like form three work because the content seems complicated and quite challenging.” Asked about the optional subjects that she chose, her answer was “I chose Biology and Physics as far as sciences are concerned.” She continued to explain and said that “not that I like or understand the subjects that I chose, but it is because it was a must for one to choose.” Asked about her performance in form three she said, “during the end of term one examinations I scored a D plain while during the second term’s opening examinations, I scored a D minus”. When she was asked whether her parents get involved in any way in her studies, she said, “Apart from paying the school fees, there is nothing else they do, it’s like they have lost hope in me”. When asked whether her teachers are of any help to her, she said, “my teachers are very uncooperative and again I also think that they hate me”.

When asked whether she believes in her abilities she said, “I do not believe that I can do anything good”. Asked about how she deals with unexpected learning tasks, she said, “I find them boring because they add some more stress to me”. Asked about how she can deal with difficult learning situations she said, “I don’t waste my energy, because my struggles do not bear any fruit”. Upon asked whether she has any options, in solving her learning problems she said, “honestly I have given up”. Asked whether she has any learning approaches she can use to improve her performance she said “I have none and I don’t bother”. When asked about her view on learning new things her response was, “it is a waste of time, I don’t think I can understand anything”. Asked whether she is flexible in her learning habits, she said,

“flexibility is for the bright students, even if I try to do things differently I always fail”. Upon being asked whether she has any hope of scoring a good grade she said, “no, I have always scored between an E and a D, unless a miracle happens I cannot get anything better than that”. When asked which grade does she hope to get during her KCSE she said, “as usual between an E and a D”.

Abel: This was the second respondent who had scored lowly on the academic psychological capital scale. Asked how he views the form three work he said, “form three work is very hard, however much I try, I always fail. I don’t have any faith that I can do better in any of the subjects.” The respondent continued to explain that, “Even if I read on my own, I do not understand and this has led to my giving up”. Abel was a low level academic adaptability respondent and he did not see any possibility of him passing. In fact, according to him, there was nothing good that he could get from school and so he was in school as a formality waiting for the programme to come to an end so that he can walk away. Asked what does his parents and teachers say about his performance he said, “all of them have stopped bothering because they do not think that I can improve, all in all I do not blame them because I know there is nothing I can do to improve.” When asked about her performance in form three he said, “I scored a D in the end of term one examinations and another D in the second term’s opening examination”.

When asked whether he had any confidence that he can do better, he said, “I have no confidence whatsoever because however much I try, I always fail. I don’t have any faith that I can do better in any of the subjects.” The respondent continued to explain that, “if even I read on my own, I do not understand and this has led to my giving up”. Asked how he deals with unexpected learning tasks, he said, “They give me a lot of pressure and sometimes I don’t

know what to do”. When asked about how he deals with difficulty learning environment, he said, “I resist such difficulties and that is why I have transferred from my previous two schools”. Upon being asked how he solves his learning problems, he said, “I don’t need to solve anything because however much I try I always fail in my examinations.”

When asked about the learning approaches he uses he said, “I read on my own because I don’t like being in a group”. Asked about his view on learning new things, he said “they make me nervous because of the fear of not understanding”. When asked about being flexible in his learning he said “I am actually very rigid “. Asked whether he has any hope of scoring a good grade he said, “no, I have never scored a good grade when I went in to form one up to now and so it’s not possible”. When asked about how he expects to perform in his KCSE he said, “I do not expect anything good, a score between a D and D plus is okay”.

Abel was a low level academic psychological capital respondent and he did not believe in himself. In fact, according to him, there was nothing good that he can get from the school and so he was in school as a formality waiting for the course to come to an end so that he can walk away. Asked what does his parents and teachers say about his performance he says “all of them have stopped bothering because they do not believe in me. I do not blame them because I know there is nothing I can do to improve.”

iii. High Academic Psychological Capital

Participants who scored highly on the academic psychological capital scale were categorized as having high levels of academic psychological capital. As a result, the researcher followed two participants (1 male and 1 female) so that they could give their personal opinion on their performance.

Dan: This was the first respondent who had scored highly on academic psychological capital scale. Asked about his view on the form three work, he said, “form three work is challenging but I work very hard because I have to pass.” When asked why form three work was challenging, he said, “there is a lot of content to be covered since most of the subjects have a paper one, two and three”. When asked about the optional subjects they chose in form two, he said, “I chose Chemistry and Biology with the help of my teachers and my parents” He continued to explain that “I also chose History and Geography because I have never scored less than a B since I came to form one in any of these subjects”. When asked about which grade he has been attaining in Chemistry and Biology, his answer was, “I work very hard to make sure that I score C plus and above, I also make sure that I work very hard to get the same grade in Mathematics”. When asked what he scored during the last two examinations, he said, “I worked very hard and scored a B and a C plus in both the end of the term one examinations and in the second term’s opening examinations.

When asked whether he believes in himself, his answer was, “I believe in myself so much because I know I am able to read and pass my examinations.” Asked whether he feels in charge of his work, he said “I know that getting a good grade is purely my duty and so I have always purposed to get a good grade.” His response on the question on how to handle the form three content was, “I know how to make summary notes and also I know skimming and scanning of the content that I am reading.” Asked whether he has ever had to change his mode of reading, he said, “of course yes, I am now discussing a lot with my friends so that I can understand certain subjects better.” Asked whether he needs to change his study habits, he said, “I do change my study habits depending on the kind of the subject that I am revising. For example, when reading a set book whether in English or Kiswahili, I prefer discussion.

When asked how he handles unexpected learning tasks, he said, “whenever I come across a new learning tasks, I try to read and understand it. In case I am not able to handle it, i always feel free to consult my teachers who are always willing to help”. Asked how he solves learning problems, he said, “I am always very flexible, I can always change my way of thinking in order to accommodate the views of the other colleagues”. He continued to explain and said that, “I like consulting with my colleagues before I embark on any assignment just to make sure I am on the right track”. When he was asked about the approaches he uses in achieving his learning goals, his said, “I always read ahead of my teachers which helps me to understand the content. I always make summary notes which helps me to revise well”. Asked which grade she hopes to get in KCSE she said, “I am expecting to score a B plus and above.

Betty: This was the second respondent who had scored highly on the academic psychological capital scale. Asked how form three work was generally, she said, “form three work is not easy but it requires one to work very hard in order to perform well”. Asked about the reasons she had for that answer she said, “there is the introduction of paper one, two and three in form three, this requires one to read widely and understand so as to get a good grade”. Asked about the optional subjects she chose, her response was, “I have no problem with the arts subjects, in fact I scored a B and above, in all of them, but as for the sciences, my teachers have to come to my aid”. Asked about the grades she had scored in form three, she said, “during the end of the term examinations, I scored A minus and a B plus during the second term’s opening examinations.

