ANTECEDENTS OF ACADEMIC PROCRASTINATION AND ITS RELATIONSHIP TO ACADEMIC ACHIEVEMENT AMONG FORM THREE STUDENTS IN KIAMBU COUNTY, KENYA

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DECLARATION

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

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DEDICATION

My heartfelt acknowledge is to my loving dad Joseph Njuguna Macharia, son Joseph Njuguna, brothers and sisters for their continued support, prayers and encouragement during the entire period. I will forever be indebted to you and may God bless you all.

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ABBREVIATIONS AND ACRONYMS

AEX	Academic Expectations
APS	Academic Procrastination Scale
ASP	Academic Self Perception
BBS	Boys' Boarding School
CEDS	Coeducational Day School
DL	Distance Learning
FEW	Faculty Work and Examination
FtF	Face to Face
GBS	Girls' Boarding School
KCSE	Kenya Certificate of Secondary Education
KIM	Kenya Institute of Management
LD	Learning Disabilities
MoE	Ministry of Education
PAS	Perception of Academic Stress
PI	Personal Initiative
PISA	Programme for International Student Assessment
PPS	Probability Proportional to Size
S	Sincerity
SPSS	Statistical Package for Social Sciences
TA	Task Aversiveness
TAS	Test Anxiety Scale
TIMSS	Trends in International Mathematics and Science Study
TM	Time Management
TVET	Technical and Vocational Education and Training

ABSTRACT

The aim of this research was to examine the antecedents of academic procrastination and its relationship to academic achievement. Antecedents of academic procrastination featured in the current study were test anxiety and perception of academic stress. Academic achievement has been greatly studied in connection with psychological constructs like self esteem, self efficacy, self motivation, self regulation and fear of failure. However, the relationship between antecedents of academic procrastination and academic achievement has not been extensively researched. The specific objectives were: to find out the relationship between test anxiety and academic procrastination, to establish the relationship between perception of academic stress and academic procrastination, to determine the relationship between academic procrastination and academic achievement and to establish a prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination. The study was guided by temporal motivation theory which suggests that people will always prioritise activities which promise the highest utility and procrastinate when the utility of doing a certain task is low. The study adopted a correlational research design while purposive sampling, proportionate sampling and stratified sampling were used to select 410 form three students. Questionnaires were used to collect data from the participants. Piloting of questionnaires was done in one public secondary school in Gatundu South Subcounty, Kiambu County before collecting the actual data. Descriptive statistics such as means, percentages and frequencies were used to summarize the collected data. Pearson's Product Moment Correlation Coefficient and Multiple Regression Analysis were used to test the stated null hypotheses set at α=0.05. Analysis of the collected data was done using SPSS version 20.0 for windows. The results provided evidence that there was positive correlation between test anxiety and academic procrastination (r (342) =.19, p =.00), likewise a positive correlation between perception of academic stress and academic procrastination (r (342) = .29, p = .00). Further the study established that there was a significant negative correlation between academic procrastination and academic achievement (r (342) = .271, p < 0.01). The equation for predicting academic achievement from test anxiety, perception of academic stress and academic procrastination was significant (F (3,338) = 15.338, p = .00). Major recommendations of the study were: Secondary school administrators should develop programs that can assist students to cope with test anxiety during examination period. Students can learn effective ways of curbing academic procrastination and academic stress so as to enhance their overall academic achievement.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

In this chapter, the background to the study and statement of the problem are presented. It also highlights the purpose of the study, objectives, research hypotheses, significance, limitations, delimitations and assumptions of the study. The chapter ends with theoretical and conceptual frameworks as well as operational definitions of terms.

1.2 Background to the Study

Worldwide, educational attainment in most cases is gauged by academic achievement which is seen by many as the key determinant of success in life. Without substantial investment in human capital, no country can achieve sustainable economic development. In order to play effective roles in the society and to overcome prevailing challenges, education is expected to provide an all-round development of its recipients. More often there is disappointment and frustration when learners do not obtain the cut-off grade for admission to join colleges and higher institutions of learning. Parents suffer a lot of stress and the number of the unemployed in the society also increases. Under-achievement has various implications for adolescents like, school dropout, loss of focus and hope (Uys, 2011).

