

**PSYCHOSOCIAL SUPPORT AND EDUCATIONAL ASPIRATIONS AS PREDICTORS
OF CHEMISTRY ACADEMIC ACHIEVEMENT
AMONG FORM THREE STUDENTS IN
NAROK COUNTY, KENYA**

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DECLARATION

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

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DEDICATION

This research is dedicated to my children, Faith, Felix, Philip, and Kelvin, whose presence has been a profound source of motivation and purpose. Their support, patience, and understanding have sustained me throughout the course of this work. It is with deep gratitude and admiration for their enduring encouragement that I offer this dedication.

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TABLE OF CONTENTS

TITLE PAGE.....	i
DECLARATION	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	xi
LIST OF FIGURES	xiii
ABBREVIATIONS AND ACRONYMS.....	xiv
ABSTRACT.....	xv
CHAPTER ONE: INTRODUCTION AND BACKGROUND TO THE STUDY	1
1.1 Introduction.....	1
1.2 Background to the Study.....	1
1.3 Statement of the Problem.....	7
1.4 Purpose of the Study	7
1.5 Objectives of the Study.....	8
1.6 Research Hypotheses	8
1.7 Significance of the Study	9
1.8 Limitations and Delimitations of the Study	10
1.8.1 Limitations of the Study.....	10

1.8.2 Delimitations of the Study	10
1.9 Assumptions of the Study	10
1.10 Theoretical Framework and Conceptual Framework	11
1.10.1 Theoretical Framework.....	11
1.10.2 Conceptual Framework.....	13
1.11 Operational Definition of Terms.....	14
CHAPTER TWO: REVIEW OF RELATED LITERATURE.....	15
2.1 Introduction.....	15
2.2 Relationship between Psychosocial Support and Chemistry Academic Achievement	15
2.3 Relationship between Educational Aspirations and Chemistry Achievement.....	16
2.4 Gender Variations in Psychosocial Support and Educational Aspirations on Chemistry Achievement	19
2.5 The predictive weight of Psychosocial Support and Educational Aspirations on Chemistry Achievement	21
2.6 Summary of Literature Reviewed and Gap Identification.....	23
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	24
3.1 Introduction.....	24
3.2 Research Design.....	24
3.3 Research Variables.....	24
3.4 Research Methodology	25

3.5 Location of Study.....	25
3.6 Target Population.....	26
3.7 Sampling Techniques and Sample Size	26
3.7.1 Sampling Techniques.....	26
3.7.1 Sample Size.....	27
3.8 Research Instruments	29
3.8.1 Psychosocial Support Scale (PSS).....	29
3.8.2 Educational Aspirations Scale (EAS)	29
3.8.3 Document Analysis	30
3.9 Pilot Study.....	30
3.9.1 Validity of Instruments	30
3.9.2 Reliability of Instruments	30
3.10 Data Collection Techniques.....	31
3.11 Data Analysis	32
3.12 Logistical and Ethical Considerations	33
3.12.1 Logistical Consideration	33
3.12.2 Ethical Consideration.....	33
CHAPTER FOUR: PRESENTATION OF FINDINGS, INTERPRETATION AND	
DISCUSSION	34
4.1 Introduction.....	34

4.2 General Information.....	34
4.3 Demographic Information.....	35
4.4 Relationship between Psychosocial Support and Chemistry Achievement.....	35
4.4.1 Psychosocial Support Descriptive Statistics	35
4.4.2 Chemistry Achievement Descriptive Statistics.....	44
4.4.3 Test of Hypothesis	47
4.4.4 Discussion of the Results	48
4.5 Findings on the Relationship between Educational Aspirations and Chemistry Academic Achievement	50
4.5.1 Descriptive Statistics of Educational Aspirations.....	50
4.5.2 Hypothesis Testing.....	53
4.5.3 Discussion of the Results	54
4.6 Gender Differences in Psychosocial Support and Educational Aspirations on Chemistry Academic Achievement.....	55
4.6.1 Descriptive Statistics of Gender Differences in Psychosocial Support and Educational Aspirations	55
4.6.2 Descriptive Statistics using Row Scores in examining gender variations in Psychosocial Support and Educational Aspirations on Chemistry Academic Achievement	56
4.6.3 Descriptive Statistics of gender differences using Standardized Scores in Psychosocial Support and Educational Aspirations on Chemistry Achievement.....	58
4.6.4 Hypothesis Testing.....	59

4.6.5 Discussion of Results	61
4.7 The Predictive Weight between Psychosocial Support, Educational Aspirations and Chemistry Academic Achievement	64
4.7.1 Test for Assumptions of Regression Analysis	64
4.7.2 Hypothesis Testing.....	67
4.7.3 Discussion of Results	70
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	73
5.1 Introduction.....	73
5.2 Summary of the Findings.....	73
5.3 Conclusion	76
5.4 Recommendations.....	77
5.4.1 Policy Recommendations.....	77
5.4.2 Recommendations for Further Research.....	78
REFERENCES.....	79
APPENDICES	85
Appendix A: Psychosocial Support Scale.....	85
Appendix B: Educational Aspirations Scale.....	87
Appendix C: Academic Achievement in Chemistry.....	88
Appendix D: Yamane Formula.....	89

Appendix E: Cronbach’s Alpha formula	90
Appendix F: Consent Form.....	91
Appendix G: Requests for Authorization to Use Research Instruments.....	92
Appendix H: Budget	93
Appendix I: Research Schedule	94
Appendix J: Map of Narok County.....	95
Appendix K: Research Permit	96

LIST OF TABLES

Table 1.1 Narok North Sub-County Achievement Trend (2018-2023)	06
Table 3.1 Narok County Achievement Trend (2018-2023)	26
Table 3.2 Target and Sample Percentage.....	27
Table 3.3 Sampling Distribution and Sample Size.....	28
Table 3.4 Reliability Diagnostics of the Research Instruments.....	31
Table 4.1 Return Rate of Questionnaire Issued.....	34
Table 4.2 Gender Breakdown.....	35
Table 4.3 Summary of Students Response to Statements on Psychosocial Support	36
Table 4.4 Descriptive Statistics of Psychosocial Support Scores	41
Table 4.5 Psychosocial Support Descriptive Statistics by Gender	42
Table 4.6 Psychosocial Support Descriptive Statistics by School Category	42
Table 4.7 Psychosocial Support Levels	43
Table 4.8 Chemistry Achievement Row Scores	44
Table 4.9 Chemistry Achievement Standardized Scores	44
Table 4.10 Chemistry Achievement Descriptive Statistics by Gender	45
Table 4.11 Descriptive Statistics of Chemistry Achievement by School Category.....	46
Table 4.12 Chemistry Achievement Levels.....	46

Table 4.13 Correlation between Psychosocial Support and Chemistry Academic Achievement.	47
Table 4.14 Levels of Psychosocial Support and Chemistry Mean Scores	48
Table 4.15 Discriptive Statistics of Educational Aspirations Scores.....	50
Table 4.16 Educational Aspirations Descriptive Statistics by Gender	50
Table 4.17 Educational Aspirations Descriptive Statistics Across Various Schools.....	51
Table 4.18 Educational Aspirations Levels	52
Table 4.19 Correlation between Educational Aspirations and Chemistry Achievement	53
Table 4.20 Gender Differences in Psychosocial Support and Educational Aspirations.....	56
Table 4.21 Gender Differences based on Row Scores in Psychosocial Support and Educational Aspirations	57
Table 4.22 Gender Differences in Psychosocial Support and Educational Aspirations on Chemistry Achievement.....	58
Table 4.23 Model Summary for Predicting Gender Differences.....	60
Table 4.24 Regression Coefficients of Gender Differences.....	60
Table 4.25 Assumptions of Multi-collinearity and Singularity.....	67
Table 4.26 Model Summary for Predicting Chemistry Academic Achievement.....	68
Table 4.27 Regression Coefficients.....	68

LIST OF FIGURES

Figure 1.1: The correlation between Psychosocial Support and Educational Aspirations on Chemistry Achievement	13
Figure 4.1: Scatter Plot for Observed and Expected Cumulative Probabilities	65
Figure 4.2: Scatter Plot for Testing Normality Distribution	66

ABBREVIATIONS AND ACRONYMS

ALT	Aspiration Level Theory
CEMASTE	Centre for Mathematics Sciences and Technology Education in Africa
EAS	Educational Aspirations Scale
KCSE	Kenya Certificate of Secondary Education
KICD	Kenya Institute of Curriculum Developers
KNEC	Kenya National Examination Council
MOHEST	Ministry of Higher Education, Science and Technology
PSS	Psychosocial Support Scale
PS	Psychosocial Support
STEM	Science, Technology, Engineering and Mathematics
SPSS	Statistical Package for Social Sciences

ABSTRACT

Industrial and technological development in any nation can only be attained by focusing on formal schooling and dispelling dismal academic achievement particularly in sciences. However, that has not been the case across the globe as studies have shown growing concern over consistent Chemistry academic underachievement yet Chemistry is a very critical discipline in the field of science. One of the national goals of education in Kenya is to support the industrial, technological, and socioeconomic advancements demands of the country. Unfortunately, Chemistry academic achievement has persistently remained low over the years, a scenario that has raised great concern among stakeholders as that may contribute to derailment in attaining the national goals. However, in the national examinations, Chemistry results still indicate a worrying downward trend. This study, therefore, aimed at finding out how psychosocial support and educational aspirations correlate to Chemistry academic achievement among Form Three students in public secondary schools in Narok North Sub-County, Narok County, Kenya. The research objectives included: establishing the correlation between psychosocial support and Chemistry academic achievement, finding out the correlation between educational aspirations and Chemistry academic achievement, establishing the gender differences in psychosocial support and educational aspirations on Chemistry academic achievement, and finding out the predictive weight between psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students in Narok North Sub-county. The study was anchored on Ecological Systems Theory of Human Development and Aspiration Theory. This study also employed correlational research design to obtain quantitative data and targeted a population of all the 294 Form 3 students from 24 public schools in the Sub-County. Purposive, Stratified and simple random sampling techniques were employed to obtain a sample size of 294 respondents using Yamane Formula. Data was also collected using Psychosocial Support and Educational Aspirations structured scales. Chemistry end of term one 2024 examination results accompanied the questionnaires filled by the participants. Piloting was done to determine reliability and validity of the research instruments and involved 30 students in two schools. In addition, Cronbach's Alpha was employed to establish reliability of the research instruments. Both descriptive and inferential statistics were used to conduct data analysis. Findings from the study indicate a negative and significant relationship between psychosocial support and Chemistry achievement $r(294) = -.125, p < .05$. Concerning educational aspirations, results established a non-significant correlation between educational aspirations and Chemistry achievement $r(294) = -.112, p > .05$. In establishing the gender variations in psychosocial support and educational aspirations on Chemistry achievement, the study found that psychosocial support and educational aspirations predicted Chemistry achievement greatly in male students than female students. Further in predicting the correlation between psychosocial support and educational aspirations on chemistry achievement, regression equation revealed that academic achievement was greatly predicted by communication dimension of psychosocial support and student motivation dimension of educational aspirations. From the findings of the research, it was highly suggested that parents and teachers should get involved in activities that can reinforce high psychosocial support and sustain high motivation among students. Further research was recommended in exploring ways to maintain high psychosocial support and sustaining students' motivation to ensure higher achievement among students.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This section presents a brief highlight to the introduction and background to the study and as well as the statement of the problem, study objectives and purpose of the study. In addition, the section highlights research questions, significance of the study, and explanation on limitations and delimitations. Lastly, theoretical framework, conceptual framework and also the operational definition of terms is specified.

1.2 Background to the Study

Chemistry is a discipline of science that is concerned with the characteristics of matter, form and the interaction between substances (Kinsey et al. ,2019). Chemistry is one of the oldest science disciplines and manifests itself everywhere in the world around us; in the food we eat, clothing worn, drinking water, drugs, air and cleaning detergents (Helmenstine, 2020). In addition, Chemistry as a science crucially inculcates reasoning skills and problem solving techniques (Marie, 2019). Thus, real and meaningful scientific and technological advancement of any country requires human resource that is well equipped with relevant skills and knowledge in the field of science.

However, in the recent past, studies across the globe indicate that Chemistry academic achievement trends at various levels of learning have been below expectations and that has been a cause of worry among many educational stakeholders. In USA, Harris et al. (2020) indicates that students belonging to underrepresented groups begin college with an equal level of enthusiasm for

STEM majors compared to their counterparts but withdraw from STEM fields due to challenges such as low academic attainment in general Chemistry ultimately leading to attrition or dropout. Stacey (2017) further notes that Chemistry academic achievement has constantly remained poor and is of concern to the educational stakeholders. She recommends instructions designs based on the outcomes of students that can tremendously improve chemistry academic achievement among middle and senior school students. The constant low Chemistry academic achievement has heightened the desire, with a highly dynamic environment in the various education systems across the globe, to study challenges ranging from psychosocial support, student preparedness, lack of school fees, cultural differences, and aspirations among others, that are perceived to be contributors to poor Chemistry achievement (Bellon et al., 2017; Paolo, 2020) It is by so doing that tangible solutions to Chemistry underachievement across nations can be realized. Even though a number of factors have been cited to be behind the scenario, psychosocial support and educational aspirations variables were hypothesized to immensely contribute towards Chemistry academic achievement yet they have not been sufficiently addressed directly.

Psychosocial support involves fostering resilience in individual students by honoring their autonomy, dignity and coping mechanisms within themselves or their communities. Psychosocial support encourages the reconstitution of social unity and infrastructure, building a relationship of trust and dependence (Rachel et al., 2023). It is perceived that the more psychosocial support students have, the more involved or committed and satisfied they are in not only achieving their educational goals but also their personal goals (Kisić et al., 2012).

Academic aspiration refers to the extent to which students realistically establish educational goals based on their mental and physical capabilities and align them with the surrounding environment. Therefore, Educational aspirations are visionary aspirations that mirror the desired level of

educational achievement one hopes to attain (Chen & Hesketh, 2021). According to David (2019), academic aspiration reflects directly or indirectly the personality of the students. Whatever a student has aspired, if attained, brings a greater satisfaction and confidence in them while the opposite is also true.

In USA, Swanson et al. (2021) in calculating the connection between psychosocial support, aspirations, and academic accomplishment of students throughout their initial three years in public educational institution, observed that the results of psychosocial support were reasonably indicative of academic success. Sense of belonging, academic self-efficacy, and aspirations were identified as the most influential factors in predicting both persistence and cumulative grade point scores.

In China, Huang et al. (2023) notes that vocational and academic education hold equal standing in fostering poor academic grades in Chemistry. Therefore, educators should adapt their assessment strategies, address students' factors and base their teaching exclusively on academic attainment in Chemistry. In their interactions with students, teachers should demonstrate greater understanding and engage in a more student-focused approach. In addition, Huang et al. (2023) notes that Chemistry achievement among students can be improved by directing the emphasis towards individual students' factors and environmental factors that derail academic achievement in the subject. There is need therefore to identify and address those individual students' and environmental factors behind poor Chemistry academic achievement globally and regionally.

In Philippines, Aquino et al. (2022) notes that Chemistry achievement is of concern since the achievement in the subject has remained below average in nationwide evaluations and therefore encourages Chemistry teachers to use instructional application in teaching. Similarly, school principals to consider promoting synchronous class discussions and experiments among teachers

to enhance existing approaches with the help of technology. In addition, Sanchez (2019) notes that student success in Chemistry is unimpressive and can be enhanced by taking into account elements like learning experiences, social factors, personal factors and innovative teaching.