When asked about how she deals with unexpected learning tasks she said, “I am always ready for any new learning task because it allows me to research and as a result to read ahead of the teacher”. Asked how she deals with difficult learning tasks she said, “we have formed some

discussion groups so whenever we come across any difficulty assignments, we discuss, Sometimes, we consult our teachers”. When asked whether she has some problem solving skills, she said, “I have good communication skills and I am also creative”.

Betty was then asked her view about learning new things and she said, “I like challenges, so new things make me to read more hence improving my performance”. Asked whether she is flexible in handling learning tasks, she said, “I am always very flexible, I am able to allow my colleagues to correct me whenever I am wrong”. When asked about the grade she hopes to score during her KCSE she said, “I can’t wait to see my grades, I know I am capable of attaining a B plus and above”.

vi. Low academic engagement

Participants who scored lowly on the academic engagement scale were classified as having low level of academic engagement in this study. Two participants in this category were sampled and interviewed so as to give their personal views on their performance.

Lena: This was the first respondent who scored lowly on the academic engagement scale. When asked about the content in form three work, she said, “form three work is very hard and very demanding”. Asked about the optional subjects she chose in form three, her answer was, “I choose Chemistry and Biology because it was a must for me to choose two science subjects.” She continued to explain and said, “I have always scored between a D minus and a D plus in Chemistry and Biology and that is why I dislike them”.

When asked about her involvement in the learning tasks, she said, “I do not like doing assignments or even getting involved in group discussions”. When asked about how she deals with unexpected learning tasks, her answer was, “I am used to let the nature take its own course, I am always faced by a lot of learning tasks that I am not able to handle.” She

continued to say, “I am not able to solve most of my learning difficulties and as a result I end up performing poorly” Asked about her view on learning new things, she said, “my take is that being taught new things is a waste of time because I don’t even understand what I have learnt in form one and in form two”. She explained further and said, “I don’t think I can make anything good out of what I am being taught in form three”. When she was asked about any hope of scoring a good grade, she said, “that is a dream, I have given up in my studies because I can never improve”. Asked about the grade she intends to get in KCSE, her answer was “of course my usual D, how can I get a grade that I have never scored in my life in high school?” Asked whether she likes reading, she said, “I don’t like reading at all because it is not interesting, in addition, my Physics and Mathematics teachers have also given up on me and so I don’t care about the grades anymore.”

When asked about her involvement in the learning activities, she said, “I don’t like doing assignments because most of the times I don’t know what I am supposed to do”. Asked about which subjects she likes most, she said, “I think I liked CRE and Kiswahili when I was in form one”. Lena was then asked about what she liked about her school and she said, “there is nothing I like about this school, they treat us as prisoners, always being punished for a very small mistake”. When she was asked whether she understands the form three content, she said, “however much I try to read, I don’t understand anything, I feel like giving up”. Asked whether she is able to relate what she reads with real life experiences, her response was, “how do I relate something I do not understand, in fact I long for the end of the term examinations so that I can go home and relax”.

When asked about what she does not like about the school, she said, “I don’t like the assignments that the teachers are giving us plus the fact that we have to wake up at 4:30 am

from Monday to Friday.” When asked what kind of skills she would want to get in order to better her performance, she said “I don’t think whether I can be helped to remember what I was taught in form one and in form two and what I am being taught now for me to pass. First of all, I don’t like examinations because they cause me a lot of anxiety.”

Soi: This is the second respondent who had scored lowly on the academic engagement scale. When asked about how the form three work was, he said, “form three work is very hard”. When asked why form three work was hard, he said, “whenever I revise my notes, I do not remember anything during examination time”. He explained further and said, “this has strained my relationship with my parents because they think that I do not want to read and so paying school fees for me is a waste of their money”. When asked about how he performs in form three, he said, “I scored a D in my end of the term one exams and a D minus during the second term’s opening exams”. He was then asked whether he consults his teachers and his response was, “my teachers have given up on me, they know I cannot improve “. He was then asked why he thinks that the teachers have given up on him and he said, “whenever they ask me a question and I am not able to answer, they get mad with me and tell me that I am wasting my parent’s money.”

When asked about his involvement in learning activities, he said, “I find learning activities boring because I don’t understand whenever I read or even when the teacher is teaching.” Asked about which subjects he enjoys, his response was, “I only enjoy CRE because sometimes the topics are a repetition of what we are taught in Sunday school”. When he was asked about his performance in CRE, his response was, “I always score between D plus and C minus “. When asked whether he has interest in learning, he said, “honestly I don’t like being in school, I am here because my parents cannot allow me to look for something else to do”. Asked about what other thing he would be interested in doing, he said, “given a chance I

would go for a course in modeling, I like doing things with my own hands other than reading things that I don't understand". Asked how he would change his studies to make a more interesting activity, he said, "given a chance I would introduce things like dancing and modeling in the learning institutions".

When he was asked about his view regarding his school, he said, "I just don't like this school". Asked about why he had said so, his response was, "the rules are too many and you are expected to follow all of them". When he was asked about one of the challenging situations he has faced with his teachers, he said, "always explaining to my parents why I have failed in front of my teachers during the school academic days". Asked whether he is able to relate what he learnt in form one and in form two with what he is learning in form three, he said, "how do I relate them and I have already forgotten what I learnt in form one and two?" Asked whether he is able to relate what he is learning in form three with daily life experiences, he said, "I don't find anything that I can relate, may be it's because I have lost interest in learning".

When asked whether he can come up with his own ideas that can help him in understanding a new content, he said, "I said earlier that I don't bother to read because I cannot pass". It is worth noting that Soi had a low level of academic engagement given the statements he was making. It can be assumed therefore that, Soi was not able to participate in class discussions, he was not turning in assignments on time and also not able to follow rules and regulations concerning learning. This seemed to agree with the Engagement theory of learning by Kearsley and Shneidermann (1999), that learners who are not get involved in learning tasks are low achievers.

vi) High academic engagement

The researcher identified those participants who scored highly on the academic engagement scale and they were categorized as having high levels of academic engagement. One female and one male were sampled to be interviewed and their personal perceptions were recorded for thematic analysis.