Under-achievement among the students poses as a major challenge all over the world as expressed by many education policy makers and analysts. Many countries like USA are concerned about their students' under-achievement. The students are usually examined

using international tests and their performance is verified. Data released from international math and science assessments indicated that USA students continued to rank behind many developed nations. In a period of three years, Programme for International Students Assessment (PISA), which was one of the biggest cross-national tests was conducted among 15-year-olds in dozens of developed countries. It measured reading ability, science literacy and mathematics and from 2015 PISA results, USA was placed number 24 in science and 38 in mathematics out of 71 countries. Education reformers frequently invoked the high rate of underachievement of USA students to justify school policy changes (Martin & Richard 2015).

In South Africa, Trends in International Mathematics and Science Study (TIMSS) tests are conducted after every four years among African countries to examine students' performance. Likewise under-achievement poses as a challenge among South African students. A report of November (2016) showed that South Africa was near the bottom of the rankings, according to TIMSS which was a quadrennial test sat by 580,000 pupils in 57 countries. Further findings revealed that 27 percent of pupils who have been in school for a period of six years could not read. After five years of schooling, 50 percent of the students could not divide 24 divide by 3 to get 8. In addition only 37 percent of the students starting school were able to pass the matriculation exam and just 4 percent were able to earn a degree (Wilson & Aditi 2017). Education analysts have tried to come up with various school policies and strategies to enhance the performance of the students.

In Kenya, the Kenya Certificate of Secondary Examination (KCSE) is an annual national examination that marks the end of secondary school cycle. Therefore KCSE examination acts as a gatekeeper guarding entry to higher institutions of learning. However, analysis from 2019 KCSE results statistics indicated that students' performance was below average. The analysis illustrated that out of a total of 693,263 students who sat for the exam, only 125,746 of them attained a mean grade of C+ and above, which is only 18% of the students who managed to get university admission. A total of 248,147 students attained a mean grade of C, C- and D+, hence joined TVET institutions to learn technical skills. In addition a total of 319,370 of the students attained a mean grade of D and below; whereby 137,713 attained grade D, some 152,339 had D- while 29,318 candidates scored E. This ranged at 46% of the students who were not admitted to university or TVET institutions.

In Gatundu South Subcounty, out of a total of 3,188 students who sat for the KCSE exam, only 454 of them attained a mean grade of C+ and above. This was only 14% of the students who managed to get university admission (Director of Education, Gatundu South, Subcounty). This percentage was slightly below the national cumulative percentage of 18.1% for the year 2019. A total of 1154 which was 36% of the students attained a mean grade of C, C- and D+, hence were not admitted to TVET institutions to acquire technical skills. In addition a total of 1,580 of the students attained a mean grade of D and below; whereby 632 attained grade D, some 801 had D- while 147 candidates scored E. This meant that 50% of the students did not manage to pursue any professional course or acquire technical skills.

Research studies have indicated that there are many factors that affect students' academic achievement. These include physical environment, class size, teachers experience and attitudes, parental involvement and teachers competency and training (Lippman, 2010). A lot of literature has focused on environmental factors as well as psychological factors. Psychological factors include among others; self esteem, self efficacy, self regulation, fear of failure, perfectionism, academic procrastination among others (Wondu, T.B. 2018). According to Pychyl and Flett (2012), academic procrastination is a serious issue that affects the students, community and society and therefore must be addressed urgently. Hence the current study focused on academic procrastination as a major psychological factor and it's antecedents included test anxiety and perception of academic stress. However there is limited local literature concerning antecedents of academic procrastination (test anxiety and perception of academic stress) as a psychological factor which might in one way or another affect academic achievement.

Ellis and Knaus (2002), gave an explanation of procrastination as the desire to avoid an activity and the use of excuses to justify avoidance behaviours. A procrastinator is someone who knows what they want to do, can be able do it, is trying to do it, but doesn't do it (Popoola, 2005). Due to delayed completion of assignments and the last minute preparation for the exams procrastinating students' academic performance is usually below average (Balkis et al. 2013). Consejero et al. (2006) stated that academic performance of students largely depends on the proper organization of the study time and this includes finding time to pursue work related goals.