In UK, Tayfur et al. (2022) noted that educational aspirations, substance use, and behavioral problems are not significantly associated with academic achievement. Peng and Joonyoung (2020) claim that self-efficacy partially mediates the relationship between students' performance in physical education and their perceptions of teachers' support. Further, the recognition of teachers' support in autonomy, competence, and relatedness elevates students' aspirations and motivated behaviors in the context of physical education varied with respect to the locality and the medium of instruction. In effect, varied Chemistry achievement is observed between the urban and the rural school students. Further, English and Hindi medium students achieved differently in Chemistry because of differences in cultural and social factors. Citor (2015) notes that Chemistry achievement remains a big challenge because of poor scores displayed by students in nationwide evaluations. However, proper social relations and adopting of ICT as a visual tool in teaching and giving instructions to students motivates understanding.

In India, Vadivukarasi and Gnanadevan (2022) disclosed that elevated academic achievement among students correlates with a heightened level of psychosocial adjustment in areas such as anxiety, self-confidence, social support, and social adaptation. In addition, Vadivukarasi and Gnanadevan (2022) noted that psychosocial adjustment factors are fairly correlated with the academic achievement of senior high school students. Further, Manjunath (2020) posits that children that have a higher level of educational aspiration perform better than those students that have a moderate or low level of educational aspirations.

In Nigeria, Ali et al. (2022) investigated how psychosocial factors impact students' academic performance and found that only attitude and interaction could reliably predict academic success. However, academic aspirations failed to predict academic achievement in the study. Pepple (2017) notes that all the aspirations and cultural factors are correlated to the Chemistry achievement test. In addition, it is revealed that the independent variables jointly correlate to students' achievement in Chemistry.

Within the Kenyan context, Otieno (2021) notes that, as has been observed across nations, Chemistry academic achievement has over the years registered below average scores and that the situation is quite unsettling to various educational players. The researcher observed that students' background characteristics; social and attitude factors, such as adverse assessment that Chemistry teachers have of their students' capabilities; insufficient utilization of resources during instruction, and unfavorable socio-cultural influence as well as unsuitable learning environment are perceived as being the primary factors behind the consistent low Chemistry academic achievement among students.

Margaret et al. (2020) also found noteworthy correlation between aspirations and academic performance. Further career and educational aspirations are perceived to be a real phenomenon that influences students' academic achievement. In addition, the link between academic achievement and psychosocial support is important, but very complex. Heltne et al. (2020) points out that integrated psychosocial support is a rare phenomenon among students.

Odongo et al. (2016) indicates that some of the subjects that are poorly done in Kenya include Mathematics and Chemistry implying that most candidates cannot pursue science oriented careers since the two subjects are mandatory in secondary school education in Kenya. The situation was not any different in Narok County and more specifically, Narok North sub-county. Table 1.1 below

shows the academic achievement trends in the three science subjects in Narok North Sub-County from 2018 to 2023.

Table 1.1

Narok North Sub-County Achievement Trend (2018-2023)

SUBJECT	2018	2019	2020	2021	2022	2023	Average per Subject
CHEMISTRY	2.2	2.3	2.0	2.7	1.7	1.3	2.03
PHYSICS	2.6	2.2	2.4	2.5	2.9	2.7	2.55
BIOLOGY	3.8	3.3	3.3	2.8	3.1	3.5	3.30

Source: Narok County Ministry of Education office

It is clear from the table that Chemistry has consistently recorded the lowest achievement in the national examinations in comparison to Physics and Biology over the five-year duration. This underscored the rationale of undertaking the study in Chemistry academic achievement. This study aimed at determining whether psychosocial support and educational aspirations contributed towards Chemistry academic achievement.

Psychosocial Support indicators in this study included; family based psychosocial support, communication support and social support network. On Educational Aspirations, the study focused on the student's individual factors or aspects that encompassed student's intrinsic motivation, ambitions and level of educational involvement or initiative and how they correlated to Chemistry academic achievement among Form Three students in Narok North Sub-county. Paucity of studies in Narok County on psychosocial support, educational aspirations and Chemistry academic achievement underscores the rationale of undertaking an urgent study to address impact of these variables in the sub-county.

1.3 Statement of the Problem

In Kenya, continued Chemistry academic underachievement across the country definitely undermines the attainment of the national goals of education which include promotion of social, economic, technological and industrial needs for national development, self-fulfillment, social equity and responsibility. Low Chemistry academic achievement if not checked, will in the long run contribute enormously to lack of enough manpower that is well equipped with the much needed scientific and technological knowledge and skills meant to turn Kenya to a fully industrialised nation by the year 2030 as envisioned by vision 2030. For the vision to be attained, emphasis on high quality grades or scores in science subjects, Chemistry being one of them, in secondary school education are of utmost importance. The prevalence of Chemistry underachievement as a subject within secondary schools in Narok North Sub-County has for long frustrated the hopes of many students progressing to higher institutions of learning. Though some studies have been done on various factors perceived to account for the dismal academic outcomes, most of them are on general academic achievements. It is therefore noteworthy from the foregoing discussions that the central problem to be addressed in this study was specifically the poor Chemistry academic achievement in Narok North Sub-county. Further, studies on correlation between psychosocial support and educational aspirations on Chemistry academic achievement were lacking in Narok North Sub-county. That, therefore, explained the rationale for this study for it majorly focused on establishing the correlation between psychosocial support, educational aspirations and Chemistry academic achievement among form 3 students in Narok North Sub-county.

1.4 Purpose of the Study

The purpose of the study was to establish how psychosocial support and educational aspirations predicted Chemistry academic achievement among Form 3 learners in Narok North Sub-county.

In addition, the study aimed at finding how gender differences on psychosocial support and educational aspirations affected chemistry academic achievement. Lastly, the prediction equation of the variables on chemistry academic achievement was established.

1.5 Objectives of the Study

The study had the following objectives:

- i. To find out the relationship between psychosocial support and Chemistry academic achievement among Form Three students in Narok North Sub-County in Narok County.
- ii. To ascertain the correlation between educational aspirations and Chemistry academic achievement among Form Three students in Narok North Sub-County in Narok County.
- iii. To establish the gender differences in psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students in Narok North Sub-County in Narok County.
- iv. To find out the predictive weight between psychosocial support and educational aspirations, on Chemistry academic achievement among Form Three students in Narok North Sub-County in Narok County.

1.6 Research Hypotheses

H_{a1} There was a significant correlation between psychosocial support and Chemistry academic achievement among Form Three students in Narok North Sub-County, Narok County.

H_{a2} There was a significant correlation between educational aspirations and Chemistry academic achievement among Form Three students in Narok North Sub-County, Narok County.

H_{a3} There were significant gender differences in psychosocial support and educational aspirations on academic achievement in Chemistry among Form Three students in Narok North Sub-County, Narok County.

H_{a4} There was a significant predictive weight between psychosocial support, educational aspirations and Chemistry achievement among Form Three students in Narok North Sub-County, Narok County.

1.7 Significance of the Study

The outcomes of the research are valuable to Chemistry teachers, students, teacher-training institutions, curriculum developers and educational psychologists. Chemistry teachers may find the study significant in addressing students' aspirations that personally contribute to Chemistry academic underachievement in an effort to adapting a more student-focused approach in teaching while at the same time providing the necessary psychosocial support. The results of the study may be instrumental to teacher-training institutions to prepare teachers on the extent psychosocial support, students' educational aspirations contribute to Chemistry academic achievement. In addition, the results may be useful to policy makers to purposely formulate the kind of policies that require parents to work more closely with teachers to intentionally synchronize family based psychosocial support and students' educational aspirations for improved Chemistry results. Curriculum developers like (KCID) in Kenya, may find it necessary to design more dynamic approaches that help teachers in creating an enabling environment for their students by providing psychosocial support such as fostering their dreams, decisions and educational aspirations while at the same time working in collaboration with parents. To teacher counselors, the findings may be helpful in assisting students develop high educational aspirations and elaborately deal with issues associated with psychosocial support.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations of the Study

This study utilized correlational research design whose major short coming was inability to establish causal relationship and draw conclusions among the variables but it was more effective and appropriate in determining correlations between variables. Structured questionnaires used in collecting data from the participants may have had subjective biases. However, this was mitigated by giving clear instruction in addition to requesting respondents to be honest in their responses.

1.8.2 Delimitations of the Study

The study focused on Narok County and not all students from the rest of the country hence study outcomes may not have allowed generalization beyond this point. Further, the study was based on Form Three students and therefore the research findings may not be used to effectively draw conclusions about students in the other classes. In addition, the study delimited itself to three variables; psychosocial support and educational aspirations and how they correlate to Chemistry academic achievement. It was recommended that future researchers carry out studies on variables not covered in this study

1.9 Assumptions of the Study

This research was based on the presumption that the participants provided truthful answers pertaining their social adjustment and social achievement goals. School academic departments were relied upon to issue credible scores of the participants.

1.10 Theoretical Framework and Conceptual Framework

1.10.1 Theoretical Framework

The study adopted Bronfenbrenner's Ecological Systems Theory of Human Development (1979) and Aspiration Theory developed by Lewin (1939).

Ecological Systems Theory of Human Development (ESTHD)

Ecological Systems Theory of Human Development (1979) was developed by Urie Bronfenbrenner, a Russian-American born psychologist to explore the intricate interactions and interconnections between individuals and various social and physical environments throughout the period of an adolescent's development. According to proponents of this theory, in attempting to understand a child's development, it is crucial to be aware that they operate in multiple environments and that the environment in which you are raised influences every aspect of your life. Those elements include social norms and environmental influencers such as family, school, community, culture and beliefs systems which influence a child's behavior, events and outcomes.

According to Bronfenbrenner's model some of the aspects of the theory include, microsystem here the relationship is bidirectional, the way one treats others in the ecosystem, is the way he will be treated. The other aspect is mesosystem where individuals do not operate independently but are interconnected with one another, and influence each other. Exosystem is another aspect in which a person is not actively involved as a participant but still gets affected. Finally, the Macrosystem involves cultural, economic and political environments in which one lives and can affect one positively or negatively.

For a child to develop holistically; emotionally, socially and intellectually, the proponents of the theory emphasize the need of the child to enjoy the involvement of at least one or more adults in their care and also do joint activities with that child. This implies that a supportive environment

can foster children's psychosocial support. Therefore, this theory was applied in the study because psychosocial support is a predictor variable in the study. Liu et al. (2022) tested this theory and noted that social support correlates to Chemistry academic achievement, that students with higher psychosocial support have a better Chemistry academic achievement. This theory provided a framework of predicting the correlation between psychosocial support and students' achievement in Chemistry with those with a higher psychosocial support hypothesized to do well and vice versa.

Aspiration Level Theory (ALT)

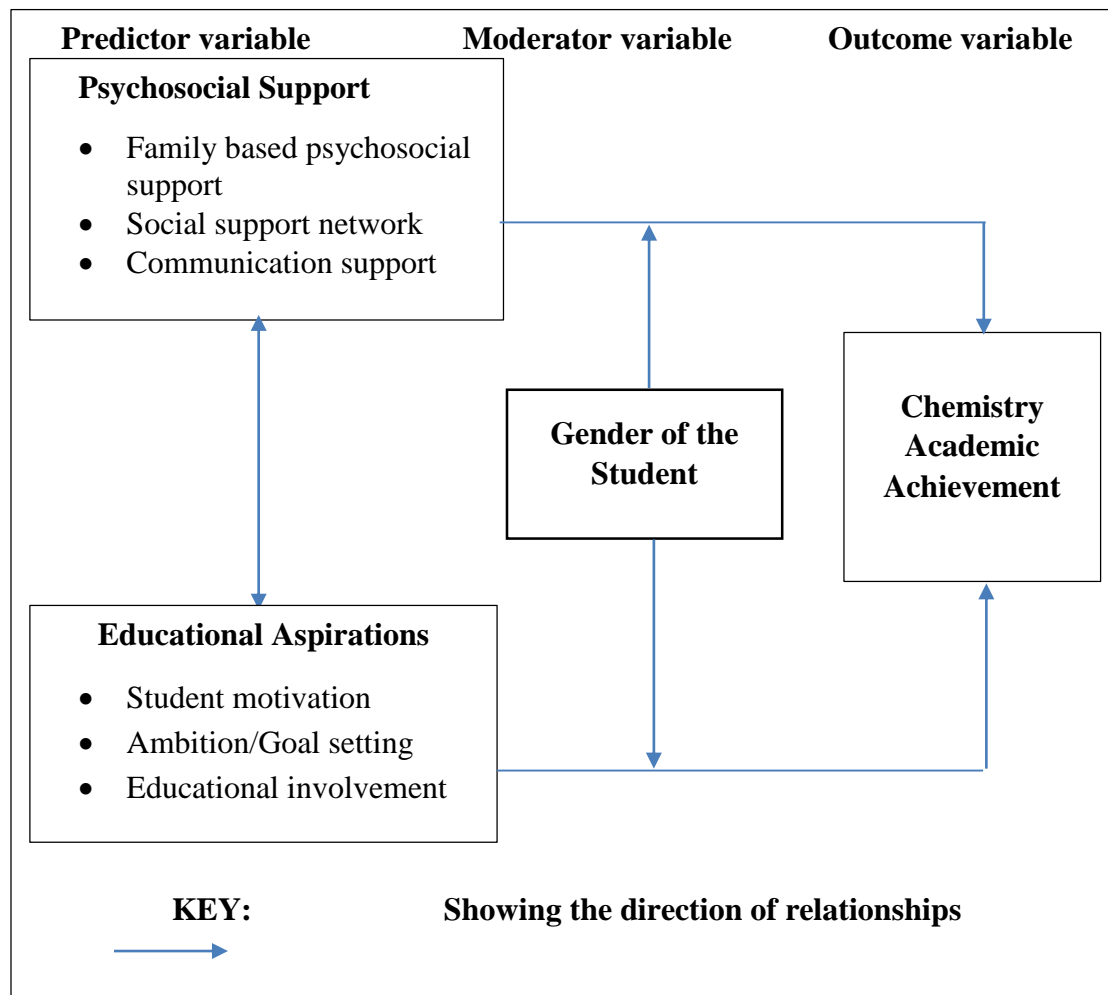
Lewin (1939) asserts that a person's aspiration level is influenced by their social comparison with others, prior accomplishments, and judgment of their current skills. It stands for striking a balance between an individual's goals for upcoming assignments and their prior performance. According to the aspirations theory's proponents, people typically set difficult yet attainable goals.

Educational aspiration was a predictor variable in this study hence the application of this theory in the study. Kumar (2020) noted that the level of aspiration of an individual is an important motivating factor which involves the feeling of failure or success. Stutzer and Henne (2014) tested this model and results indicated that educational aspirations depend on divergent goals laid. According to Imran (2018), good Chemistry achievement is displayed by students who have set educational aspirations. Hence, this theory served as a framework for predicting the connection between students' academic aspirations and their Chemistry academic achievements whereby students with solid educational aspirations were hypothesized to do well and vice versa.

1.10.2 Conceptual Framework

Figure 1.1

The correlation between Psychosocial Support and Educational Aspirations on Chemistry Achievement.



Source: Researcher (2023)

This study was conceptualized as shown in figure 1.1. It was presumed that achievement in Chemistry was predicted by two psychological concepts of psychosocial support and educational aspirations. Chemistry achievement can be considered to be high or low and this was the outcome variable under study. Psychosocial support was indicated by Family psychosocial support, Social support network and Communication support whereas educational aspirations indicated by motivation, ambition and educational

involvement were the predictor variables. The moderator variable was gender. Psychosocial support and educational aspirations were perceived to contribute significantly to Chemistry academic achievement.

1.11 Operational Definition of Terms

Aspirations:	The dreams or hopes of students to achieve personal life goals. They help in giving a sense of purpose and direction in their lives.
Ambitions:	A students' strong desire to achieve high Chemistry academic goals
Chemistry Academic Achievement:	The overall mean score attained by students in national or end of year Chemistry examinations.
Communication Support:	Helping children to express their needs freely and effectively as well as sharing relevant information between teachers and parents.
Educational Aspirations:	The extent to which individual students set goals on the basis of their mental abilities and physical attributes.
Educational involvement:	This is the students' engagement in academic activities.
Family Based Psychosocial Support:	The mental, emotional and social support children get from family members
Psychosocial Support:	The help students get to meet their mental, emotional and social needs.
Social Support Network:	The people in a student's life that can help him achieve his personal and academic goals. They include peers, family members and teachers.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This section dealt with review of literature related to psychosocial support, educational aspirations, gender variations in psychosocial support and educational aspirations on Chemistry academic achievement and a review of the predictive weight of psychosocial support, educational aspirations and Chemistry achievement. Finally, the summary of the literature reviewed is highlighted at the end.