Margy: This was the first respondent who scored highly on the academic engagement scale. She looked composed and sure of herself even when responding to the interview questions. When asked about how the form three work was, she said, “I think form three work is a bit tasking because there is the introduction of the set books for both English and Kiswahili”. She further continued and said, “one needs to manage her time carefully to avoid being caught up with time when you have not prepared”. Asked about her optional subjects she said, “I choose Chemistry and Biology as far as the sciences are concerned because from my childhood I have always wanted to become a medicine doctor”. Margy was then asked whether her teachers or the parents helped her in the selection of the optional subjects, she said, “I have always been wanting to treat people of their diseases and so I did not require anybody to choose the subjects for me”. When she was asked about her performance in form three, she said, “I scored a B in my end of term one exams and a B plus in the second term’s opening exams”. She explained further and said that, “I read, revise and consult with my teachers a lot to avoid a drop in my performance”. I also discuss with my classmates and this helps me a lot”. When she was asked about what she hopes to score during KCSE, she said, “I intend to score a B plus and above in order to join the school of medicine at the university even if it is through the parallel program.”

Margy was then asked about her involvement in learning activities and she said, “I like participating in class especially when we have answer question teaching method section and I also like group discussions”. When she was asked about the subjects she enjoys most she said, “I enjoy reading the set books so much, I also enjoy being in the laboratory for the practicals for both Chemistry and Biology”. Asked whether she generally has interest in reading, she said, “I love my books so much, I long for a good grade and so I do not have a choice”. When she was asked about what she would change in her studies to make it more satisfying she said, “I don’t think there is anything I would change, may be creating more time for some subjects like Mathematics, Chemistry and Biology”. When asked about how she viewed her school, she said, “this is one of the few schools that have affordable school fees, and our principal is so much understanding, I love this school”.

When asked about an incident that she found challenging in relation to the teachers, she said, “being punished for speaking my mother tongue is very challenging to me because most of us come from around and we all know one another so we find it hard to speak in English or Kiswahili”. When asked on whether she can relate what she is learning in form three with what she learnt in form one and two, her response was, “of course yes, there is a lot to relate”. Asked whether she is also able to relate some of the content with the real life experiences, she said, “Kiswahili fasihi and English literature is very applicable to our daily life experiences”. When she was asked whether she can come up with ideas to help her understand a new learning concept, she said, “I like using things like brain storming, being an attentive listener and having an open mind, they help me a lot “.

Rono: This was the second respondent who had scored highly on the academic engagement scale. When he was asked about the content learned in form three, he said, “the form three content is not easy like in form one and two, one requires to put a lot of effort in order to

perform”. Asked about how his performance in form three was, he said, “I scored a B plus in the end of term one examinations and a B in the second term’s opening examinations. When he was asked about the optional subjects, his response was, “I chose Chemistry and Physics because I intend to become a civil engineer.” He went further to explain that, “I have always scored a B plus and above in the two subjects and hope to score even a better grade in my KCSE”. When he was asked about who aided him in choosing the career, he said, “our school career teacher helped me a lot and also my parents had encouraged me to choose Chemistry and Physics”. When asked on how he intends to maintain such a performance, he said, “I always read over and over again to avoid a drop in my performance, I have also come up with my own personal timetable which helps me in revision”. He further added that “I have also found my group discussions to be very helpful especially when there is a lot of work”.

When asked whether he likes getting involved in learning activities, his answer was, “I enjoy when there is a learning activity that I am engaging in.” Asked whether there was something that would make him to tell his parents to transfer him to another school, he said, “if the school lacks discipline which is very key in passing of examinations then I would ask for a transfer.” He continued to explain that, “I would wish to have problem solving skills to help me improve in subjects like Mathematics, Chemistry and Physics.” When asked about his expectations even as he concentrates in learning, his answer was, “my expectations are to get a good grade that will allow me do a good course at the university and eventually secure a good job.” Finally, when asked about what aspects of his studies that stresses him, the answer was, “I have always avoided stress in my studies because it can affect my performance, I follow my timetable so that I do not find myself at the examination room when am not well prepared.”

When asked about his view about his school, he said, “I love my school very much because our teachers are very committed and the discipline is good”. Asked whether he is able to relate what he is learning in form three with what he learnt in form one and two, he said, “some of the topics we are dealing with in form three is an advancement of what we learned in form one and two especially in Mathematics so I can apply that knowledge”. When asked about whether he can also relate it with the real life experiences, he said, “there is a lot to relate especially in English literature and Kiswahili fasihi”. Asked whether he can come up with his own ideas to understand a new concept, he said, “Sometimes I have to read ahead of the teacher in order to understand a certain concept”. According to Rono’s responses, he seemed to be cognitively, socially and behaviorally involved in learning activities.

A qualitative summary of a data set of the 40 interviewed participants in relation to their academic adaptability, academic psychological capital and academic achievement was presented in the following section. The qualitative analysis of the students’ academic adaptability was presented in Table 4.72.

Table 4.72

Summary of the Qualitative Analyses of Academic Adaptability and Academic Achievement

Students’ Academic Adaptability	Girls	Boys	Total
Low academic Adaptability	12 (30)	14(35)	26(65)
High Academic Adaptability	8(20)	6(15)	14(35)
Total	18(50)	22(50)	40(100)

Note. N=40. () =percent

As shown in Table 4.72, 35 % of the boys who were found to have low academic adaptability were the majority, followed by the girls 30%. More girls were found to have high academic adaptability (20%) than the boys (15%). The findings are in accordance with the results obtained in the quantitative analysis earlier in Table 4.7 where girls were found to have the highest academic adaptability mean of 24.28 ($SD=5.42$) while the boys were found to have the least academic adaptability mean of 23.39 ($SD=5.18$) which gave the implication that more girls were performing better than the boys in the Sub-county secondary schools in Kitui County.

From the same Table 4.72, most of the respondents (65%) who were interviewed were found to have low academic adaptability while only 35% were found to have high academic adaptability. These findings agreed with the quantitative results obtained in Table 4.8 where most of the participants were found to have low (75.9 %) and moderate (22.4 %) academic adaptability levels while those who were found to have high level of academic adaptability were the least 1.7 % .

These qualitative findings which indicated that participants with low academic adaptability were the majority gave an insight of why there is a low academic achievement in the sub-county secondary schools in Kitui county and are in line with an earlier study by Birzina et al. (2019) who reported that participants who had low academic adaptability levels performed poorly in their studies compared to their counter parts who have high academic adaptability levels. The researcher then did a qualitative summary of the 40 participants on their academic psychological capital and academic achievement. The data was presented in table 4.73.