There is a link between academic procrastination and test anxiety among students. Test anxiety is physiological, phenomenological and behavioural responses that accompany students regarding negative consequences of failure in the face of exams. Test anxiety comprises of cognitive and physical aspects whereby cognitive test anxiety occurs when the student thinks about the consequences of failure, has a problem in recalling facts and faces difficulties of reading and understanding the questions. Physical test anxiety occurs when the student has insufficient study skills and physical discomfort (Onyeizugbo, 2010). A study by Jelena and Aleksandra (2018), supported that, an increase in anxiety led to an increase in the level of academic procrastination.

Perception of academic stress is a psychological response experienced by students which threaten their learning abilities. It might also result because of projected disappointment by the student to achieve certain academic targets. A longitudinal study by Ashraf et al. (2019), showed a significant positive relationship between academic procrastination and perception of academic stress. Test anxiety and perception of academic stress could be the reason behind the under-achievement among students. Therefore the current study aims to examine the antecedents of academic procrastination and its relationship with academic achievement among form three students in Gatundu South Subcounty, Kiambu County, Kenya.

1.3 Statement of the Problem

Under-achievement is a major challenge among the secondary school students in Gatundu South Sub county. This was evidenced by 2019 KCSE analysis results which revealed that out of 3,188 students who sat for the exam only 454 of them, which was only 14% attained a mean grade of C+ and above had the opportunity to join universities in order to acquire professional courses (See Table 3.1). A total of 1,154 which was 36% of the students attained a mean grade of C, C- and D+, were placed in TVET institutions to be trained on different technical skills. Finally a total of 1,580 which was 50% of the students attained a mean grade of D and below. These students were neither accommodated in the universities nor in the TVET institutions, therefore they were not to be trained on any course or technical skills.

Under-achievement has many negative effects to students, parents and to the whole country at large. Students may miss out on jobs and many rewarding life opportunities and parents may suffer a lot of stress as they have to take care of their children who are jobless. The country will lack skilled human capital that is needed for social and economic development. In order to curb under-achievement there was a need to focus on the factors that relate to academic achievement. Hence this necessitated the researcher to conduct a study to examine the relationship between test anxiety, perception of academic stress and academic achievement among form three students in Gatundu South Subcounty, Kiambu County, Kenya.

1.4 Purpose of the Study

The aim of this study was to examine the antecedents of academic procrastination and its relationship to academic achievement among form three students in Gatundu South Subcounty, Kiambu County, Kenya. Antecedents of academic procrastination includes test anxiety and perception of academic stress.

1.5 Objectives of the Study

The study objectives were as follows:

i. To find out the relationship between test anxiety and academic procrastination.
ii. To establish the relationship between perception of academic stress and academic procrastination.
iii. To examine the relationship between academic procrastination and academic achievement.
iv. To establish the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

1.6 Research Hypotheses

The following were the research hypotheses:

H_{a1}: There is a relationship between test anxiety and academic procrastination.

H_{a2}: There is a relationship between perception of academic stress and academic procrastination.

$H_{a3:}$ There is a relationship between academic procrastination and academic achievement.

$H_{a4:}$ There is a prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

1.7 Significance of the Study

The findings of the study may be of use to the students, parents, teachers and the school administrators on the antecedents of academic procrastination and how they contribute to academic achievemement in secondary schools. Findings from the study may provide the students with the insights on how to avoid or even where to seek for guidance incase one is affected by academic procrastination. Teachers and the school administrators should be equipped with necessary training skills needed to curb test anxiety and perception of academic stress. This includes appreciating test anxiety and perception of academic stress as real phenomena and their potential effects on academic achievement. The findings of the study may contribute to the literature on the relationship between antecedents of academic procrastination (test anxiety, perception of academic stress) and academic achievement.