2.2 Relationship between Psychosocial Support and Chemistry Academic Achievement

Liu et al. (2022) in China explored the impact of psychosocial factors on academic performance of Chinese students using a correlational research design. The study involved 186 Chinese students involved in outbound exchange and mobility. Results indicated that psychosocial factors positively influenced the academic achievement of the students of exchange and mobility programmes. However, the research reviewed was based on general academic performance while this study focused on Chemistry achievement.

In Australia, Richard et al., (2022) carried a study on psychosocial factors associated with academic performance among university students. Ex post facto research design was used to analyse 36 articles out of 1657 with a focus on investigating the correlation between psychological and social variables and academic attainment. The findings indicated that performance was often correlated with social support. The reviewed study focused on university students' general academic performance while the current study was on Chemistry academic achievement of Form

Three students and applied correlational research design that was explicit in giving relationships between variables.

In Nigeria, Eya et al. (2020) also conducted a research on socio-psychological factors as aspects associated with students' performance in Chemistry with implications for science and engineering education. The study adopted correlational research design whereby statistical data were acquired from a group of 100 participants of Senior Secondary 2 Chemistry students from 5 secondary schools. Results demonstrated a noteworthy correlation between socio-psychological factors such as motivation and Chemistry academic achievement of students. The reviewed study used small sample size of 100 students that does not guarantee generalization while this study used a larger sample size that guaranteed generalisation to a large population.

In Kenya, Ngina and Cecilia (2023) explored the connection between perceived psychosocial support and school adjustment. Correlational research design was utilised in the research and statistical data obtained from 362 learners who were selected randomly from a pool of 12 schools. From the outcomes of the study, a positive association between students' perceived psychosocial support and school adjustment was found ($r(347) = .32, p \leq .05$). The study reviewed focused on school adjustment of form one students and recommended creation of positive relationships and conducive school environment for proper adjustment, this study was based on the impact of psychosocial support on Chemistry academic achievement of Form Three students.

2.3 Relationship between Educational Aspirations and Chemistry Achievement

In China, a study by Chen et al. (2023) which adopted correlational research design and 606 students involved (Mean age=14.85 years; 50% boys) was to find out the impact of individual, peer, and family factors on the educational ambitions of adolescents in Rural China. From the

results, it was revealed that individual factors exerted significant direct impacts on the educational aspirations. Moreover, parent and peer attachments were notably associated with educational aspirations through the mediation of individual factors. However, the study reviewed focused on adolescents' educational aspirations in general and in China while the present study focused on academic aspirations of students taking Chemistry in Narok County, Kenya.

In UK, a study was carried by Wong (2016) using exploratory research design and data was collected from 46 interviews involving students in the United Kingdom aged 11-14. Findings indicated that students with intermediate levels of proficiency in science exhibit some aspirations, interest, and capital in the field, accompanied by average grades in science. Furthermore, students classified as extrinsically motivated in science attain high levels of achievement in the subject, possess some scientific capital, but lack aspirations and interest in science. However, the study reviewed focused on science participation in exploratory research design that does not give relations between variables whilst the current study was focused on Chemistry academic achievement by using correlational research design that was explicit in giving relationship between variables.

In Italy, a study was also carried out by Bozzato (2020) who utilized a correlational research design to investigate the correlation between children's aspiration profiles and self-efficacy, life satisfaction, and academic achievement of 456 Italian students aged 8–13. Results indicated a significant relationship between children's personal aspirations and academic achievement. However, a major methodological shortcoming in this study was pointed out: convenience was used in sampling the participants thus limiting sample representativeness of the population. Additionally, the study focused on academic achievement of primary school students at a lower developmental stage. Hence, the proposed study aligned itself to Chemistry academic achievement

of Form Three students at a higher developmental stage that experienced adolescence and employed simple random sampling in recruiting participants for the study.

In South Africa, Wilson and Reddy (2021) too conducted research on the predictors of mathematics achievement considering both school and individual factors: The mediating role of learner aspirations. The research employed a correlational research design and gathered data from a sample of 12,514 students participating in the mathematics studies. From the findings, it was observed that there was a positive correlation between mathematics achievement and self-efficacy, learner aspiration, and school resources. Furthermore, the educational aspirations of learners served as a mediating factor in the relationship between positive self-efficacy, a positive school climate, and academic achievement. The study reviewed here focused on Mathematics achievement with aspirations playing a mediating role. On the other hand, this study was limited to educational aspirations as a predictor of Chemistry academic achievement.

In Kenya, Narkiso (2015) delved into the interrelationship between self-efficacy, delinquency, and aspirations in influencing the academic success of children attending rehabilitation schools with particular focus on the case of Kabete Rehabilitation School. This study adopted analytical research design and collected data from a sample size of 85 students who were registered in the institution. The findings revealed that a majority of the children within the institution, accounting for 60%, exhibited elevated levels of aspiration while 40% demonstrated lower levels of aspiration. The study reviewed here focused on analytical research design that is subject to biases and involved a small sample size that did not guarantee generalization. Thus, this study involved a larger sample size that guaranteed generalization while utilizing correlational research design that predicted the relationship between variables.

2.4 Gender Variations in Psychosocial Support and Educational Aspirations on Chemistry Achievement

In USA, Tiffany and Hunter (2021) investigated the variations between genders regarding psychosocial factors influencing sexual activity and HIV testing. They employed descriptive research design and collected data from a sample comprising 581 youths aged 13–24 who were part of the study. From the research, it was determined that psychosocial variables and depression predicted gender differences in sexual activities. However, the study reviewed here focused on sexual activity and applied descriptive research designs that did not predict relations between variables but this research was based on Chemistry achievement while applying correlational research design that predicted the relationship between the variables.

In China, Xiaodi et al. (2023) conducted research examining how psychosocial factors impact the educational aspirations of adolescents. The study adopted a survey research design and collected data from a sample size of 720 students from 13 to 16 years. The study's findings showed that teenagers' aspirations for school were significantly impacted by psychological variables, gender factors, and other people's expectations. The study reviewed focused on survey research design that may have subjective biases and in educational aspirations as the outcome variable. However, this study was based on educational aspiration as a predictor variable while applying correlational research design that was explicit in establishing relations between variables.

In Australia, Jiesi et al. (2017) investigated the expansion of expectancy-value theory predictions regarding achievement and aspirations in the field of science. Survey research methodology was employed and data was gathered from a group of 16 eighth-grade students across all countries involved in the study. Researcher found gender variations in psychosocial factors interacted with student' self-concept to predict aspirations in science. The study reviewed focused on survey

research design that may have had subjective biases and on aspirations in science. On the other hand, this study was limited to educational aspirations while applying correlational research design that clearly defined relations between variables.

In Cameroon, Alemnge and Anuapelenjem (2020) investigated gender disparities in achievement in Chemistry within the English-speaking subsystem of education in Cameroon. A qualitative case study approach was utilized to examine a cohort of 42,766 candidates who sat for Chemistry exams between 2012 and 2016. Additionally, twenty students and eight teachers were purposively interviewed. The researchers found out that gender, social factors and academic aspirations were strongly associated with Chemistry achievement. The study reviewed focused on qualitative case study research method that was prone to biases and on students' social factors but this study was based on psychosocial support while adopting correlational research design that clearly predicted relationship between variables.

In Kenya, Mwangi (2021) explored on how psychosocial support affected the emotional wellbeing of youth due to parental absence in Mbeere South Constituency, Embu County. This study used a sample size of 72 youths aged 12 years to 24 years. Correlational research design was employed and questionnaires were adopted in collecting data from 72 youths in Mbeere South Constituency. From the study, it was observed that there existed a negative correlation between the psychosocial support, aspirations and emotional well-being. The study reviewed here, focused on a small sample size of 72 youths that did not guarantee generalization and on emotional well-being. However, this study was based on Chemistry achievement with a sample size of 294 that guaranteed generalisation to a larger population.

2.5 The predictive weight of Psychosocial Support and Educational Aspirations on Chemistry Achievement

In USA, Elise et al. (2021) investigated the association between psychosocial factors, aspirations, and academic achievements in higher education by employing a survey research design. Data was collected from 36,000 university students. Findings revealed that psychosocial factors moderately predict academic outcomes, with a strong emphasis on the predictive nature of a sense of belonging, academic self-efficacy, and aspirations which were found to be most influential on both cumulative grade point average and resilience. The study reviewed here focused on general academic outcomes and on survey research design that is prone to biases. On the other hand, this study was based on Chemistry academic achievement and on correlational research design that explicitly gave the relationship between the variables.

Yulong et al. (2022) investigated the connection between Chinese college students' goal-pursuit and social support in China. Descriptive and correlational research designs were used in the study. Information was gathered from 424 students from different Hangzhou colleges and universities. Findings revealed a notable positive association between social support, beliefs in a just world, and aspirations among Chinese college students. The study reviewed here focused on Chinese college students while this study was based on Form Three students at a different developmental stage, adolescence.

In Italy, Paolo (2020) explored the connection between children's aspiration profiles, self-efficacy, social support, and academic achievement. The study employed a thematic research design and utilized cluster analysis to examine a sample of 456 students aged between 10 and 14 years. Results indicated that academic achievement was significantly impacted by three profiles: aspiration profiles, self-efficacy, and social support. However, the study reviewed here focused on thematic

cluster research design that was time consuming, as well as employing convenience in sample selection of the participants thus limited generalisation of the findings. This study was based on correlational research design that precisely predicted the relationship between the variables while utilising simple random sampling for fair representation and generalisation.

In Nigeria, Jimoh (2018) assessed the influence of educational aspirations on the vocational choices of female secondary school students by adopting descriptive research of the survey type. A total of 200 students were chosen using a random sampling technique for participation in the study. The researcher observed that social support significantly impacts the educational aspirations and vocational choices of female students. However, it is worth noting that the study reviewed primarily concentrated on vocational choices and utilized survey research design which may be susceptible to subjective biases. This research focused on Chemistry academic achievement while applying correlational research design that was explicit in predicting relationship between variables.

In Kenya, Bellon et al. (2017) conducted research on the significance of psychosocial support and aspirations in academic performance. The study utilized a longitudinal study research design and gathered data from a sample of 1,549 children who participated in the national standardized examination in Kenya. Results from the study indicated that monitoring, aspirations, and parental social support are crucial components of parental leadership, exerting a direct and positive impact on children's academic achievement. However, the studies reviewed focused on longitudinal and ex- post facto research designs which may be prone to biases. This study employed correlational research design because it was more elaborate in giving relationships between variables.

2.6 Summary of Literature Reviewed and Gap Identification

The literature review suggests that psychosocial support and educational aspirations are key factors perceived to significantly influence academic achievement in Chemistry. However, it is worth noting that there were significant disparities in academic achievement in Chemistry that were not exhaustively attributed to psychosocial support and educational aspirations. In psychosocial support and Chemistry achievement, most studies were based on general academic achievement with relatively lower sample sizes. However, this study focused on Chemistry academic achievement while using a larger sample size.

In educational aspirations and chemistry academic achievement, most studies reviewed here were based on achievement in other subjects other than Chemistry. Further, in gender variations in psychosocial support and educational aspirations on chemistry achievement, most studies reviewed were not done on correlational research design hence, correlation between variables could not be determined. On the relationship between psychosocial support and educational aspirations on chemistry academic achievement, there was scarcity of studies on psychosocial support and educational aspirations in Chemistry achievement in Narok North Sub-County. In addition, most studies were done on other subjects other than in Chemistry academic achievement. Therefore, this study sought to fill the gaps by establishing relations between variables.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In this chapter, research design, research variables, location of the study, target population, sampling techniques and sample size were described. In addition, research instruments, pilot study, validity and reliability of instruments and data collection techniques were discussed. Finally, data analysis methods, ethical and logistical considerations were articulated.

3.2 Research Design

The study utilized a correlational research design as it was deemed more effective in predicting relationships between two or more variables. Thus the design was more appropriate in predicting the relationship between psychosocial support, educational aspiration and Chemistry academic achievement. A predictive model was also generated between the variables. This generally involved answering questions about the variables and determining the correlation between predictor variables (psychosocial support and educational aspirations) and the outcome variable (Chemistry academic achievement) based on the collected data (Pritha, 2021).

3.3 Research Variables

Chemistry academic achievement was the outcome variable while psychosocial support and educational aspirations were the predictor variables. These variables were assessed at the interval levels. Gender, serving as the moderating variable, was measured at the ordinal level.

3.4 Research Methodology

Broadly, the study was quantitative in nature, utilizing a correlational research design to explore the relationships between variables without manipulating them. Statistical data was obtained by use of questionnaires. The study entailed collecting, analyzing and interpreting data based on the predictor and outcome variables (McCombes, 2022).

3.5 Location of Study

The study was conducted within Narok County whose neighboring counties include Nakutru to the north, Kericho to the south, Nyamira and Kisii to the west and Kajiado to the East. Narok North Sub-county was selected for this study because most schools in the sub-county had consistently registered below average results in Chemistry in the Kenya Certificate of Secondary Education (KCSE) over years. Further, there was paucity of studies in psychosocial support and educational aspirations as predictors of Chemistry academic achievement in Narok North Sub-county. Narok North Sub-County County had 24 government owned secondary schools of various categories; co-educational institutions, boys' and girls' secondary schools. Narok North Sub-County registered a lower mean performance compared to other Sub-Counties and this informed the rationale behind sampling the locale.

The table 3.1 shows Chemistry academic achievement trend in terms of mean scores in 3 sampled Sub-counties in Narok County.

Table 3.1

Narok County Achievement Trend (2018-2023)

Sub-County	2018	2019	2020	2021	2022	2023	Average per Subject
Narok North	2.2	2.3	2.0	2.7	1.7	1.3	2.03
Narok West	2.7	2.3	2.5	2.6	3.0	2.8	2.65
Narok South	3.9	3.4	3.4	2.9	3.2	3.6	3.40

Source: Narok County Ministry of Education office

3.6 Target Population

This study aimed to target a population comprising all the 2929 Form Three students attending the 24 public secondary schools in Narok North Sub-County. The Form Three students were sampled because at this level, unlike their counterparts in the lower classes, they were expected to have been exposed to the Chemistry syllabus more adequately hence had a deeper perspective of the subject. Student who wished to pursue science oriented courses were expected to have chosen Chemistry as one of the science disciplines and were thus expected to provide more reliable information. Also, they were not as busy as the Form Fours who were preparing for the national examinations.

3.7 Sampling Techniques and Sample Size

3.7.1 Sampling Techniques

This study employed purposive, stratified and simple random sampling techniques in selecting the schools and the students that were involved in the study. Narok North Sub-County public schools and Form Three students were purposively sampled. Purposive sampling involved using a set criterion in sampling which in this case was the dismal results in Chemistry as shown in table 3.1. Stratified sampling technique was used to segment the 24 public secondary schools in Narok North Sub-County into boys, girls and co-educational schools. Within each subgroup, simple random

sampling was used to select 7 schools that were involved in the study. Finally, in each school category, numbers were allotted and selected randomly from a basket to select participants and prevent biases (Cash et al., 2022).

Table 3.2 indicates the summary of the target population, sample size and percentage proportion.

Table 3.2

Target and Sample Percentage

Category	Population	Sample Size	Percentage (%)
Narok North Sub- County schools (public schools)	24	7	30
Number of Form Three Students	2929	294	10

Table 3.2 presents an overview of the target population, the sample size, and the percentage proportion of the sample size to the target population. Singh and Masuku (2014) recommends that the proportion of the sample size should be at least between 10 to 30 percent of the target population.