Table 4.73

Summary of the Qualitative Analyses of Academic Psychological Capital and Academic Achievement

Students' Academic Psychological capital	Girls	Boys	Total
Low Academic Psychological capital	5 (12.5)	8 (20)	13 (32.5)
Moderate Academic Psychological capital	15(37.5)	12(30)	27(67.5)
Total	20 (50)	20(50)	40 (100)

Note. $N= 40$. () =percent

As shown in Table 4.73, 20% of the total participants interviewed were boys and were found to have a low academic psychological capital levels while the girls who were found to have a low academic psychological capital levels were 12.5% of the total number of the respondents interviewed. On the other hand, girls who had moderate academic psychological capital levels were the majority at 37.5 % while the boys were 30% of the total number of the respondents interviewed. This was in line with the quantitative findings obtained earlier in Table 4.26 where girls had a higher academic psychological capital mean of 31($SD=6.30$) compared to boys who were found to have a mean of 30 ($SD=6.04$). It is also observed from the same Table 4.73 that more than half of the total number of the participants 67.5% were found to have moderate levels of academic psychological capital while only 32.5% of them were found to have low levels of academic psychological capital. In a previous study by Baluku et al. (2021), it was reported that students who did not have self- efficacy, optimism and hope were low achievers. This finding agreed with the findings in the quantitative analysis in Table 4.27 where all the participants were found to have low and moderate levels of academic psychological capital implying that they could be low achievers. This finding

could also be used to explain the problem of low academic achievement in the sub-county secondary schools in Kitui County.

The researcher went further and did a qualitative data analysis on the respondents' academic engagement and results were presented in Table 4.74.

Table 4.74

Summary of the Qualitative Analyses of Academic Engagement and Academic Achievement

Students' Academic Engagement	Girls	Boys	Total
Low Academic Engagement	10(25)	13(32.5)	23(57.5)
Moderate Academic Engagement	9 (22.5)	8(20)	17(42.5)
Total	19(47.5)	21(52.5)	40 (100)

Note. N =40. () =percent

From the statistics in Table 4.74, the total number of respondents who were found to have low levels of academic engagement were the majority 57.5% compared to those who were found to have moderate levels of academic engagement 42.5%. It is also observed from the same Table 4.74 that more boys were found to have low levels of academic engagement 32.5% compared to girls who were only 25%. At the same time more girls 22.5% were found to have moderate levels of academic engagement compared to boys who were 20%. These findings are in agreement with the earlier results obtained from the quantitative analyses earlier in Table 4.39 where more girls were found to have a high academic engagement mean of 37.85($SD=7.84$) than the boys who were found to have a mean of 36.50 ($SD= 7.49$). As shown from the same Table 4.74 there were no students with high academic engagement levels implying that this could be the reason for the low academic achievement among the form three students in the sub-county secondary schools in Kitui County.

In this study, the first objective was seeking to establish the relationship between the students' academic adaptability and academic achievement. The second objective was to establish the relationship between academic psychological capital and academic achievement and the third objective was to establish the relationship between academic engagement and academic achievement. As a result, the interviewees academic achievement T-scores were collected and averaged per study variable in order to establish if there existed a relationship between the study variables and the academic achievement. The results of this qualitative analysis were presented in Table 4.75.

Table 4.75

Academic Achievement Across the Qualitative Academic Adaptability, Academic Psychological Capital and Academic Engagement

Variable	Academic Achievement T-score
Academic Adaptability	48.60
Academic Psychological capital	54.03
Academic Engagement	42.80

As observed in Table 4.75, the highest academic achievement T-score was realized in academic psychological capital ($M=54.03$). The second academic achievement T-score was found in academic adaptability ($M=48.60$) while the least was observed in academic Engagement ($M=42.80$). The findings of this analysis were a replica of the quantitative results (see table 4.69). According to this finding in Table 4.69, academic psychological capital had the highest predictive index (0.42) followed by academic adaptability which had a predictive index of (0.17) while academic engagement had the least predictive index of

(0.13). From the quantitative findings, all the three study variables were significant predictors of academic achievement.

The researcher came up with some prominent themes from the conversations with the interviewees in relation to how academic adaptability, academic psychological capital and academic engagement predicted academic achievement. The themes brought together essential information that represents similar feedbacks within the data set.

4.6.4 Major Themes from interview Analysis

The researcher came up with the themes based on the repeated responses by the interviewees. Themes will help in giving some insights on the respondents in terms of academic adaptability, academic psychological capital and academic engagement.

a. Response to Challenges

The first theme that was prominent while analyzing the participants' responses was their response to challenges. Their responses differentiated clearly between those participants who were found to have low and high levels of academic adaptability, academic psychological and academic engagement. Those participants who endured the challenges associated with the form three content were identified from their remarks. Statements such as, "I put some more effort", "I like consulting", "I accept whenever I fail", "I like revising ahead of the teacher" were used by those students who were found to have high levels of academic adaptability, academic psychological capital and academic engagement. According to these responses, such students are able to perform in the midst of learning difficulties. These are the students who explained that they go extra mile in consulting with their teachers and even having group discussions in order to improve their performance.

Those participants who were found to have low levels of academic adaptability, academic psychological capital and academic engagement had their responses characterized by

comments like, “ I always fail”, “ I don’t bother”, “ honestly, I have given up”, “ they have given up on me”, “ I don’t like reading”. These comments depicted a group of students who have lost hope of performing better. According to these students’, failure is inevitable and there is nothing they can do about it. These students went further to explain that they even don’t get involved in group discussions for fear of being ridiculed by their colleagues. They don’t consult with their teachers because they have lost hope in them. From their conversations, it is clear that there is nothing they can do to improve their performance.

b. Adjusting to a Learning Environment

This was the second theme that emerged from the interviews. The level of academic adaptability the participants had explained how they handled their adjustment in learning environment. Those who were found to have low levels of academic adaptability seemed to have no way of handling learning tasks. These students’ made statements like, “ I am not able to change my learning strategies”, “ where do I seek the information from ?”, ‘ I am not able to control the negative emotions in me and as a result they affect me a lot”, “ I am not able to work with other people especially in a group discussion”, “ I am always nervous”. According to the Individual Adaptability theory by Ployhart and Bliese (2006) individuals who have low levels of adaptability, lack the ability to adjust or modify their behaviors in meeting different circumstances or situations. This finding can be used to explain the responses that the interviewees with low levels of academic adaptability gave. Such students are not able to adjust their learning environment in order to perform better.