1.8 Limitations and Delimitations of the Study

1.8.1 Limitations of the Study

Participation and data collection solely depended on acquiescence from the school and also on the free will of the learners involved in the study. The researcher used questionnaires to collect data which relied on students' self-reports, which was an obstacle in ruling out the degree of subjectivity in the findings. The study was limited within a few selected public secondary schools in Gatundu South Subcounty, Kiambu

County. The results of the study may therefore not be generalizable beyond the specific population from which the sample was drawn.

1.8.2 Delimitations of the Study

The research was based only on form three secondary school students in Gatundu South, Subcounty, Kiambu County. Form three students were preferred because they had only one year to prepare for their KCSE exam. Hence they were to learn how to handle test anxiety and perception of academic stress during the examination period. Though there were many variables that influenced academic achievement, the study confined itself to test anxiety and perception of academic stress as the antecedents of academic procrastination.This was because studies in the local context on how the two variables related to academic performance were not readily available.

1.9 Assumptions of the Study

The research was carried out with the assumption that the scales used in measurement of test anxiety, perception of academic stress, academic procrastination and academic achievement variables were valid. It was also assumed that the respondents cooperated and furnished the researcher with honest and reliable responses.

1.10 Theoretical and Conceptual Framework

1.10.1 Theoretical Framework

The research was guided by temporal motivation theory (TMT) (Steel &Konig, 2006)

Temporal Motivation Theory (TMT) (Steel & Konig, 2006)

This theory suggests that procrastination is a reflection of a temporal pattern of discounting behaviours. A student who procrastinates has the tendency to suspend completion of learning tasks that are associated with long term goals that have greater benefits in order to attend to available short term goals. The principles of this theory include; task desirability, expectancy, value, sensitivity to time and delay. According to this theory, enjoyable learning tasks that provide the students with immediate satisfaction are highly valued and therefore have high probability of being attended to. Assessment of the value and utility sometimes may result to cognitive dissonance which is described as a situation of conflicting beliefs. Cognitive dissonance among students may lead to stress that has adverse psychological effects. It is also associated with academic anxiety which creates states of psychological disequilibrium. Psychological imbalance makes the students to procrastinate academic tasks which negatively affects academic achievement.

Learning among secondary school students comprises of academic, social and talent development issues. In most educational settings, there is a lot of emphasis on academics but the students are also given opportunities to develop their talents and interact with peers and teachers for social and emotional development. As a result the students are presented with many competing goals which they are supposed to achieve. Some students end up focusing more on other activities at the expense of academic work. The competing goal makes the students to concentrate on activities that offer immediate gratification such as entertainment and co-curricular activities, a situation which makes them to postpone academic activities or procrastinate. Under such circumstances, academic work is considered to be of less utility but when examination approaches it's utility increases.

Even though the utility of academics increases during examination period, it offers little opportunity for meaningful learning. Consequently students who are fond of academic procrastination end up performing dismally in achievement tests.

There is empirical evidence that this theory has been useful in other studies. A study was conducted by Dorothea and Yovensius (2018) in Indonesia on goal orientation, self efficacy, test anxiety and their effects on procrastination. The study reported a significant positive association between test anxiety and academic procrastination. However self efficacy correlated negatively with academic procrastination.