3.7.1 Sample Size

There were 24 public secondary schools in Narok North Sub-county out of which 7 were selected for this study. A simplified formula developed by Yamane (1967) was used to come up with a truly represented sample size of 294 students as shown below.

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

Formula key, n= sample size, N = is the population size, e = is the level of precision,

Since the population proportion was definite, N = 2929 and e = 0.05. Therefore, the sample size was approximated to be 294 students.

$$n = \frac{2929}{1+2929(0.05^2)} = 294$$

To determine the participants in the study simple random sampling technique that gives equal sampling chances was used. Numbers were allocated and picked randomly from a basket in the 7 schools sampled in Narok North Sub-County. Table 3.3 gives the sampling summary.

Table 3.3

Sampling Distribution and Sample Size Frame

Type of schools	Population		Sample size			
	Schools	No. of students		Schools sampled	Sampled Students	
		Boys	Girls		Boys	Girls
Boys' boarding	1	371	-	1	42	-
Girls boarding	3	-	1015	1	-	42
Co-educational	20	851	692	5	105	105
Sub-total		1222	1707	7	147	147
		41,7 %	58.3%	7(30%)		
Total	24 (100%)	2929 (100%)			Sample of 294 (10%)	

Source: Researcher 2023

Note. No - Means number

The Table shows the respondents breakdown based on school stratification in Narok North Sub-County. This indicates how a sample size of 294 participants representing 10% of the target population was sampled from the diverse categories of schools that exist in the Sub-County. According to Iddagoda (2017), a sample size of between 10-30% is recommended. Also, the number of schools per each category was given making a total of 7 schools that participated in the study.

3.8 Research Instruments

Psychosocial Support Scale (PSS) and Educational Aspiration Scale (EAS) questionnaires were adapted and they were issued to sampled Form 3 students. Permission to use the instruments was sort and granted. In addition, the instruments were employed to collect statistics at interval scale of measurement. Dully filled questionnaires were accompanied by 2024 end of Term One Chemistry examinations marks of the participants that were obtained from the academic departments of the sampled schools. The marks were standardized by determining the T-scores to enable comparison of the results between participants and the schools.

3.8.1 Psychosocial Support Scale (PSS)

A Psycho-social support scale developed by Padhy et al. (2022) was adapted. The scale was measured at a five point Likert scale and entailed 22 items with answer options of: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree. These items were modified to suit form 3 students in Narok North Sub-county (see appendix A). Reverse scoring was as follows 1=5, 2=4, 3=3, 4=2, 5=1. Items 1, 2 and 4 were on Social support network, items 5, 6, 7 and 9 were on Family based psychosocial support, items 13, 15 and 17 were on Communication support, items 3, 18, 19, 20 and 22 were on Supportful disposition, items 8, 11, 16 and 21 were on Psychological support deprivation while items 10, 12 and 14 were on Psychosocial support availability. However, all the 22 items were on Psycho-social support.

3.8.2 Educational Aspirations Scale (EAS)

A scale developed by Gregor and O'Brien (2015) was adapted. This scale had 9 items and involved answer options of; 0 = Not at all true of me, to 4 = Very true of me given it is a 4 point Likert scale. The items were modified to suit Form 3 students in Narok North Sub-County. In reverse

score items the responses were changed in the following way: 0=4, 1=3, 2=2, 3=1, 4=0. Higher scores indicated higher aspirations.

3.8.3 Document Analysis

Chemistry academic achievement analysis was based on Chemistry academic achievement scores obtained from academic departments and 2024. Chemistry end of Term I exam results were presented in pro forma summary (see appendix C).

3.9 Pilot Study

Pilot study involved a total of 30 randomly selected students from two secondary schools in Narok South Sub-County. According to Iddagonda (2017), the pilot size of 1%-10% of the sample size is recommended. Piloting results were not included in the analysis of the results of the study. According to Middleton (2020) piloting was done to enhance reliability of research instruments and content validity.

3.9.1 Validity of Instruments

Validity was the extent in which conclusions, concepts, or measurements was in line with the phenomenon being investigated. Validity of the instruments was achieved through piloting, reading of the research instruments by both my psychology peers and supervisor to improve items. This also ensured that face and content validity of the scales was attained. Construct validity was established by confirmatory factor analysis (Heale, 2015).

3.9.2 Reliability of Instruments

The reliability of the instruments was assessed using Cronbach's Alpha technique that was more consistent in determining reliability of research instruments as detailed in Appendix E.

Table 3.4 indicates the reliability diagnostics of the research instruments applied.

Table 3.4*The Reliability Diagnostics of the Research Instruments*

Scale	No. Items	Cronbach's alpha (Authors)	Cronbach's alpha (Pilot)
Psychosocial Support	22	.74	.88
Educational Aspiration	9	.89	.76

Table 3.4 indicates the generation of Cronbach's alpha (α) for psychosocial support and educational aspirations giving the reliability of the research scales. From the outcomes, the reliability coefficient for psychosocial support was .74 while the reliability for educational aspirations was .89. Taber (2018) recommends a reliability coefficient of 0.7 and more. Since the Cronbach alpha values above are slightly higher than .7, then, the scales were reliable in measuring psychosocial support and educational aspirations. In addition, reliability was enhanced by giving clear instructions to the participants and scrutinizing piloting (Heale, 2015).

3.10 Data Collection Techniques

Data collection took a duration of two weeks whereby data was collected using structured questionnaires that were issued to respondents who were allowed approximately 30 minutes to give responses. Chemistry achievement scores for students were obtained from relevant departments based on the results of 2024 end of Term One Chemistry exams using students' scorecards. During data collection, participants were accorded voluntary participation, confidentiality and anonymity. Consent forms were issued and signed by the participants.

3.11 Data Analysis

The statistical data obtained were prepared by editing to ensure accuracy, completeness and uniformity. SPSS program version 30 was used to organize and code data. Descriptive statistics such as means, percentages, graphs, range, standard deviation, minimum and maximum values and inferential statistics such as Pearson product moment correlation coefficient and multiple regression were generated. The following null hypotheses were subjected to testing;

H₀₁ There is no significant correlation between psychosocial support and academic achievement in Chemistry among Form Three students in Narok County. Pearson Correlation Coefficient was utilized as it explicitly evaluated the relationship between predictor and outcome variables.

H₀₂ There is no significant correlation between educational aspirations and academic achievement in Chemistry among Form Three students in Narok County. Pearson correlation coefficient was employed as it predicted the relationship between two variables.

H₀₃ There are no significant gender differences in psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students in Narok County. Regression analysis was used since it was more suitable in establishing whether there are significant differences between variables.

H₀₄ There is no significant predictive weight between psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students in Narok County. Multiple regression analysis was employed as it elucidated the relationship among multiple variables.

3.12 Logistical and Ethical Considerations

3.12.1 Logistical Consideration

A letter of introduction was acquired from the Graduate School of Kenyatta University which was then utilized to obtain a research permit from the Ministry of Higher Education, Science and Technology (MOHEST). Thereafter, the researcher visited Narok North Sub-County education office and highlighted to them the purpose of the study and sort permission to visit the schools selected for study. The Principals of the sampled schools were notified to ensure harmony was attained.

3.12.2 Ethical Consideration

The research fully explained to the teachers the purpose of the study and assured them of confidentiality after taking them through the questionnaires. With the help of teachers, F3 students were gathered and the reason for study was clearly explained to them while at the same time making them aware that participation was voluntary. Consent forms to that effect were issued. This was in order for the respondents to affirm free engagement in the study (see appendix F). They were also informed that the information they were to provide was confidential in that, no unauthorized person was to access it and that it would be used for this study only. Random participants were picked and issued with consent forms and questionnaires while at the same time they were assured of anonymity by not writing their names on the questionnaires.

CHAPTER FOUR

PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

The chapter indicates the results of the study that consists interpretation of the data collected from the students and discussion of the study outcomes.

4.2 General Information

Table 4.1 indicates the return rate of the questionnaires used.

Table 4.1

Return Rate of research instruments adapted

Institution Type	QI	QR	RR (%)
Boys boarding schools	42	42	100
Girls boarding schools	42	42	100
Co-educational institutions	210	210	100
Total	294	294	100

Note. QI- no. of questionnaires presented to the respondents; QR- no. of questionnaires recovered from the respondents; RR- the return rate as a percentage.

Table 4.1 indicates that the research was conducted in three categories of schools. The questionnaires were allocated to the respondents by the researcher and a researcher helper. A sum total of 294 questionnaires were presented to the respondents and the same 294 questionnaires were collected back indicating a return rate of 100%. 42 questionnaires administered were received from boys' boarding schools, 42 questionnaires issued to girls' boarding schools were returned and that translated to a return rate of 100%. Equally the same return rate was noted for boys' boarding schools and co-educational institutions. Further, cumulatively, the questionnaire return rate was 100% and this is above the minimum value of 80% recommended by Meng-Jia et al.

(2022). Further the analysis of the questionnaires showed that all questionnaires were completely filled.

4.3 Demographic Information

The demographic statistics obtained from the respondents included the gender and the school type. Breakdown of participants' gender is presented in Table 4.2.

Table 4.2

Gender Breakdown

Gender	Rate	Percentage (%)
Male students	147	50
Female students	147	50.
Total	294	100.0

According to Table 4.2, 147 students, or 50% of the students who took part in the study, were boys, and 147 students, or 50% of the students were girls. These represent the cumulative questionnaires that were appropriately filled and presented to different genders of the students. The results tabulated indicate that female and male students that completely filled and returned questionnaires were equal.

4.4 Relationship between Psychosocial Support and Chemistry Achievement

The section presents descriptive statistics of psychosocial support in relation to students' Chemistry achievement, the hypothesis evaluation and discussion of the outcomes is also given.

4.4.1 Psychosocial Support Descriptive Statistics

Table 4.3 presents psychosocial support descriptive statistics.

Table 4.3

Summary of Students' Responses to the Statements on Psychosocial Support

Item	Response					Mean	Std Dev
	SA	A	U	D	SD		
1. I believe I will remain close to my friends for a long time.	85 (28.9)	68 (23.1)	45 (15.3)	60 (20.4)	36 (12.2)	3.36	1.399
2. I can go to my friends when I need advice.	78 (26.5)	61 (20.7)	72 (24.5)	46 (15.6)	37 (12.6)	4.06	1.048
3. I help others without expecting anything In return.	175 (59.5)	77 (26.2)	26 (8.8)	11 (3.7)	5 (1.7)	4.38	0.919
4. I have long lasting friendships.	78 (26.5)	61 (20.7)	72 (24.5)	46 (15.6)	37 (12.6)	3.33	1.351
5. My parents/family members support my decisions.	159 (54.1)	62 (21.1)	43 (14.6)	19 (6.5)	11 (3.7)	4.15	1.124
6. My parents/family members understand my needs.	168 (57.1)	87 (29.6)	25 (8.5)	10 (3.4)	4 (1.4)	4.38	0.880
7. I am encouraged by my friends and family to follow my dreams.	157 (53.4)	72 (24.5)	28 (9.5)	21 (7.1)	16 (5.4)	4.13	1.180
*8. I don't have friends to spend time with.	27 (9.2)	29 (9.9)	46 (15.6)	92 (31.3)	100 (34.0)	2.29	1.280
9. My parents give me pocket money.	144 (49.0)	96 (32.7)	22 (7.5)	12 (4.1)	20 (6.8)	4.13	1.152
10. There is someone to accompany me when I need them.	97 (33.0)	110 (37.4)	47 (16.0)	20 (6.8)	20 (6.8)	3.83	1.162
*11. I feel lonely even in the presence of friends and family.	22 (7.5)	29 (9.9)	30 (10.2)	86 (29.3)	127 (43.2)	2.09	1.265
12. There are people to listen to me when I need to talk.	114 (38.8)	116 (39.5)	37 (12.6)	16 (5.4)	11 (3.7)	4.04	1.034
13. My loved ones celebrate my achievements.	153 (52.0)	80 (27.2)	39 (13.3)	12 (4.1)	10 (3.4)	4.20	1.041
14. When I feel lonely several people come forward to be with me.	82 (27.9)	97 (33.0)	51 (17.3)	35 (11.9)	29 (9.9)	3.57	1.280
15. I express appreciation to others help.	145 (49.3)	94 (32.0)	44 (15.0)	5 (1.7)	6 (2.0)	4.25	0.914
*16. There is no one I feel comfortable to discuss my personal problems.	47 (16.0)	26 (8.8)	34 (11.6)	81 (27.6)	106 (36.1)	2.41	1.451
17. There are several people whose company I enjoy.	122 (41.5)	101 (34.4)	44 (15.0)	13 (4.4)	14 (4.8)	4.03	1.083
18. I provide support as long as one needs.	124 (42.2)	112 (38.1)	30 (10.2)	12 (4.1)	16 (5.4)	4.07	1.084
19. Once I start supporting others I continue giving support.	109 (37.1)	118 (40.1)	41 (13.9)	19 (6.5)	7 (2.4)	4.03	0.993
20. I provide help to others if someone needs.	139 (47.3)	108 (36.7)	31 (10.5)	5 (1.7)	11 (3.7)	4.22	0.968

*21. I help people to get something in return.	27 (9.2)	24 (8.2)	23 (7.8)	74 (25.2)	146 (49.7)	2.02	1.317
22. I help others without any expectations.	146 (49.7)	88 (29.9)	24 (8.2)	17 (5.8)	19 (6.5)	4.11	1.177

Note. Percentages are indicated by the figures in brackets

The respondents in this study generated responses on twenty-two statements as presented in table 4.3. Four statements indicated by the asterisks were stated negatively framed while 18 statements were stated positively framed. Regarding the positive statements, 28.9% of the respondents were strongly in agreement that they will remain close to their friends for a long time, 23.1% just agreed while 15.3% were undecided. Only 12.2% of the participants robustly disagreed whereas 20.4% generally disagreed. Furthermore, the study's mean score and standard deviation were ($M = 3.36$, $SD = 1.399$), suggesting that the majority of the students who took part were certain they would stay close to their friends for a very long time.

A total of 78 students (26.5%) strongly agreed that they can go to friends when they need advice 20.7% agreed, 24.5% were undecided, 15.6% disagreed as opposed to 12.6% that greatly disagreed with this statement. Concerning the statement that the respondents help others without expecting anything in return, 59.5% of the students strongly agreed, 26.2% agreed, 8.8% were undecided, 3.7% disagreed with this while 1.7% robustly disagreed with the assertion. The results indicate that majority of the students are confident that they help others without expecting anything in return.

Asked whether they have a long lasting friendship, 26.5% greatly agreed, 20.7% agreed, 24.5% were undecided, 15.6% disagreed and 12.6% strongly disagreed. Hence, this pointed that majority of the students were undecided whether they have a long lasting friendships. In addition, the responses on the statement that the participant's parents'/family members support their decisions, indicated that 54.1% of the respondents strongly agreed, 21.1% agreed, 14.6% were undecided,

6.5% disagreed and 3.7% strongly disagreed and this implied that majority of the students were confident that their parents/family members support their decisions.

Concerning the statement that parents/family members understand their needs, 57.1% of the students strongly agreed with the assertion, 29.6% agreed, 8.5% were undecided, 3.4% disagreed while 1.4 % strongly disagreed. Furthermore, the mean score and standard deviation were ($M = 4.38$, $SD = 0.880$) meaning that a majority of the students generally agreed that their parents/family members understand their needs. On the statement that students are encouraged by their friends and family to follow their dreams, 53.4% strongly agreed, 24.5% agreed, 9.5% were undecided, 7.1% clearly disagreed whereas 5.4% greatly disagreed.