On the contrary, those respondents who were found to have high levels of academic adaptability, made comments like, “I like seeking help whenever I don’t understand”, I always change my reading habits if need be”, “I read my work over and over again”, “I am able to borrow some more reading materials to complement my notes”. These statements

indicated that such students were flexible in their reading habits which helped them to perform better. The findings of this interview agreed with the findings of an earlier study by Burns et al. (2017) among graduate students, which reported that academic adaptability and academic achievement were found to have a significant association.

c. Believing in oneself

The third theme that emerged from the interviews was being able to believe in oneself. From the conversations, students who were categorized as having low levels of academic psychological capital made some statements like, “I have no confidence in whatsoever I do”, “my struggles do not bear any fruit”, “honestly I can’t perform better”, “ I do not think that I know what to do”, “ I don’t think I can understand anything”. These comments implied that such students did not believe in themselves and as a result they were not able to do anything that can help them to improve their performance. According to the Broaden-and-Build Theory by Fredrickson (1998), individuals who do not believe in themselves have decreased performance and have no likelihood of achieving one’s life goals. This finding could imply that students with low levels of academic psychological capital were under achievers and this could be used to explain the problem of low academic achievement in sub- county secondary schools in Kitui County.

On the other hand, those participants who were categorized as having high levels of academic psychological capital made some statements like, “I know I am able to pass”, “attaining a good grade is my duty”, “ I am in charge of my study habits”, “ I am able to face my teachers and consult whenever I don’t understand a particular concept”, “ I like challenges a lot because they make me read and revise a lot”. From these comments, it can be deduced that, these students are in charge of what is happening around them in terms of the learning activities. The implications of such comments is that such students are focused on their performance and that is why they are scoring grade B minus and above. Lupsa and Virga

(2020) argued that a student whose psychological capital is rated high has many ways of ensuring that they achieve their set educational goals. This explains why the students who were rated as having high academic psychological capital in this interview were able to consult with their teachers, they were able to read revision books and use any other learning habits to help them perform better.

d. Involvement in Learning Activities

This was the fourth theme that came up from the participants' responses during the interviews. The students' who were rated as having low levels of academic engagement from the interviews made some remarks like, "I do not like doing assignments", "I am not able to solve my learning problems", "I do not like reading", "learning is boring", "I do not like being in school". It was clear from the above statements that these participants did not connect with the learning activities and that is why some gave comments like, "I do not like being in school". An earlier study by Kim et al. (2019) reported that students who do not get actively involved in class or school activities exhibits inappropriate behavior that reduces their likelihood of academic success. This finding could be used to explain why students with low academic engagement could be low achievers.

Those participants who were categorized as has having high levels of academic engagement from the interview made comments like, "I enjoy Chemistry and Biology", "I love my books so much", "I love my school so much", "I expect a good grade because I work hard", " I like relating what I read with my daily experiences". These statements gave implications of students who have devoted themselves in their studies so that they can perform better". According to Martinez et al. (2019), students who were rated as having high levels of academic engagement were found to be involved in attending classes, paying attention as the teacher teaches and being an active participant when discussing with other learners. This

finding could be used in this study to explain why learners with high academic engagement perform better than their counter parts with low academic engagement.

Lastly, the findings obtained from the qualitative analysis were in conformity with the findings from the quantitative analysis obtained earlier. The aim of the qualitative analysis was to give an in depth understanding on the quantitative analysis. It emerged that when the students with low levels of academic adaptability, academic psychological capital and academic engagement were followed through the interviews, they gave implications that they cannot perform better. Majority of them agreed that they were not able to adjust to a learning environment, they didn't trust themselves and they didn't like getting involved in a learning activity. As a result, their academic achievement scores were low, while those participants who were rated as having high levels of academic adaptability, academic psychological capital and academic engagement gave an implication that they performed better. They explained that they were able to adjust their thinking and behavior to fit in a particular learning situations. They also explained that they believed that they could face any learning challenge in order to improve their performance. Therefore, their academic achievement results were high which agreed with the findings from the quantitative results.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is organized into three key sections; section one summarizes the findings of the study and their implications to the various stakeholders while the second section gives the

conclusions drawn based on the findings and the third section gives the study recommendations for policy and further research.

5.2 Summary of the Findings

The study was designed to examine academic adaptability, academic psychological capital and academic engagement as predictors of academic achievement of form three students in sub-county secondary schools in Kitui County. The study further investigated whether there were significant gender differences in students' academic adaptability, academic psychological capital and academic engagement. The study also sought to determine whether there was a significant prediction equation for academic achievement from academic adaptability, academic psychological capital and academic engagement. Qualitative analysis was performed in order to give an in depth understanding of the quantitative analysis. Finally, the study was structured by five objectives and five hypotheses.

The first objective was to find out the relationship between academic adaptability and academic achievement. There was an empirical evidence for the existence of the positive and significant relationship between academic adaptability and academic achievement. Further analysis revealed that all the three sub-scales of academic adaptability i.e behavioral, cognitive and affective adaptability were positively correlated to academic achievement. The highest correlation was found between behavioral adaptability and academic achievement followed by cognitive adaptability and academic achievement while the least correlation was found between affective adaptability and academic achievement.

Regression analysis showed that academic adaptability accounted for 44% of the variation that occurred on the students' academic achievement. One way *ANOVA* established that there was statistically significant mean difference between the sub-scales of academic adaptability. Further analysis using the Beta Coefficients of the sub-scales of academic adaptability

revealed that behavioral adaptability was the best predictor of academic achievement followed by cognitive adaptability and the least predictor was affective adaptability.

The second objective of the study was to examine the relationship between academic psychological capital and academic achievement. It was found that there was a significant and a positive relationship between the students' academic psychological capital and academic achievement. Further analysis revealed that the four sub-scales of academic psychological capital i.e. resilience, optimism, hope and self-efficacy were correlated to the students, academic achievement. The highest correlation was found between resilience and academic achievement followed by optimism and academic achievement. The third highest correlation was found between hope and academic achievement while the least correlation was found between self-efficacy and academic achievement.

Regression analysis revealed that 47% of the total variation of the students' academic achievement was explained by the sub-scales of academic psychological capital. One way *ANOVA* showed that there was a statistically significant mean differences between the four sub-scales of academic psychological capital. Beta Coefficients showed that among the four sub-scales of academic psychological capital, resilience was the best predictor of academic achievement, followed by optimism and hope. Self-efficacy was the least predictor of academic achievement. It was also revealed that resilience, optimism and hope had a positive predictive index while self-efficacy had a negative predictive index.

The third objective of the study was to find out the relationship between academic engagement and academic achievement. It was found that there was a significant and a positive relationship between academic engagement and academic achievement. Further

analysis revealed that the three sub-scales of academic engagement i.e behavioral engagement, emotional engagement and mental engagement were significantly and positively correlated to academic achievement scores. The highest correlation was found between behavioral engagement followed by emotional engagement and the least correlation was found between mental engagement and academic achievement.