Concerning the statement that their parents give them pocket money, 49.0% strongly agreed with this statement, 32.7 % agreed, 7.5% were undecided, 4.1% disagreed and 6.8% strongly disagreed. On the statement that there is always someone to accompany them when a need arises, 33.0% robustly agreed, 37.4% agreed, 16.0% were undecided, 6.8% disagreed while 6.8% greatly disagreed. Further, the mean score and standard deviation were ($M = 3.83$, $SD = 1.162$) indicating generally that students were accompanied when they needed to. Asked whether there are people to listen to them when they need to talk, 38.8% strongly agreed, 39.5% agreed, 12.6% were undecided, 5.4% disagreed and 3.7% strongly disagreed. However, the mean score and standard deviation were ($M = 4.04$, $SD = 1.034$) indicating most students were confident that there are people to listen to them when they need to talk.

Further, 52.0% of the respondents were in a strong agreement that their loved ones celebrate their achievements, 27.2% agreed while 13.3% were undecided. Only 3.4% of the participants robustly disagreed whereas 4.1% generally disagreed. Moreover, the mean score and a standard deviation was ($M = 4.20$, $SD = 1.041$), implying that most students that were engaged in the study were confident that their loved ones celebrated their achievements. In addition, a total of 82 students (27.9%) strongly agreed that when they feel lonely several people come forward to be with them, 33.0% agreed, 17.3% were undecided, 11.9% generally disagreed whereas 9.9% greatly disagreed with the assertion. The mean score and standard deviation was ($M = 3.57$, $SD = 1.280$) suggesting that most of the students were confident that when they feel lonely several people come forward to be with them.

Concerning the statement that students express appreciation to others' help, 49.3% of the students strongly agreed, 32.0% agreed, 15.0% were undecided, 1.7% disagreed with this while 2.0% greatly disagreed with the statement. In addition, the mean score and standard deviation were ($M = 4.25$, $SD = 0.914$). However, results indicated that majority of the students are confident that they express appreciation to others help. Questioned whether there are people whose company they enjoy, 41.5% strongly agreed, 34.4% agreed, 15.0% were undecided, 4.4% disagreed and 4.8% strongly disagreed. Further, the mean score and standard deviation were ($M = 4.03$, $SD = 1.083$), implying that a high number of students were confident that they have several people whose company they enjoy.

Asked whether they provide support as long as one needs it, 42.2% strongly agreed, 38.1% agreed, 10.2% were undecided, 4.1% disagreed and 5.4% strongly disagreed. However, the mean score and standard deviation were ($M = 4.07$, $SD = 1.084$) further indicating that a greater number of

students were confident that they provide support as long as one needs. The responses on the statement that once students start supporting others they continue giving support, it was indicated that 37.1% of the respondents strongly agreed, 40.1% agreed, 13.9% were undecided, 6.5% disagreed and 2.4% strongly disagreed. In addition, the mean score and standard deviation was ($M = 4.03$, $SD = 0.993$) suggesting that generally majority of the students were confident that once they start supporting others they continue giving the support.

Concerning the statement that students provide help to others if someone needs it, 47.3% robustly agreed that it happens, 36.7% agreed, 10.5% were undecided, 1.7% clearly disagreed while 3.7% strongly disagreed. Further, the mean score and standard deviation were ($M = 4.22$, $SD = 0.968$) pointing that majority of the students generally agreed that they provide help to others that need it. On the statement that students help others without any expectations, 49.7% greatly agreed, 29.9% agreed, 8.2% were undecided, 5.8% disagreed while 6.5% robustly disagreed. Furthermore, the mean score and standard deviation were ($M = 4.11$, $SD = 1.177$) indicating that majority of the learners were confident that they help others without any expectations.

On the negative statements, 9.2% of the students indicated that they don't have friends to spend time with, 9.9% agreed, 15.6% were undecided, 31.3% disagreed while 34.0% strongly disagreed. Hence, the results indicated that majority of the respondents did not believe that they don't have friends to spend time with. Further, 7.5% of the participants strongly affirmed that they feel lonely even in the presence of friends and family, 9.9% agreed, 10.2% were undecided, 29.3% disagreed while 43.2% strongly disagreed. The results indicated that majority of the respondents did not believe that they feel lonely even in the presence of friends and family.

On the statement that, there is no one students feel comfortable to discuss their personal problems with, 16.0% strongly agreed, 8.8% agreed, 11.6% were undecided, 27.6% disagreed while 36.1% strongly disagreed. This implied that majority of the respondents did not agree with the assertion that there is no one they feel comfortable to discuss their personal problems with. On the other hand, 9.2% of the students strongly agreed that they help people to get something in return, 8.2% agreed, 7.8% were undecided, 25.2% disagreed while 49.7% strongly agreed implying that most students were not confident that they help people to get something in return.

Table 4.4 presents the descriptive statistics for psychosocial support.

Table 4.4

Descriptive Statistics of Psychosocial Support Scores

	<i>N</i>	Min	Max	Range	Mean	<i>SD</i>	<i>Sk</i>	<i>Kur</i>
Psychosocial Support	294	58	110	52	87.48	9.407	-.252	.026

In Table 4.4, it was revealed that the highest psychosocial support score and the lowest psychosocial support score are 110 and 58 respectively implying that the range between the values was 52. Psychosocial support mean score and standard deviation were $M = 87.48$, $SD = 9.407$). The skewness and kurtosis coefficients were -.252 and .026 indicating a near normal distribution of the scores.

Further, psychosocial support scores were examined as per the various genders of the participants as indicated in Table 4.5.

Table 4.5*Psychosocial Support Descriptive Statistics by Gender*

Gender of			Std.					
Students	N	Mean	Deviation	Min.	Max.	Range	Skewness	Kurtosis
Male	147	89.10	9.479	63	110	47	-.359	.173
Female	147	85.85	9.078	58	108	50	-.207	.039
Total	294	87.48	9.407	58	110	52	-.252	.026

Findings in table 4.5 indicates that the lowest score for the male participants was 63 while the highest score was 110. The average score and standard deviation were ($M = 89.10$, $SD = 9.479$). Pertaining the female students, the lowest score for psychosocial support was 58 while the highest score was 108. The psychosocial support mean score and standard deviation for the female students were ($M = 85.85$, $SD = 9.078$). Implying that male students recorded the highest maximum and greatest minimum psychosocial support scores and therefore they had a better psychosocial support than their female counterparts.

The descriptive statistics of psychosocial support scores by the school category are indicated in Table 4.6.

Table 4.6*Psychosocial Support Descriptive Statistics by School Category*

Type of school	Mean	N	Std. Dev.	Kurtosis	Skewness	Min.	Max.	Range
Boys Boarding Schools	92.95	42	7.929	-.241	-.326	74	108	34
Girls Boarding Schools	84.57	42	7.184	-.231	.165	72	101	29
Co-Educational Institutions	86.96	210	9.675	.091	-.302	58	110	52
Total	63.99	294	5.928	.803	.129	58	110	52

The results in Table 4.6 indicates that boys boarding institutions had an average score and standard deviation of ($M = 92.95$, $SD = 7.929$) while that of girls boarding schools was ($M = 84.57$, $SD = 7.184$) whereas that of co-educational institutions was ($M = 86.96$, $SD = 9.675$). Maximum psychosocial support score for male boarding schools and female boarding schools was 108 and 101 respectively and that of co-educational institutions was 110. Minimum psychosocial support score was 74 for male boarding, 72 female boarding schools and 58 for co-educational institutions. These statistics show that psychosocial support was relatable to the school types with boys' boarding schools having the highest average psychosocial support score while co-educational institutions had a higher average psychosocial support score than girls' boarding schools. However, generally co-educational institutions seemed to have a higher overall psychosocial support score than boys and girls boarding schools.

The researcher further categorized psychosocial support according to the aspects presented in Table 4.7.

Table 4.7

Psychosocial Support Levels

Level	Mean	N
Family based	82.10	198
Social support network	78.10	42
Communication	79.71	54
Total	79.97	294

From the Table 4.7, it is revealed that family based social support is the most prevalent and with the highest mean score of 82.10, whereas communication and social network psychosocial supports had average means of 79.71 and 78.10 respectively. Further, the outcomes indicated that

majority of the respondents experienced family based social support as opposed to communication and social network psychosocial support.

4.4.2 Chemistry Achievement Descriptive Statistics

Table 4.8 shows the descriptive statistics of Chemistry achievement raw scores.

Table 4.8

Chemistry Achievement Raw Scores

	N	Range	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Raw scores of								
Chemistry Achievement	294	34	28	62	50.92	12.434	-1.069	-.553

Table 4.8 indicates the Chemistry achievement raw scores. The mean scores and standard deviation were ($M = 50.92$, $SD = 12.434$). However, the minimum raw score was 28 and the maximum raw score was 62 giving a range of 34. The skewness and kurtosis coefficients were -1.069 and -.553 meaning that the distribution was nearly normal.

Standardized Chemistry scores descriptive statistics are as presented in Table 4.9

Table 4.9

Chemistry Achievement Standardized Scores

	N	Range	Minimum	Maximum	Mean	SD	Sk	Kur
Standardized scores of								
Chemistry academic achievements	294	27.34	31.57	58.91	50	10	-1.069	-.553

Outcomes from Table 4.9 indicates that the mean score and standard deviation were ($M = 50$, $SD = 10$). In addition, the greatest score was 58.91 while the least score was 31.57 giving a range of 27.34. Further, the skewness coefficient was -1.069 while the kurtosis was -.553. This meant that the distribution was nearly normal.

Chemistry achievement scores were further categorized based on gender in Table 4.10.

Table 4.10

Chemistry Achievement Descriptive Statistics based on Gender

Gender of students	Mean	N	Std. Dev.	Min.	Max.	Range	Kur.	Sk.
Male	49.7155	147	9.71631	31.57	58.91	27.34	-.449	-1.123
Female	50.2845	147	10.30123	31.57	58.91	27.34	-.621	-1.043
Total	50.0000	294	10.00000	31.57	58.91	27.34	-.553	-1.069

From Table 4.10 it can be indicated that female participants and male participants were 147. For male respondents, the mean score and standard deviation were ($M = 49.7155$, $SD = 9.71631$), whereas for female participants, they were ($M = 50.2845$, $SD = 10.30123$). For both male and female students, the lowest possible score was 31.57, while the highest possible score was 58.91.

Based on the average score per gender, results indicated that female students performed better than their male counterparts in Chemistry despite the fact that the minimum and maximum scores were consistent across the genders.

The researcher further analyzed Chemistry achievement by school category, the outcomes are indicated in Table 4.11.

Table 4.11*Descriptive Statistics of Chemistry Achievement by School Category*

School Type	Mean	N	Std. Devi.	Min.	Max.	Sk.	Kur.	Range
Boys Boarding Schools	55.6953	42	.00000	55.70	55.70	-	-	.00
Girls Boarding Schools	58.1080	42	.00000	58.11	58.11	-	-	.00
Co-Educational Institutions	47.2393	210	10.62094	31.57	58.91	-.571	-1.406	27.34
Total	50.0000	294	10.00000	31.57	58.91	-.553	-1.069	27.34

Results in Table 4.11 shows that the mean score and standard deviation for boys' boarding schools were (M = 55.6953, SD = 0.00000). Additionally, the average score for coeducational and boarding schools for girls was 47.2393 and 58.1080, respectively. The outcomes indicated that girls' boarding schools performed better in Chemistry than both boys' boarding schools and co-educational institutions.

The results in Chemistry achievement are further categorized into levels presented in the Table 4.12.

Table 4.12*Chemistry Achievement Levels*

Levels	Frequency	Percent
Low	67	22.8
Moderate	187	63.6
High	40	13.6
Total	294	100.00

From statistics in Table 4.12, a greater percentage of the respondents in the study, about 86.4% cumulatively had moderate to low scores in Chemistry achievement. Only 40 respondents representing 13.6% of the participants had a higher score in Chemistry academic achievement implying that a larger number of the respondents are average students in Chemistry achievement and a significant number performs poorly in the subject.

4.4.3 Test of Hypothesis

In finding if the relationship between psychosocial support and Chemistry achievement was significant, the hypothesis that follows was evaluated.

H₀₁ There is no significant correlation between psychosocial support and Chemistry achievement.

Pearson correlation coefficient was employed in examining the hypothesis and outcomes are indicated in Table 4.13.

Table 4.13

Correlation between Psychosocial Support and Chemistry Academic Achievement

		Chemistry Achievement
	Pearson Correlation	-.125*
Psychosocial Support	Sig. (2-tailed)	.032
	N	294

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

The researcher hypothesized that there was no significant correlation between psychosocial support and Chemistry achievement. However, the analysis of study outcomes through determining the Pearson correlation indicated a negative and significant correlation between the variables of psychosocial support and Chemistry achievement $r(294) = -.125, p < .032$. Therefore, the null hypothesis was rejected. Implying that psychosocial support and Chemistry achievement

had some sort of an inverse relationship. This meant that those students achieving highly in Chemistry may not be experiencing higher psychosocial support than those who are performing poorly in Chemistry learning area.

Table 4.14

Levels of Psychosocial Support and Chemistry Mean Scores

Level of Psychosocial Support	N	Chemistry Mean	SD
Family Based	198	28.73	3.788
Social Support Network	42	51.94	6.469
Communication	54	54.67	2.698

From the findings given in Table 4.14, Chemistry mean score and standard deviation were $M = 28.73$, $SD = 3.788$ for students who received family-based psychosocial support and $M = 51.94$, $SD = 6.469$ for students who had active social support networks.

Further, communication dimension of psychosocial support attracted an average score and standard deviation of ($M = 54.67$, $SD = 2.698$) among students. This implied that the communication support resulted to higher achievement in Chemistry among students and family based psychosocial support had a smallest effect on Chemistry academic achievement among students.

4.4.4 Discussion of the Results

This study found out a significant negative correlation between psychosocial support and Chemistry academic achievement. This suggests that those students that achieve highly in Chemistry may not necessarily have a higher psychosocial support and further those students that

perform poorly may not necessarily have lower psychosocial support as well. The findings support what other researchers established in past studies carried in this area. Liu et al. (2022) found that psychosocial factors such as personality, the presence of social support influenced the academic achievement of the students' of exchange and mobility programs. Implying that psychosocial support is a significant predictor of academic achievement.

Richard et al. (2022) found out that psychosocial support had a significant impact on Chemistry academic achievement. The study involved high school students in public secondary schools taking Chemistry subject. Data from the students were then collected in form of questionnaires and then analyzed. The outcomes from the research indicated that psychosocial support was correlated positively with Chemistry academic achievement of high school students, implying the higher the perceived psychosocial support the higher the Chemistry academic achievement. The study further identifies psychosocial support as a stronger predictor of student's achievements in Chemistry.

Consistent findings have also been reported in Africa. In Nogeria, Eya et al. (2020) found that there is a significant relationship between psychosocial support and students' academic performance in chemistry. The study also found that self-regulation, attitude and motivation affected psychosocial support. Similarly, in Kenya, a survey by Mwandike & Kaluyu (2018) reported that very high science anxiety, very high parental involvement and very high teacher preparedness were associated with psychosocial support and consequently led to increased learners' performance in science subjects.

However, contrary findings to this study were arrived at by Dixson et al. (2020) where great hope and academic self-efficacy were found not to be linked to psychosocial support.

4.5 Findings on the Relationship between Educational Aspirations and Chemistry

Academic Achievement

In the second objective, the study sought to find the relationship between educational aspirations and Chemistry achievement among students.

4.5.1 Descriptive Statistics of Educational Aspirations

Table 4.15

Descriptive Statistics of Educational Aspirations Scores

	<i>N</i>	Min	Max	Range	Mean	<i>SD</i>	<i>Sk</i>	<i>Kur</i>
Educational Aspirations	294	20	100	80	82.47	14.958	-1.424	2.814

In Table 4.15, it was revealed that the highest educational aspirations score and the lowest educational aspirations score were 100 and 20 respectively meaning the range was 80. Educational aspirations mean score and standard deviation were $M = 82.47$, $SD = 14.958$). The skewness and kurtosis coefficients were -1.424 and 2.814 respectively indicating negatively skewed demand curve thus, a large percentage of the respondents were those with a high educational aspiration.

Furthermore, educational aspirations scores were examined as per the various genders of students as indicated in Table 4.16

Table 4.16

Educational Aspirations Descriptive Statistics by Gender

Gender of students	Mean	<i>N</i>	Std. Devi.	Min.	Max.	Range	<i>Sk.</i>	<i>Kur.</i>
Male	82.37	147	15.605	20	100	80	-1.537	2.970
Female	82.57	147	14.335	22	100	78	-1.282	2.641
Total	82.47	294	14.958	20	100	80	-1.424	2.814

Outcomes in table 4.16 indicate that the minimum score for the male respondents was 20 while the maximum score was 100. The average score and standard deviation for male students were ($M = 82.37, SD = 15.605$). However, for female students the least score in educational aspirations was 22 while the highest score was 100. The educational aspirations average score and standard deviation for female students were ($M = 82.57, SD = 14.335$). Implying that females had a higher value when comparing lower educational aspirations scores and collectively had higher educational aspirations than their male counterparts.

The descriptive statistics of educational aspirations scores based on school category are indicated in Table 4.17.

Table 4.17

Educational Aspirations Descriptive Statistics across Various Schools

School Type	Mean	N	Std. Devi.	Min.	Max.	Range	Skewness	Kurtosis
Boys Boarding Schools	80.63	42	14.808	20	100	80	-1.741	5.635
Girls Boarding Schools	77.62	42	15.570	22	100	78	-1.573	4.125
Co-Educational Institutions	83.81	210	14.693	27	100	73	-1.396	2.267
Total	82.47	294	14.958	20	100	80	-1.424	2.814

Study findings in Table 4.17 indicate that boys boarding institutions had educational aspirations average mean score and standard deviation of ($M = 80.63, SD = 14.808$), girls boarding schools had a mean score and standard deviation of ($M = 77.62, SD = 15.570$) while that of co-educational institutions was ($M = 83.81, SD = 14.693$). The highest educational aspiration score for male boarding schools, female boarding schools and co-educational institutions was 100. However, the

lowest educational aspirations score was 20 for boys' boarding schools, 22 for girls' boarding schools and 27 for co-educational institutions. These statistics indicate that educational aspirations were varied across different types of schools with co-educational institutions having the highest educational aspirations score and girls' boarding schools having the lowest educational aspirations score. Boys' boarding schools had a moderate educational aspirations compared to both girls' schools and co-educational institutions.

The researcher further categorized educational aspirations according to levels tabulated in Table 4.18.

Table 4.18

Educational Aspirations Levels

Level	N	Mean	Percentage of Students
Student motivation	108	85.4422	36.7
Ambition/Goal setting	104	80.3741	35.4
Educational involvement	64	81.2925	21.8
Total	276	80.25	93.9

Findings from the Table 4.18 indicate that most respondents 36.7% were motivated in Chemistry as compared to 35.4% that had an ambitions/goals in their Chemistry subject and 21.8 that demonstrated higher educational involvement. Further 108 had a greater motivation and cumulatively had the highest mean score of 85.4422 while 64 participants were greatly involved in education and cumulatively had a mean score of 81.2925. However, 104 participants had an ambition/goal and cumulatively had a mean score of 80.3741. These statistics imply that majority of the respondents were motivated in Chemistry learning area.

4.5.2 Hypothesis Testing

In determining the presence of any significant correlation between educational aspirations and Chemistry achievement, a hypothesis was generated as indicated.

H₀₂ There is non-significant correlation between educational aspirations and Chemistry academic achievement.

Pearson's correlation was used to evaluate the relation and outcomes are presented in Table 4.19.

Table 4.19

Correlation between Educational Aspirations and Chemistry Achievement

		Students' Academic Achievement
Education Aspirations Level	N	294
	Pearson Correlation	-.112
	Sig. (2-tailed)	.055
Student motivation	Pearson Correlation	-.068
	Sig. (2-tailed)	.248
	N	294
Ambition/Goal setting	Pearson Correlation	-.082
	Sig. (2-tailed)	.161
	N	294
Educational involvement	Pearson Correlation	-.118*
	Sig. (2-tailed)	.043
	N	294

The researcher hypothesized that there is no significance correlation between the educational aspirations and Chemistry achievement. These variables were evaluated using Pearson correlation

coefficient and results revealed that there was no significant correlation that was found between student motivation and Chemistry academic achievement or ambition/goal setting and Chemistry academic achievement. However, there was a significant correlation between educational involvement and Chemistry academic achievement but, cumulatively educational aspirations did not have a significant correlation with Chemistry academic achievement therefore, the null hypothesis is accepted ($r(294) = -.112, p > .05$). This implies that educational aspirations do not have a significant influence on the Chemistry achievement among students.

4.5.3 Discussion of the Results

As per second objective, the results suggested that educational aspirations had no significant correlation with Chemistry achievement but on the contrary, there was a significant correlation between educational involvement dimension of educational aspirations and Chemistry achievement. Implying generally that, participants having a low or high educational aspirations did not have any significant effect on Chemistry academic achievement.

A study by Bozzato (2020) that investigated the correlation between children's aspiration profiles and self-efficacy, life satisfaction and academic achievement was in concurrence with the current study findings. Also a non-significant relationship between the educational aspirations and academic achievement is explained by the assertion of Rahim (2004).

Contrary with the present study findings is the findings by Wong (2016) in an analysis of minority ethnic students and science participation where the findings pointed that students with intermediate levels of proficiency in science exhibit some aspirations, interest, and capital in the field, accompanied by average grades in science. Therefore, there was a significant correlation between educational aspirations and academic achievement. Outcomes of this study are contrary to the findings of a survey by Ansong et al. (2018) in Ghana. A significant correlation was determined

between educational aspirations and academic achievement. In particular, increase in academic self-efficacy indirectly accounts for improvement in academic performance through the mediational role of educational aspirations.

In Kenya, a contrary significant relationship between educational aspirations and academic achievement is established in the study by Narkiso (2015). In the study, the relationship between self-efficacy, delinquency, and aspirations and their influence to the academic success of children attending Kabete Rehabilitation School was examined. It was established that a majority of the students in the rehabilitation institution amounting to closer to 60% portrayed elevated levels of aspirations whereas about 40% demonstrated lower levels of aspirations. The findings indicated a significant correlation was between educational aspirations and academic success of students in the rehabilitation institution.

4.6 Gender Differences in Psychosocial Support and Educational Aspirations on Chemistry Academic Achievement.

The third objective of the research sought to investigate the gender differences in psychosocial support and educational aspirations on Chemistry achievement among the Form Three students.

4.6.1 Descriptive Statistics of Gender Differences in Psychosocial Support and Educational Aspirations

Table 4.20 indicates the descriptive outcomes of gender variations in psychosocial support and educational aspirations.

Table 4.20*Gender Differences in Psychosocial Support and Educational Aspirations*

Gender of students		Psychosocial Support Score	Educational Aspirations Score
Male	Mean	51.73	49.9343
	N	147	147
	Std. Deviation	10.076	10.43232
Female	Mean	48.27	50.0657
	N	147	147
	Std. Deviation	9.651	9.58347
Total	Mean	50.0000	50.0000
	N	294	294
	Std. Deviation	10.00000	10.00000

Findings in Table 4.20 indicate that a total of 147 girls and 147 boys participated in the study as respondents. Further, male students had a mean score and standard deviation of ($M = 51.73$, $SD = 10.076$) in psychosocial support and a mean score standard deviation of ($M = 49.9343$, $SD = 10.43232$) in educational aspirations. However, female students had an average score and standard deviation of ($M = 48.27$, $SD = 9.651$) in psychosocial support and a mean score and standard deviation of ($M = 50.0657$, $SD = 9.58347$) in educational aspirations. From the findings it was revealed that most male respondents experienced higher level of psychosocial support as compared to female respondents. However, female respondents had higher educational aspirations in comparison to male respondents.

4.6.2 Descriptive Statistics using Row Scores in examining gender variations in Psychosocial Support and Educational Aspirations on Chemistry Academic Achievement

Table 4.21 highlights descriptive statistics using row scores in investigating the gender differences in psychosocial support and educational aspirations on Chemistry Academic achievement.

Table 4.21*Gender Differences based on Row Scores in Psychosocial Support and Educational Aspirations*

Gender of students		Percentage score in the Psychosocial Support	Percentage score in the Educational Aspiration	Chemistry Academic Achievement
Male	Mean	89.10	82.37	50.56
	N	147	147	147
	Std. Deviation	9.479	15.605	12.081
Female	Mean	85.85	82.57	51.27
	N	147	147	147
	Std. Deviation	9.078	14.335	12.809
Total	Mean	87.48	82.47	50.92
	N	294	294	294
	Std. Deviation	9.407	14.958	12.434

In table 4.21 it is indicated the male students achieved a mean score and standard deviation of ($M = 89.10$, $SD = 9.479$) in psychosocial support, a mean score and standard deviation of ($M = 82.37$, $SD = 15.605$) in educational aspirations and a mean score and standard deviation of ($M = 50.56$, $SD = 12.081$) in Chemistry academic achievement. However, female students recorded a mean score and standard deviation of ($M = 85.85$, $SD = 9.078$) in psychosocial support, a mean score and standard deviation of ($M = 82.57$, $SD = 14.335$) in educational aspirations and a mean score and standard deviation of ($M = 51.27$, $SD = 12.809$) in Chemistry academic achievement. From the outcomes it was revealed that most male respondents experienced a higher psychosocial support than female respondents. However, female respondents had greater educational aspirations than the male respondents. Further male respondents had a higher Chemistry academic achievement than their female counterparts. This implies that female students had a higher achievement in Chemistry and in addition had higher educational aspirations while male respondents experienced only a higher psychosocial support.

4.6.3 Descriptive Statistics of gender differences using Standardized Scores in Psychosocial Support and Educational Aspirations on Chemistry Achievement

Table 4.22 presents standardized descriptive statistics of gender variations in psychosocial support and educational aspirations on Chemistry Achievement.

Table 4.22

Gender Differences in Psychosocial Support and Educational Aspirations on Chemistry Academic Achievement

		Chemistry Achievement	Psychosocial Support	Educational Aspirations
Gender of students		Standardized Scores	Standardized Scores	Standardized Scores
Male	Mean	49.7155	51.73	49.9343
	N	147	147	147
	Std. Deviation	9.71631	10.076	10.43232
	Kurtosis	-.449	.173	2.970
	Skewness	-1.123	-.359	-1.537
Female	Mean	50.2845	48.27	50.0657
	N	147	147	147
	Std. Deviation	10.30123	9.651	9.58347
	Kurtosis	-.621	.039	2.641
	Skewness	-1.043	-.207	-1.282
Total	Mean	50.0000	50.0000	50.0000
	N	294	294	294
	Std. Deviation	10.00000	10.00000	10.00000
	Kurtosis	-.553	.026	2.814
	Skewness	-1.069	-.252	-1.424

Outcomes in Table 4.22 indicated the male students had a mean score and standard deviation of (M = 49.7155, SD = 9.71631) in Chemistry academic achievement, a mean score and standard deviation of (M = 51.73, SD = 10.076) in psychosocial support and a mean score and standard deviation of (M = 49.9343, SD = 10.43232) in educational aspirations. However, female students

recorded a mean score and standard deviation of ($M = 50.2845$, $SD = 10.30123$) in Chemistry academic achievement, a mean score and standard deviation of ($M = 48.27$, $SD = 9.651$) in psychosocial support and a mean score and standard deviation of ($M = 50.0657$, $SD = 9.58347$) in educational aspirations.

Further, from the findings it was revealed that most male respondents had a higher psychosocial support score as compared to their scores in educational aspirations. However, they had a lower Chemistry academic achievement compared to the girls implying that male respondents experienced higher psychosocial support and lower levels of educational aspirations and academic achievement in Chemistry. Furthermore, the results indicated that female respondents had higher academic achievement and higher educational aspirations compared to their male counterparts. This implies that female students higher educational aspirations and academic achievement were more prevalent but they had lower psychosocial support than the male students.

4.6.4 Hypothesis Testing

In order to establish existence of any significant gender differences in psychosocial support and educational aspirations on Chemistry academic achievement the following hypothesis was formulated.

H₀₃ There are no any statistical significant gender differences in psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students.

This hypothesis was evaluated using the multiple regression and study outcomes are indicated in Table 4.23

Table 4.23*Model Summary for Predicting Gender differences*

The gender of the students	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Sig. F Change	Durbin-Watson
Male students	1	.072 ^a	.005	-.009	9.75806	.005	.687	.073
Female students	1	.303 ^a	.092	.079	9.88492	.092	.001	.208

Table 4.23 above indicates that the Durbin-Watson value was .073 for male students and .208 for female students meaning that the statistics did not meet assumption of the independence of observations and according to (Tabachnick & Fidell, 2019), assumption for independent errors is expected to range from 1.5-2.5. Hence, the data violated the assumption for independent errors. Nevertheless, there were significant differences in females but no significant difference was seen in male students.

Table 4.24 presents the regression coefficients.

Table 4.24*Regression Coefficients of Gender Differences*

Gender of the Students	Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
			B	Std. Error	Beta			
Male students	1	(Constant)	50.106	4.935			10.154	.000
		Psychosocial Support	-.063	.086	-.065		-.735	.464
		Educational Aspirations	.058	.083	.062		.694	.489
Female students	1	(Constant)	70.423	5.403			13.033	.000
		Psychosocial Support	-.156	.087	-.146		-1.793	.075
		Educational Aspirations	-.252	.088	-.234		-2.872	.005

a. Dependent Variable: Chemistry Academic Achievement

P-Psychosocial Support, E-Educational Aspirations, F-Regression equation for Female respondents and M-Regression equation for male respondents.

From Table 4.24 the equations predicting Chemistry achievement for male and female students from psychosocial support and educational aspirations are;

$$M = -0.063P + 0.058E + 50.106$$

$$F = -0.156P + 0.252E + 70.423$$

The results revealed that educational aspirations had the highest predictive index for Chemistry academic achievement for male students. Psychosocial support had the lowest and negative predictive index on Chemistry academic achievement. In regard to female students, the findings revealed that both psychosocial support and educational aspirations had negative predictive index for Chemistry academic achievement, However, psychosocial support had the highest predictive index for Chemistry academic achievement for female students but this was lower compared to that of male students. In addition, psychosocial support and educational aspirations greatly predicted Chemistry academic achievement in male students than in female students. However, educational aspirations displayed a positive variation in Chemistry academic achievement among the male respondents and the other variables displayed negative variations in both male and female respondents. Therefore, the null hypothesis was rejected. From the multiple regression equations, it can be seen that psychosocial support and educational aspirations predict Chemistry academic achievement to a greater extent in both female and male students. Psychosocial support and educational aspirations predicted Chemistry academic achievement greatly in male students than female students.

4.6.5 Discussion of Results

In the third objective, the researcher hypothesized that the gender variations in psychosocial support and educational aspirations are not significant. Findings from the multiple regression

indicated that psychosocial support and educational aspirations in both male and female students significantly affected a student's academic achievement in Chemistry. Further, most male respondents experienced higher level of psychosocial support as compared to female respondents. As well, female respondents had higher educational aspirations in comparison to male respondents. Psychosocial support had the highest predictive index for Chemistry academic achievement for female students but this was lower compared to that of male students. In addition, psychosocial support and educational aspirations predicted greatly Chemistry academic achievement in male students than in female students.

Regarding psychosocial support, Tiffany and Hunter (2021) while investigating the variations in gender in psychosocial factors and their influence on sexual activity and HIV testing noted that psychosocial variables and goals predicted gender differences in sexual activities. Data was collected by the use of structured questionnaires from a sample comprising 581 youths aged 13–24 who were part of the study. Higher sexual activity among the teenagers was an indication of dire state of psychosocial support and lack of personal goals. Similar findings on psychosocial support as a significant predictive index on Chemistry academic achievement is expounded by Jiesi et al. (2017).