Multiple regression analysis revealed that, the R value was relatively high meaning that the correlation between academic engagement and academic achievement was very strong. It was also found that 40% of the total variation of the students' academic achievement was explained by their academic engagement. *ANOVA* summary explained that there was a significant difference in the means between those participants who were found to have mental, behavioral and emotional engagement.

Further analysis revealed that emotional engagement was the best predictor of academic achievement since it was found to have the highest and positive predictive index followed by the mental engagement. On the other hand, behavioral engagement was found to have a negative predictive index. This was contrary to an earlier finding in Table 4.37 where behavioral engagement was found to have the highest correlation.

The fourth objective was to test whether there were gender differences in the students' academic adaptability, academic psychological capital and academic engagement. Girls were found to have a higher mean in academic adaptability, academic psychological capital and academic engagement than the boys. More specifically, the researcher found a significant gender differences in the sub-scales of academic adaptability, academic psychological capital and academic engagement which were all in favor of girls. It was however established that there existed no significant gender differences in the students' academic achievement.

The fifth objective was to establish a predictive weight of students' academic adaptability, academic psychological capital and academic engagement on academic achievement. It was found that the three predictor variables had a positive predictive index. Academic psychological capital was found to have the highest predictive index followed by academic adaptability while academic engagement was found to have the least predictive index. This meant that academic psychological capital was the best predictor variable of academic achievement followed by academic adaptability and the least predictor variable was academic engagement. Behavioral and cognitive sub-scales of academic adaptability were found to have positive predictive indices while affective adaptability was found to have a negative predictive index. Regarding academic psychological capital, resilience, optimism and hope were found to have positive predictive indices while self-efficacy was found to have a negative predictive index. Lastly, emotional and mental sub-scales of academic engagement were found to have positive indices while behavioral engagement was found to have a negative predictive index.

The qualitative analysis triangulated the quantitative results. It confirmed that academic adaptability, academic psychological capital and academic engagement predicted academic achievement. The highest academic achievement T-score was realized in academic psychological capital followed by academic adaptability while the lowest academic achievement T-score was realized in academic engagement.

5.3 Conclusions

The results of the first objective gave some empirical evidence of the existence of the hypothesized relationship between academic adaptability and academic achievement. Academic adaptability was found to have a significant and a positive relationship with

academic achievement. When academic adaptability was analyzed into its individual sub-scales i.e. cognitive adaptability, behavioral adaptability and affective adaptability, it was found that the three domains had a positive and significant influence on the academic achievement. This implied that academic adaptability played an important role in the students' academic achievement. Thus students should adjust to their learning environment in order to meet the needs of the changing situations in a learning environment. On the other hand, teachers and the parents should encourage the students to have the willingness and strive to adjust to their styles and approaches to learning.

The findings of the second objective showed that there was a significant and a positive relationship between academic psychological capital and academic achievement. When the four sub-scales of academic psychological capital were analyzed singly, it was found out that the highest significant relationship was between resilience and academic achievement followed by optimism and then hope. The lowest correlation was found between the sub-scale of self-efficacy and academic achievement. With regard to academic psychological capital, teachers and parents should teach the learners on the importance of these four resources that they can use to enhance their success in education. For example, students should be made aware of the fact that, when they have high levels of academic psychological capital they are most likely to become high achievers (Lupsa & Virga 2020). When learners have resilience for example, they can reach their full potential regardless of the learning background, interests or needs.

The third objective sought to establish the relationship between academic engagement and academic achievement. The results showed that, there was a significant and positive relationship between academic engagement and academic achievement. When the sub-scales

of academic engagement i.e behavioral, mental and emotional engagement were analyzed, it was revealed that behavioral engagement had the highest correlation followed by emotional engagement while the lowest correlation was found between mental engagement and academic achievement. It was important to note that students should be helped to develop this construct so that it may help them to improve in their academics. Teachers should not only focus on delivering the subject matter but should also aim at helping the students to acquire skills on academic engagement. When learners are engaged, they absorb information more easily because they are responding with their emotions, bodies and their brains. Both teachers and the parents should educate the students on the importance of improving their levels of academic engagement so as to improve their performance. At the same time, students should be taught on the importance of attending classes, listening attentively when the teacher is teaching, participating in group discussions, turning in home work in time and also following school rules and regulations.

The fourth objective showed that gender was a factor that may account for the differences in students' academic adaptability, academic psychological capital and academic engagement. This is because there were significant gender differences that were found with regard to the students' academic adaptability, academic psychological capital and academic engagement. Girls were better than boys in all the sub-scales of academic adaptability, academic psychological capital and academic engagement.

The fifth objective was to determine the predictive weight of academic achievement from academic adaptability, academic psychological capital and academic engagement. It was found that the model for the prediction of academic achievement from academic adaptability, academic psychological capital and academic engagement was statistically significant. However academic psychological capital had a higher predictive weight on academic

achievement followed by academic adaptability while academic engagement had the lowest predictive weight.

When the sub-scales of academic adaptability were tested, it was found that each had a significant predictive weight on academic achievement. However, behavioral adaptability was found to have a higher positive significant predictive weight on academic achievement followed by cognitive adaptability. This, for example may imply that when the students' levels of balancing between academic work and extra-curriculum activities are higher, their academic achievement also increases. When they are able to adjust their learning habits and strategies to prepare for an examination in paper one, two or three, again, their academic achievement may also improve. On the other hand, affective adaptability was found to have a significant negative predictive weight on academic achievement. This implied that when the students' emotions are high their academic achievement decreases and vice versa. Teachers and the parents should encourage and advice the learners on the right type of academic adaptability to acquire in order to improve their academic achievement.

The sub-scales of academic psychological capital were also tested and it was found that resilience, optimism and hope had a positive and significant predictive weight on academic achievement with resilience having the highest predictive weight on academic achievement followed by optimism and lastly hope. The implication of this finding is that when the students have high levels of these sub-scales, it led to an increase in their academic achievement. Teachers should encourage the learners to perceive a learning set back as a learning opportunity and to try attempting a difficult learning task severally without giving up. Self-efficacy however had a negative predictive index, implying that an increase in self-efficacy score led to a decrease in academic achievement score and vise-versa.

Lastly, the sub-scales of academic engagement which are; mental engagement, behavioral engagement and emotional engagement were analyzed and they were found to have a significant predictive weight on academic achievement. Emotional engagement was found to have the highest predictive weight followed by mental academic engagement. Behavioral engagement was found to have a negative predictive weight while emotional and mental engagement were found to have a positive predictive weight. Teachers should encourage the students to employ cognitive adaptability in order to improve in their academic achievement. Behavioral engagement had a negative predictive weight on academic achievement implying that an increase in the students' truancy or failure to do the assignments leads to a decrease in their academic achievement. Both parents and teachers are supposed to encourage the students to overcome some of these negative behaviors in order for them to experience an increase in their academic achievement.

5.4 Recommendations

According to the findings established from the study, the following recommendations for the policy and further research were made:

5.4.1 Policy Recommendations

- i. Now that in this study academic adaptability, academic psychological capital and academic engagement were found to have a positive and a significant influence on the students' academic achievement, teachers, parents and all the education stakeholders should work hand in hand in order to provide the right environment for fostering the development of these three constructs among the students. More precisely, the sub-scales of academic adaptability, academic psychological capital and academic engagement that were found to have a positive and significant predictive index on academic achievement should be stressed in order to enhance quality learning outcomes.

- ii. Capacity building for teachers should be introduced and enhanced in order to help them develop the necessary skills for helping the students to develop the right academic adaptability, academic psychological capital and academic engagement.
- iii. Counseling and Adaptive skills programs should be introduced in secondary schools in order to help the learners realize the right levels of academic adaptability, academic psychological capital and academic engagement.
- iv. Curriculum developers should come up with school programs which can help the learners in boosting their levels of these constructs in order to excel in their academics.
- v. Since academic psychological capital was found to be the best predictor of academic achievement, both teachers and parents should help the students to build resilience, optimism and hope which have the positive predictive index on the students' academic achievement in order to improve on their learning outcomes.
- vi. In this study, girls were found to have a high mean in academic adaptability, psychological capital and academic engagement and as a result, girls were performing better in the sub-county secondary schools than boys. Therefore, the ministry of education and teachers should help in establishing programs in schools that will help the boys to develop these constructs.

5.4.2 Recommendations for Further Research

- i. This research was done on sub-county secondary schools and in Kitui county, considering that learning experiences differ from one school category to another and also from one county to another, there is need for a replication of the study involving students in other school categories and other counties.
- ii. Since this study found out that academic adaptability, academic psychological capital and academic engagement have a positive and a significant relationship

with the students' academic achievement, there is need to carry out a further study and establish the specific factors which influence the development of these constructs.

- iii. In this study, data analysis was based on correlation and regression analysis, which established the relationships between the variables only without proving any causal link. As a result, further research may consider using experimental designs to test the actual causes of the study variables among the students.
- iv. Based on the fact that the findings of this study were from secondary school students, further research should be done to give more insight on the relationship between academic adaptability, academic psychological capital, academic engagement and academic achievement of students at the primary school level and also at the tertiary level.
- v. This study investigated the relationship between academic adaptability, academic psychological capital, academic engagement and academic achievement. Further study should investigate the relationship between these constructs and the specific subject areas like Chemistry, Physics and Mathematics.
- vi. Based on the descriptive statistics in this study, girls were found to have a higher mean in academic adaptability, academic psychological capital and academic engagement than boys. Therefore, further studies should be done in order to investigate on the possible cause and help in boosting the levels of these constructs among the boys.

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APPENDICES

Appendix A: Informed Consent

My name is Priscah Muthui, a PhD student at the school of education, department of educational psychology of Kenyatta University. I am conducting a study titled “academic adaptability, psychological capital and academic engagement as predictors of academic achievement among form three students in Kitui County. The findings of this research will help the students, teachers and education policy makers to address the issue of low academic achievement in secondary schools.

Procedures to be followed

Participation in this study will require that you answer questions about yourself on a questionnaire that will be provided. This should take between 25 to 35 minutes.

Voluntarism

You have the right to refuse participation in this study. Please remember the participation in this study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also withdraw from the study at any time without any consequences.

Participant’s statement

The above information regarding my participation in the study is clear to me. The study has been explained to me and I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time

Name of Participant: _____

Signature or Thumbprint

Date

Name of Representative

Relationship to Subject

Investigators statement

I, the undersigned, have explained to the volunteer in a language she/he understands, the procedures to be followed in the study and the risks and benefits involved

Name of Interviewer

Signature

Date

Appendix B: Questionnaire for Students

Section A: Background Information

Questionnaire code.....

1. What is your gender?

Male

Female

2. Indicate your age bracket 14 – 18 [] 19 – 25 [] 26 – above []

3. School Category.....

Section B: Academic Adaptability Questionnaire by Martin et al. (2012)

The researcher adapted this adaptability scale developed by Martin et al. (2012) to measure academic adaptability of the students. The reliability coefficient of this scale is 0.87 but the researcher carried out a pilot study to establish its reliability among secondary school students in Kenya.

Instructions

Use the following scale and tick for each statement to indicate how much you disagree or agree with each of the statements. **Strongly Disagree = 1, Disagree =2, Neutral=3, Agree=4 and Strongly Agree= 5**

	1	2	3	4	5
1. I am not able to think through a number of possible options to assist me in a new learning task					
2. I am able to revise the way I think about a new learning task to help me go through it					
3. I am able to adjust my thinking or expectations to assist me in doing my assignment					
4. I am able to seek out new information, helpful people,					

or useful resources to effectively accomplish my class assignments					
5. In uncertain learning tasks, I am able to develop new ways of going about things (eg. a different way of asking questions or finding information) to help me through					
6. To assist me in a new learning task, I am able to change the way I do things if necessary					
7. I am able to reduce negative emotions (eg. fear) to help me deal with uncertain learning tasks					
8. When uncertainty in learning arises, I am able to minimize frustration or irritation so I can deal with it best					
9. To help me through new learning tasks, I am able to draw on positive feelings and emotions (eg.self-efficacy, satisfaction)					

Section C: Psychological Capital Questionnaire by Lorenz et al. (2016)

This scale was developed by Lorenz et al. (2016) to measure psychological capital of students. The authors reported a reliability coefficient of 0.83.

Instructions

Use the following scale and tick for each statement to indicate how much you disagree or agree with each of the statements. **Strongly Disagree = 1, Disagree =2, Neutral=3, Agree=4 and strongly Agree= 5**

	1	2	3	4	5
1. I am convinced that in unexpected learning tasks I am able to cope successfully.					
2. I can stay calm in difficult learning tasks because I know I can rely on my ability to deal with them.					
3. I usually know what to do in difficult learning environment.					
4. I can consider many options for solving learning problems.					
5. I eagerly implement my ideas.					
6. I can consider many learning approaches for achieving the goals which I care about the most.					
7. I am generous to my friends.					
8. I like to learn new things that I have not learnt before					
9. People see me as a flexible person.					
10. I am always optimistic about my studies					
11. I often hope that I will score good grades					
12. Overall, I expect to perform better than the way people expect.					