Similarly, Xiaodi et al. (2023), while examining how psychosocial factors impact the educational aspirations of adolescents, noted significant gender differences in psychosocial factors and their impact on the educational aspirations of adolescents. Specifically, the researchers indicated that psychosocial factors, gender factors and aspirations of others had significant direct effects on adolescents' educational aspiration. Data was gathered from a group of adolescent students across all provinces in China. Researchers found that gender variations in psychosocial factors interacted

with students' self-concept to predict aspirations in academics. Students that exhibited higher educational aspirations experienced relatively higher psychosocial support from peers, guardians and their teachers.

The present study results are contrary to the findings supported by Tek and Ram (2017) who noted a non-significant gender differences in educational aspirations and academic achievement of adolescents. Despite the above findings the study indicated that aspiration levels play an important role in everyday decision making. In practice, however, decisions are not based on an aspiration level alone. The aspiration level and the overall probabilities of success and failure may receive special attention but subjects will not be completely insensitive to difference within the classes of gains and losses. Aspirations have a significant gender difference on pupil attainment, indicating a net family background and other individual factors, but these effects are reduced when examining pupil achievement.

Similarly, Mwangi (2021) in Kenya explored perceived effects of psychosocial support on the emotional wellbeing of youths affected by parental absence and found an alignment with the current study. This study made use of 72 youths aged 12 to 24 years and utilized correlational research design while employing questionnaires to collect data from 72 youths in central Kenya. The researcher indicates significant gender differences in the relationship between psychosocial support and the emotional wellbeing of the youths. However, the researcher recommends further studies on the correlation between students' wellbeing, psychosocial factors, attitudes and academic achievement.

The present study findings are similar to previous studies that have been done, Madiha (2019). Results illustrated that there were positive and significant gender differences in educational aspirations and students KCSE performance.

The findings postulates that irrespective of gender or school category, psychosocial support and educational aspirations, significantly affect Chemistry achievement among students. Poor Chemistry academic achievement in Narok North Sub-County therefore maybe attributed to high or low psychosocial support and educational aspirations among students. The gender difference in psychosocial support and educational aspirations and their potential effect on Chemistry academic achievement cannot be overemphasize, Particularly, psychosocial support and educational aspirations were the highest predictors of Chemistry academic achievement among the male participants as opposed to the female respondents.

4.7 The Predictive Weight between Psychosocial Support, Educational Aspirations and Chemistry Academic Achievement

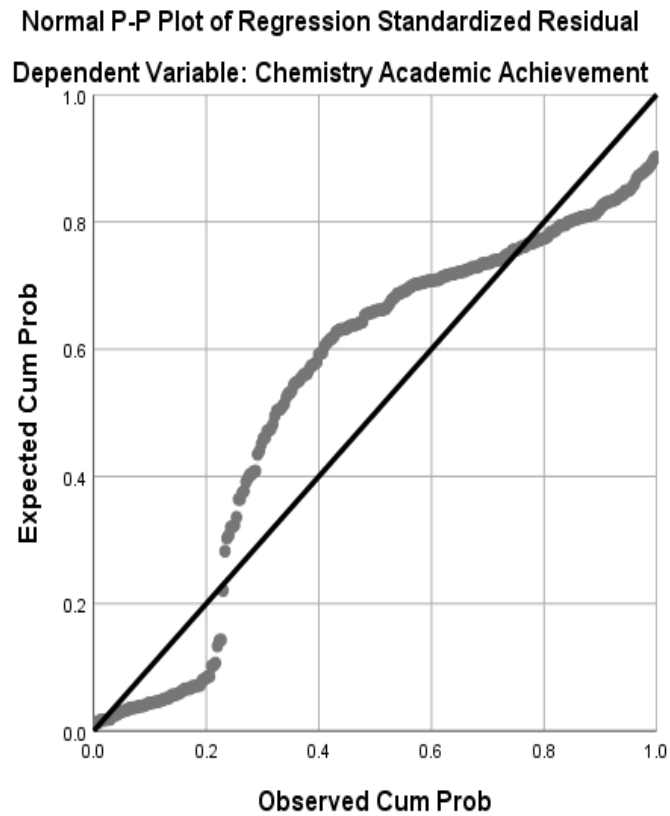
The section presents regression analysis tests, testing of the hypothesis and results discussion.

4.7.1 Test for Assumptions of Regression Analysis

Heteroscedasticity and homoscedasticity assumptions was tested by scatter plots and results presented in Figure 4.1.

Figure 4.1

Scatter Plot for Observed and Expected Cumulative Probabilities



The Figure 4.1 indicates that the scatter plot formed a definite pattern, meaning that data was equally distributed. Furthermore, the error was spread out consistently between the predictor variables and therefore indicates heteroscedastic assumption of equal variance of outcome variables.

As well, normal distribution error was evaluated, a histogram was utilized in examining the assumption as indicated in Figure 4.2.

Figure 4.2

Scatter Plot for testing normality distribution

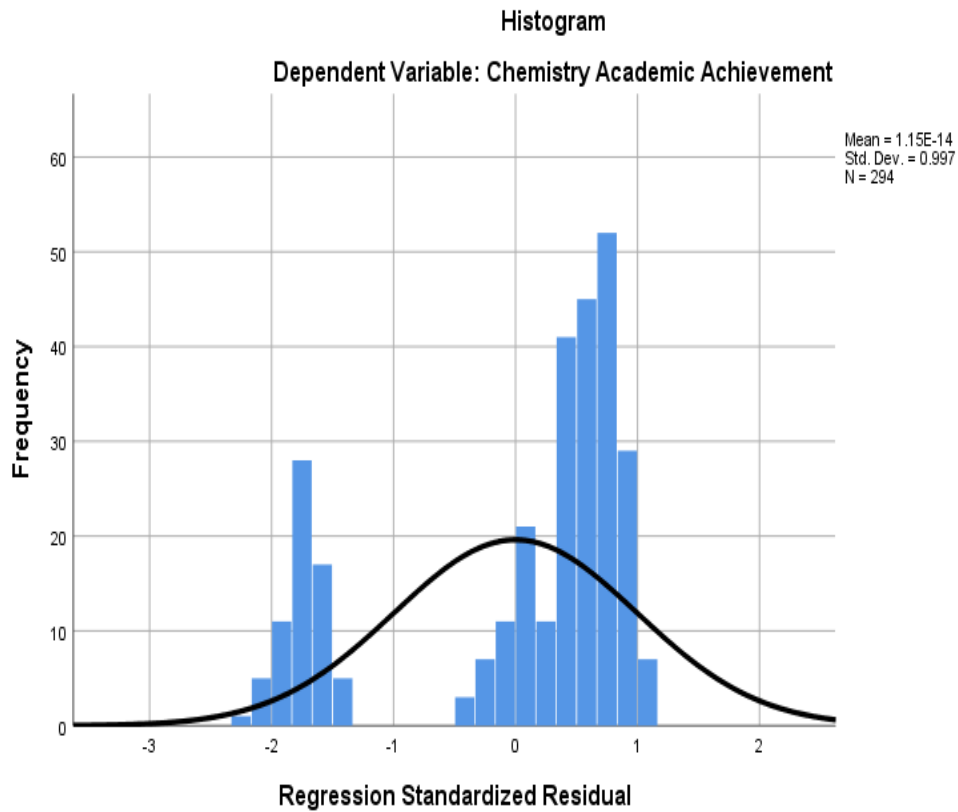


Figure 4.2 shows the normality test results. The scatter plot indicates that psychosocial support and educational aspirations were approximately normally distributed.

Table 4.25
Assumptions of Multi-Collinearity and Singularity

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	Family based	Social support network	Communication support	Student motivation	Ambition /Goal setting	Educational involvement
1	1	6.870	1.000	.00	.00	.00	.00	.00	.00	.00
	2	.058	10.862	.01	.02	.01	.05	.30	.02	.05
	3	.025	16.484	.00	.01	.01	.02	.61	.42	.14
	4	.018	19.476	.00	.00	.00	.00	.07	.54	.78
	5	.015	21.162	.10	.06	.03	.90	.00	.01	.00
	6	.008	29.080	.82	.39	.03	.02	.00	.01	.03
	7	.005	36.108	.07	.52	.93	.01	.02	.00	.00

a. Dependent Variable: Chemistry Academic Achievement

Outcomes in Table 4.25 indicates that values that are $p < .05$ significantly predicted Chemistry achievement whereas those that are not did not significantly predict Chemistry academic achievement.

4.7.2 Hypothesis Testing

In determining the presence of any predictive weight between psychosocial support and educational aspirations on Chemistry achievement, the hypothesis that follows was examined.

H₀₄ There is no predictive weight between psychosocial support and educational aspirations on Chemistry achievement.

Consequently, regression analysis was employed in evaluating the hypothesis.

Table 4.26*Model Summary for Predicting Chemistry Academic Achievement*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.280 ^a	.078	.059	9.69959	.208

a. Predictors: (Constant), Educational involvement, educational aspirations, Family based psychosocial support, Communication support, psychosocial support, Ambition/Goal setting educational aspirations, Student motivation, educational aspiration, Social support network psychosocial support

b. Dependent Variable: Chemistry Academic Achievement

In Table 4.26 findings indicates that the Durbin-Watson value was .208. Implying that the statistical data did not meet assumption for the independence of observations. Further, according to (Tabachnick & Fidell, 2019) assumption for independent errors is expected to range from 1.5 to 2.5. Hence, our data violated the assumption for independent errors.

Table 4.27*Regression Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
1	(Constant)	64.965	5.478		11.859	.000
	Family based psychosocial support	-.496	.198	-.188	-2.507	.013
	Social support network psychosocial support	-.164	.121	-.106	-1.361	.175
	Communication support psychosocial support	.887	.247	.239	3.592	.000
	Student motivation educational aspiration	.009	.034	.019	.260	.795
	Ambition/Goal setting educational aspirations	-.013	.041	-.022	-.320	.749
	Educational involvement educational aspirations	-.067	.044	-.114	-1.532	.127

a. Dependent Variable: Chemistry Academic Achievement

F- Family based psychosocial support, S- Social support network psychosocial support, C- Communication support psychosocial support, M- Student motivation educational aspiration, A- Ambition/Goal setting educational aspirations, E- Educational involvement educational aspirations and \hat{y} - Chemistry Achievement

From Table 4.27 the equation predicting Chemistry achievement from psychosocial support and educational aspirations is;

$$\hat{y} = -0.496F - 0.164S + 0.887C + 0.009M - 0.013A - 0.067E + 64.965$$

The findings revealed that communication support dimension of psychosocial support had the highest predictive index for Chemistry achievement followed by student motivation dimension of educational aspiration, then, ambition/goal setting component of educational aspirations, educational involvement dimension of educational aspirations, social support network component of psychosocial support and finally family based dimension of psychosocial support.

Communication support dimension of psychosocial support and student motivation dimension of educational aspiration as variables displayed positive variation in Chemistry academic achievement while ambition/goal setting component of educational aspirations, educational involvement dimension of educational aspirations, social support network component of psychosocial support and family based dimension of psychosocial support displayed negative variations in Chemistry academic achievement and therefore these lead to the rejection of the null hypothesis. Further it can be seen that psychosocial support and educational aspirations predict Chemistry achievement from the multiple regression expression. However, the equation indicates communication support dimension of psychosocial support had the highest predictive index on Chemistry academic achievement, this was followed by student motivation dimension of educational aspiration but, family based dimension of psychosocial support had the lowest predictive index on Chemistry academic achievement.

4.7.3 Discussion of Results

As per the fourth objective, the researcher hypothesized that psychosocial support and educational aspirations had no significant relationship with Chemistry academic achievement. Findings indicate that psychosocial support and educational aspirations significantly affected students' Chemistry academic achievement from the multiple regression results. Students that had a higher psychosocial support achieved better Chemistry scores but, relationships between psychosocial support and Chemistry academic achievement were significant but negative with only communication support dimension of psychosocial support having a significant positive correlation with Chemistry achievement. Also, results indicate consistent predictive index of Chemistry academic achievement from student motivation dimension of academic aspirations. It was observed that communication dimension of psychosocial support had the highest predictive index for Chemistry academic achievement, followed by student motivation dimension of educational aspirations and ambition/goal setting dimension of educational aspirations. However, the lowest predictive index on Chemistry achievement was indicated by educational involvement dimension of educational aspirations, social support network and family based dimensions of psychosocial support. Communication and student motivation had a positive variation in Chemistry academic achievement whereas educational involvement, ambition/goal setting, social support networks and family based support had negative variation indicating an inverse relationship between them and Chemistry academic achievement.

Regarding the predictive weight of psychosocial support and educational aspirations on academic achievement, Elise et al. (2021) studied the relationship between psychosocial factors, aspirations, and academic achievements in higher education. The variables were investigated through a survey that sought to collect data from 36,000 university undergraduates. Findings revealed that

psychosocial factors moderately predict academic outcomes with a strong emphasis on the predictive nature of a sense of belonging, academic self-efficacy, and aspirations which were found to be most influential on both cumulative grade point average and resilience. Therefore, the study indicated a significant association between psychosocial factors, aspirations, and academic achievements in higher education.

The present study results support the findings reported by Yulong et al. (2022) in a research that involved 424 college students across various colleges and universities in Hangzhou China. The study examined the relationship between social support and goal pursuit among college students. Results revealed a significant positive association between social support, beliefs in a just world, and aspirations among Chinese college students. Furthermore, Students that had a higher psychosocial support and higher educational aspirations achieved better Chemistry scores but, relationships between psychosocial support and Chemistry achievement was a weak significant correlation.

Similarly, Paolo (2020) was interested with the connection between children's aspiration profiles, self-efficacy, social support, and academic achievement. By employing a thematic research design and utilizing cluster analysis in examining 456 Italian students aged between 10 to 14 years, findings indicated that academic achievement was significantly impacted by three profiles: aspiration profiles, self-efficacy, and social support. The researcher recommended the evaluation of the dimensions of psychosocial support and components of educational aspirations and their correlation to Chemistry achievement.

In addition, present study supports findings reported by Bellon et al. (2017) who analyzed the significance of psychosocial support and aspirations in academic performance. Researchers utilized a longitudinal design and obtained data from a sample of 1,549 children who participated in the national standardized examination in Kenya. Results from the study indicated that monitoring, aspirations, and parental social support are crucial components of parental leadership, exerting a direct and positive significant impact on children's academic achievement. In the study, it is indicated that psychosocial support is a crucial factor in education and is a strategy for dealing with problems and challenges, whereas educational aspirations can be an academic incentive which can instill motivation and resilience for students at school.

In conclusion, the findings indicate that irrespective of gender, school category or age of students, psychosocial support and educational aspirations significantly affected Chemistry academic achievement scores. The higher the variables of psychosocial support and educational aspirations the higher the achievement in Chemistry. Thus, low Chemistry academic achievement in Narok North Sub-County may be related to poor psychosocial support and low educational aspirations among the students. The low psychosocial support scores as well as the low educational aspirations maybe be an impediment towards realizing higher Chemistry academic achievement in the Sub-county.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a brief explanation of the research findings followed by conclusions and recommendations based on the objectives of the study.

5.2 Summary of the Findings

The research sought to establish the correlation between psychosocial support and Chemistry academic achievement, finding out the correlation between educational aspirations and Chemistry academic achievement, establishing the gender differences in psychosocial support and educational aspirations on Chemistry academic achievement, and eventually finding out the predictive weight between psychosocial support and educational aspirations on Chemistry academic achievement.

Concerning the correlation between psychosocial support and Chemistry academic achievement, the study established a negative and significant correlation between the variables $r(294) = -.125$, $p < .032$. implying that psychosocial support and Chemistry achievement had some sort of an inverse relationship. This meant that those students achieving highly in Chemistry may not be experiencing higher psychosocial support than those performing poorly in Chemistry learning area. Male students recorded the greatest average psychosocial support scores and therefore they had a better psychosocial support than their female counterparts. Co-educational institutions seemed to have a higher overall psychosocial support score than boys and girls boarding schools. Analysis of levels of psychosocial support showed that family based social support dimension is the most prevalent compared to communication and social network dimensions of psychosocial

support. Further the outcomes indicated that majority of the respondents experienced family based social support as opposed to communication and social network dimensions of psychosocial support. However, communication support was the highest indicator of Chemistry academic achievement followed by social support networks and family based dimensions of psychosocial support. Pearson's correlation indicated that $p < .05$ thereby implying the correlation between the variables of psychosocial support and Chemistry achievement was negative and significant.

On the relationship between educational aspirations and Chemistry academic achievement there was a significant correlation between educational involvement dimension of educational aspirations and Chemistry achievement. However, cumulatively educational aspirations did not have a significant correlation with Chemistry academic achievement ($r(294) = -.112, p > .05$). This implies that educational aspirations do not have a significant influence on the Chemistry academic achievement among students. Female respondents had higher educational aspirations than their male counterparts. These statistics also indicated that educational aspirations were varied across different types of schools with co-educational institutions having the highest educational aspirations score and girls' boarding schools having the lowest educational aspirations score. Boys' boarding schools had a moderate educational aspirations compared to both girls' schools and co-educational institutions. Despite majority of the respondents being motivated in Chemistry learning area, results indicated that educational aspirations did not have a significant correlation with Chemistry academic achievement.

Concerning gender variations in psychosocial support and educational aspirations on Chemistry academic achievement, educational aspirations displayed a positive variation in Chemistry

achievement among the male respondents and the other variables displayed negative variations in both male and female respondents. From the multiple regression equations, it can be seen that psychosocial support and educational aspirations predict Chemistry academic achievement to a greater extent in both female and male students. Psychosocial support and educational aspirations predicted Chemistry academic achievement greatly in male students than female students. Further, most male respondents experienced higher level of psychosocial support as compared to female respondents.

Despite the study on gender variations in psychosocial support and educational aspirations on Chemistry academic achievement violating the assumption for independent errors, it can be seen that the female respondents had higher educational aspirations and Chemistry achievement in comparison to male respondents. This implies that female students had a higher achievement in Chemistry and in addition had higher educational aspirations while male respondents experienced only a higher psychosocial support.

Finally, the predictive weight between psychosocial support and educational aspirations on Chemistry academic achievement yielded an equation. The multiple regression equation pointed out that student motivation dimension of educational aspiration, ambition/goal setting component of educational aspirations, educational involvement dimension of educational aspirations, social support network component of psychosocial support, communication support dimension of psychosocial support and family based dimension of psychosocial support have consistent predictive index on Chemistry academic achievement.

Furthermore, findings indicated that social support network component of psychosocial support, communication support dimension of psychosocial support, family based dimension of psychosocial support, student motivation dimension of educational aspiration, ambition/goal setting component of educational aspirations and educational involvement dimension of educational aspirations significantly affected a student's Chemistry achievement. It can be observed that psychosocial support and educational aspirations predict Chemistry academic achievement from the multiple regression expression. However, the equation indicates communication support dimension of psychosocial support had the highest predictive index on Chemistry academic achievement. This was followed by student motivation dimension of educational aspiration but, family based dimension of psychosocial support had the lowest predictive index on Chemistry academic achievement. The students who experienced communication support dimension of psychosocial support and student motivation dimension of educational aspirations achieved better in Chemistry academic achievement.

5.3 Conclusion

This section presents the conclusion based on the results of this study. From the findings of the study, it can be indicated that psychosocial support and educational aspirations predicted Chemistry academic achievement. Notably, psychosocial support had the strongest predictive index while educational aspirations had the weakest predictive value. It was concluded that proper psychosocial support and educational aspirations may result to improved Chemistry achievement. The other conclusion is that communication support dimension of psychosocial support had the highest predictive index on Chemistry academic achievement while family based dimension of psychosocial support had the lowest predictive index on Chemistry academic achievement. On educational aspirations, student motivation had the highest predictive index on Chemistry

academic achievement while ambition/goal setting and educational involvement dimensions of educational aspirations had the lowest predictive index on Chemistry academic achievement. From the findings, it can be concluded that communication support dimension of psychosocial support and student motivation dimension of educational aspirations were the best predictors of Chemistry academic achievement.

5.4 Recommendations

The recommendations presented below focused on the research results and majorly targets education related policies and further research in this field.

5.4.1 Policy Recommendations

- i. Teachers should encourage students to form communicative networks during learning of Chemistry to attain higher achievement in the subject. Further, interactive classroom and group discussions that reinforce communication are recommended.
- ii. Curriculum developers in Kenya (KICD), teacher trainers and the Ministry of Education should consider inculcating relevant skills in Chemistry teachers aimed at helping students maintain high levels of motivation.
- iii. Proper emphasis should be laid down by parents and teachers to help male students develop higher educational aspirations and to ensure female students experience proper psychosocial support that may translate to higher Chemistry academic achievement.
- iv. Teachers and parents/guardians should always encourage students to integrate communication support dimension of psychosocial support and high student motivation part of their educational aspirations in order to consistently achieve high scores in Chemistry.

5.4.2 Recommendations for Further Research

- i. Other related studies should be conducted in counties outside Narok County to compare results. That may involve larger sample sizes, different sampling techniques such as stratified, different research designs such as mixed method approaches, case studies and ex-post facto approaches perhaps not only to compare and contrast findings, but to also enrich the outcomes of this study.
- ii. The study was based on predicting the correlation between psychosocial support and educational aspirations on Chemistry academic achievement among Form Three students. Further research should be carried out on the correlation between psychosocial support and educational aspirations on general academic achievement among junior school or university students to compare and contrast the findings across diverse developmental stages.

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APPENDICES

Appendix A: Psychosocial Support Scale

Statement	Appropriate response				
	SA	A	U	D	SD
	5	4	3	2	1
1. I believe I will remain close to my friends for a long time.					
2. I can go to my friends when I need advice.					
3. I help others without expecting anything In return.					
4. I have long lasting friendships.					
5. My parents/family members support my decisions.					
6. My parents/family members understand my needs.					
7. I am encouraged by my friends and family to follow my dreams.					
*8. I don't have friends to spend time with.					
9. My parents give me pocket money.					
10. There is someone to accompany me when I need them.					
*11. I feel lonely even in the presence of friends and family.					
12. There are people to listen to me when I need to talk.					
13. My loved ones celebrate my achievements.					
14. When I feel lonely several people come forward to be with me.					
15. I express appreciation to others help.					

*16. There is no one I feel comfortable to discuss my personal problems.					
17. There are several people whose company I enjoy.					
18. I provide support as long as one needs.					
19. Once I start supporting others I continue giving support.					
20. I provide help to others if someone needs.					
*21. I help people to get something in return.					
22. I help others without any expectations.					

Appendix B: Educational Aspirations Scale

Educational aspirations scale:

In the space next to the statements below please circle a number from “0” (not at all true of me) to “4” (very true of me). If the statement does not apply, circle “0”. Please be completely honest. Your answers are entirely confidential and will be useful only if they accurately describe you.

0 = Not at all true of me (NA)

1 = Slightly true of me (ST)

2 = Moderately true of me (MT)

3 = Quite a bit true of me (QA)

4 = Very true of me (VT)

Statement	Appropriate response				
	VT	QA	MT	ST	NA
	4	3	2	1	0
1. I plan to reach the highest level of education in my academics.					
2. I will pursue additional training in my occupational area of interest.					
3. I will always be knowledgeable about recent advances in my future career.					
4. I know I will work to remain current regarding knowledge in my academics.					
5. I will attend conferences annually to advance my knowledge after school.					
6. Even if not required, I would take continuing education courses to become more knowledgeable.					
7. I would pursue an advanced education program to gain specialized knowledge in my field.					
8. Every year, I will prioritize involvement in continuing education to advance my career and education.					
9. I plan to rise to the top leadership position of my school, organization or business.					

Appendix D: Yamane Formula

The Yamane formula that will be used to come up with the sample size is as below;

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

Formula key,

n= sample size,

N = is the population size,

e = is the level of precision,

Since the population proportion is definite, N = 2,929 and e = 0.05. Therefore, the sample size will be approximated to 294 students.

$$n = \frac{2929}{1 + 2929(0.05^2)} = 294$$

Appendix E: Cronbach's Alpha formula

$$\alpha = \frac{N \cdot \bar{C}}{\bar{V} + (N - 1) \cdot \bar{C}}$$

Where; N = the number of items,

\bar{C} = the covariance between item-pairs,

\bar{V} = the average variance.

Cronbach's Alpha is consistent in telling the close correlation between a set of test items.

Appendix F: Consent Form

Kenyatta University

P.O Box 14300-00100

Nairobi.

To whom it may concern,

Dear participant,

My name is Anna Moraa Orwari, I am a Kenyatta University student undertaking a Master of Education degree in Guidance and Counselling. I am undertaking an academic research on psychosocial support and educational aspirations as correlates of chemistry academic achievement among form three students in Narok County, Kenya. The information obtained will be useful in different sectors towards improving Chemistry achievement in schools.

The participation in this research is entirely voluntarily and you are also free to ask any question related to the study at any time during the interview. You may also decline to respond or answer any question that you feel it is offensive to you and you are also free to withdraw from the interview at any time you wish.

In case any of the question is offensive or make you feel uncomfortable, please feel free to decline giving out a response. You may also stop the interview at any time. The interview will take approximately 10 minutes. The participation in this study is voluntary and no incentives will be given.

The interview will be conducted at the place you feel convenient within the school. The information collected will be only used in this study and your name will not be recorded on the questionnaires.

I agree to participate in the study.

Signature..... Date.....

Appendix G: Requests for Authorization to Use Research Instruments

Psychosocial Support Scale (PSS)

Dear Dr. Padhy,

My name is Anna Moraa Orwari, a Master's student at Kenyatta University. I'm reaching out to request permission to use your Psychosocial Support Scale (PSS) in my research study.

The purpose of my study is to establish psychosocial support and educational aspirations as predictors of academic achievements in Chemistry among Form Three students in Narok County, Kenya.

I would be very grateful if you could grant me authority to use the scale in my study and to include it in any resulting publications or presentations. I further request you to allow me to reproduce it in the Appendix section of my study. I will provide attribution and acknowledgement of your work in any materials related to my work.

Thank you for your consideration as I look forward to receiving your response.

Kind regards,

Anna Moraa Orwari

Educational Aspirations Scale (EAS)

Dears Dr. Gregor and Dr. O'Brien,

My name is Anna Moraa Orwari, a Master's student at Kenyatta University. I'm reaching out to request permission to use your Educational Aspirations Scale (EAS) in my research study.

The purpose of my study is to establish psychosocial support and educational aspirations as predictors of academic achievements in Chemistry among Form Three students in Narok County, Kenya.

I would be very grateful if you could grant me authority to use the scale in my study and to include it in any resulting publications or presentations. I further request you to allow me to reproduce it in the Appendix section of my study. I will provide attribution and acknowledgement of your work in any materials related to my work.

Thank you for your consideration as I look forward to receiving your response.

Kind regards,

Anna Moraa Orwari

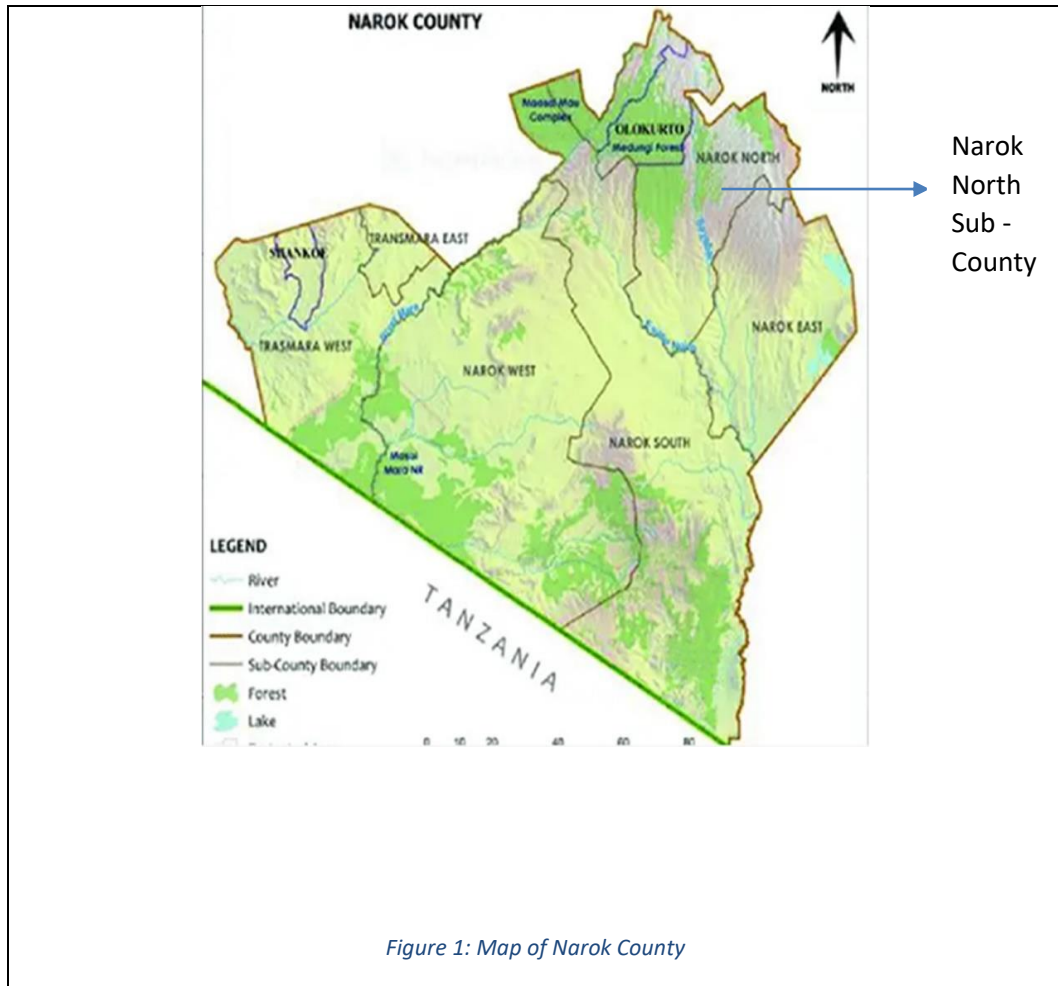
Appendix H: Budget

	Sub-total (Ksh)	Total (Ksh)
Proposal Writing		12,500.00
Typing/Printing	5,000.00	
Stationery	2,500.00	
Photocopy/Binding	5,000.00	
Data Collection/Analysis		22,500.00
Production of instruments	2,500.00	
Transport & Subsistence	15,000.00	
Stationery	5,000.00	
Report Writing		13,500.00
Typing/Printing	5,000.00	
Photocopy	2,500.00	
Stationery	2,500.00	
Binding	3,500.00	
Total		48,500.00

Appendix I: Research Schedule


	2023	2024				
Research Phase	Sep-Dec	Jan	Feb	Mar	Apr	May
Proposal Writing						
Departmental Defense						
Data Collection						
Analysis of Data						
Graduate School Defense						
Publication						

Appendix J: Map of Narok County




Appendix K: Research Permit


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

RefNo: **549604** Date of Issue: **23/October/2024**

RESEARCH LICENSE




This is to Certify that Ms. ANNA MORAA ORWARI of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Narok on the topic: PSYCHOSOCIAL SUPPORT AND EDUCATIONAL ASPIRATIONS AS CORRELATORS OF CHEMISTRY ACADEMIC ACHIEVEMENT AMONG FORM THREE STUDENTS IN NAROK COUNTY, KENYA for the period ending : 23/October/2025.

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