Section D: Academic Engagement Questionnaire by Hart et al. (2011)

This questionnaire was developed by Hart et al. (2011) with a reliability coefficient of 0.79.

Instructions

Rate yourself on each item, on a scale from

Strongly disagree (SD) = 1 [], Disagree(D) =2 [], Agree(A) = 3 [] and Strongly agree(SA) = 4 []. Respond to the following as faithfully and sincerely as possible. Tick [√] as appropriate

Statement	1	2	3	4	5
1. I am very interested in learning					
2. I think what we are learning in school is interesting					
3. I like what I am learning in school					
4. I enjoy learning new things in class					
5. I think learning is boring					
6. I like my school					
7. I am proud to be at this school					
8. I am happy to be at this school					
9. When I study, I try to understand the material better by relating it to things I already know.					
10. When I study, I figure out how the information might be useful in the real world.					
11. When learning new information, I try to put the ideas in my own words.					
12. When I study, I try to connect what I am learning with my own experiences.					
13. I make up my own examples to help me understand the important concepts I learn from school.					
14. When learning things for school, I often try to associate them with what I learnt in other classes					

about the same or similar things.					
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Appendix C: Pro Forma Summary of Student's Examination Results

Participant's Code Number.....

Student's Academic Achievement Form 3 Examinations

Examination	Subjects							Mean Score
	1	2	3	4	5	6	7	
Mid- Term One 2023								
End of Term One 2023								

Appendix D: Interview Schedule for Student Interviewees

Part A: Interview Consent Form

I understand the purpose of this interview with M/S Priscah M Muthui is to facilitate her PhD study in Educational Psychology at Kenyatta University. I have been informed of what the interview entails and the purpose of the research. I also understand that participation is voluntary and that there are no penalties attached in case I withdraw from the interview at any stage. I have also been assured of the confidentiality in handling all the information shared and my real name will not be used when writing the report. I therefore give consent to participate.

Code Number: _____ Date _____ 2023

Part B: Semi-Structured Interview Schedule General questions

- . a) According to your own opinion, how is the content learned in form three?
 - . i) Simple
 - . ii) Very simple
 - . iii) Challenging
 - . iv) Hard
 - . v) Very Hard
- . b) Which reason has led to your answer on the above question?
- . c) Which are your optional subjects in form three?
 - d) What reasons did you have for choosing those subjects?
- . e) Were you aided by your teachers during the subjects' selection in form three?
- . f) Were your parents involved during your choice of the form three subjects?

- . Academic adaptability questions

- . a) Are you able to adjust to a changing learning environment?

- . b) Are you always willing to take a new learning task even if this increases the list of your current learning tasks?

- . c) Are you flexible in your learning approaches?

- . d) Tell me about the biggest challenge you are facing in form three?

- . e) Can you assist your fellow learners in embracing learning changes?

- . f) How do you adjust to a changing learning situation that you have no control over?

- . g) Describe a time when you had to adjust to your friends learning style?

- . Academic psychological capital questions

- . a) Why do you think you can do better in form three work?

- . b) What does feeling self assured mean to you?

- . c) How can you contribute to others feeling confident in class?

- . d) How can you transform a challenging learning experience into a positive experience?

- . e) What can you do to improve a learning situation that makes you nervous?

- . f) Which subjects do you do well?

- . g) What have you had to change and overcome in your studies in order to perform well?

. Academic Engagement Questions

- a) What subjects do you enjoy most?
- b) What would you change in your studies to making it most satisfying?
- c) What is the most challenging situation you have faced in relation to your teachers?
- d) Have you ever made a decision that did not go with your teachers, what happened and what did you learn from that?
- e) What would make you to tell your parents to get another school for you?
- f) What kind of skills would you want to acquire in order to better your performance?
- g) Which aspects of your studies cause you stress?

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS DISCUSSION.

Appendix E: Academic Engagement Questionnaire Permit

Hello, Priscah, you have our permission to use the SESQ in your research! We ask you to keep us updated if you end up publishing the study. I am attaching documents that will likely be of use!

Best of luck with your research!
Warmly,
Shelley

Shelley R. Hart, PhD, NCSP

Associate Professor | Department of Child Development | California State University, Chico

Research Associate | Department of Mental Health, Bloomberg School of Public Health | Johns Hopkins University

Chair | Publications Committee | National Association of School Psychologists

Commissioner | Juvenile Justice Delinquency Prevention Commission | Butte County

Commissioner | First Five Butte County Children and Families Commission

CARE Team Coach | Thrive Initiative | North Valley Community Foundation

Modoc 101 | (530) 898-5919 | srhart@csuchico.edu

[Google Scholar Page](#)/[ResearchGate Page](#)/[Chico State Faculty Page](#)/[NASP Publications](#)/[First Five Butte County Commission](#)/[The CARE Team](#)

Appendix F: Institution Research Authorization Letter



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E83/21385/2020

Date: 17th March, 2023

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

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR PRISCAH M. MUTHUI REG. NO. E83/21385/2020

I write to introduce Muthui who is a Postgraduate Student of this University. The student is registered for a Ph.D. degree programme in the Department of Educational Psychology in the School of Education & Lifelong Learning.

Muthui intends to conduct research for Ph.D. thesis entitled, "Academic Adaptability, Psychological Capital and Academic Engagement as Predictors of Academic Achievement among Form Three Students in Kitui County, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

A handwritten signature in black ink, appearing to be 'E. Kimani', written over a circular stamp or seal.

PROF. ELISHIBA KIMANI
EXECUTIVE DEAN, GRADUATE SCHOOL

JMO/cao

Appendix G: Research Permit

REPUBLIC OF KENYA
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **905861** Date of Issue: **05/April/2023**

RESEARCH LICENSE




This is to Certify that Ms. PRISCAH MULIKE MUTHUI of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kitui on the topic: **ACADEMIC ADAPTABILITY, PSYCHOLOGICAL CAPITAL AND ACADEMIC ENGAGEMENT AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG FORM THREE STUDENTS IN KITUI COUNTY, KENYA** for the period ending : **05/April/2024**.

License No: **NACOSTI/P/23/24728**

905861
Applicant Identification Number

W. Muthui
Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Verification QR Code



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Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix H: Map of Kitui County