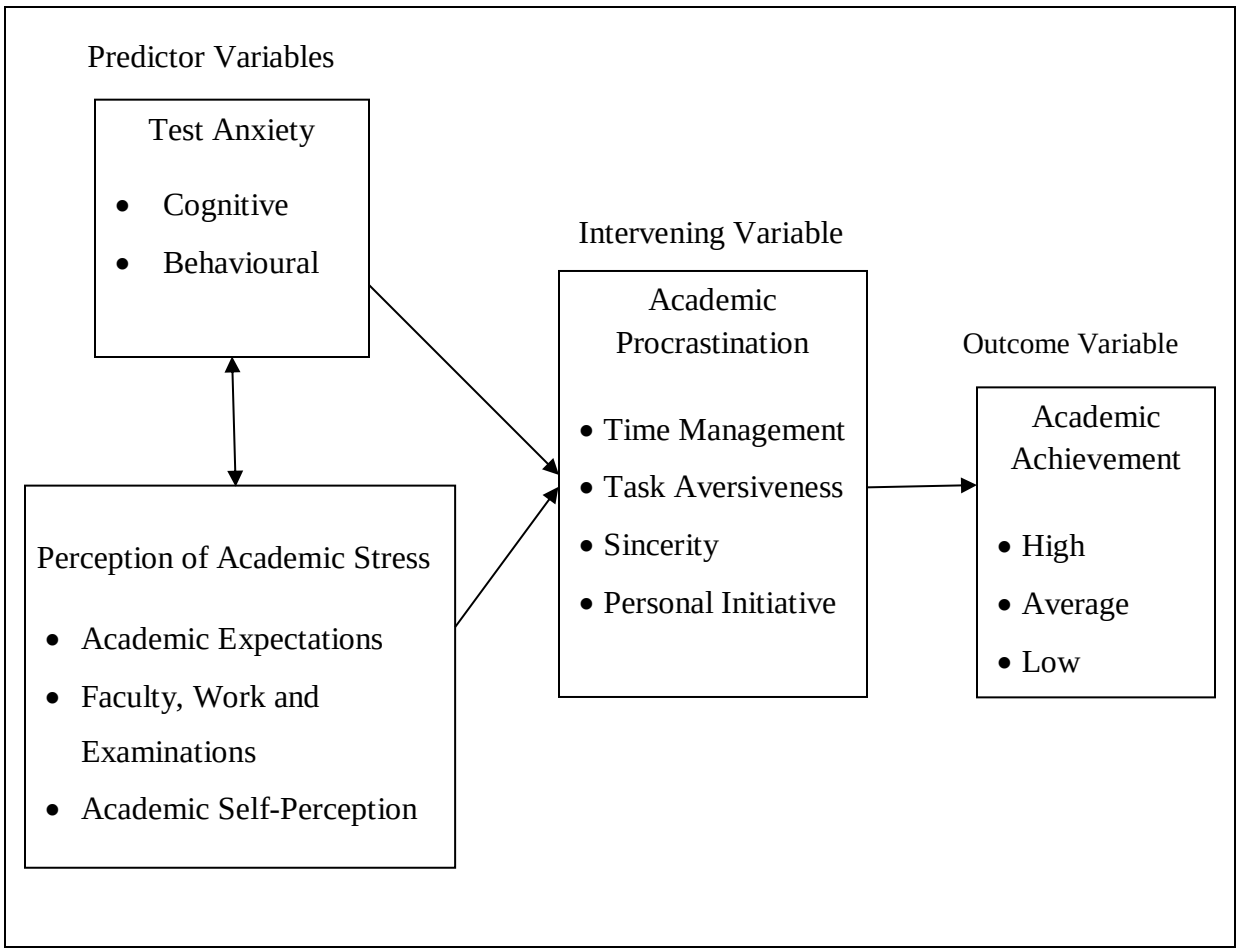
This theory provides a very important conceptual foundation of academic procrastination. It provides an appropriate hypothesis for the antecedents of academic procrastination and how they relate with academic achievement of the students. Informed by this theory, the researcher sought to find out the association between antecedents of academic procrastination and academic achievement among form three students in Gatundu South Subcounty, Kiambu County.

1.10.2 Conceptual Framework

The predictor variables of this study were test anxiety and perception of academic stress, the intervening variable was academic procrastination while the outcome variable was academic achievement.

Figure 1.1

Schematic Diagram Showing Association among the Study Variables



Source: Researcher conceptualization, (2021)

Figure 1.1 outlines the relationship among the study variables. The predictor variables were test anxiety and perception of academic stress. Test anxiety was at two levels: Cognitive and behavioural. Perception of academic stress was at three levels: Academic expectations, faculty, work and examinations and academic self-perception. The intervening variable was academic procrastination which had four levels: Time

management, task aversiveness, sincerity and personal initiative. Test anxiety, perception of academic stress and academic procrastination were hypothesized to be correlated with academic achievement. Additionally, they were expected to have a predictive weight on academic achievement.

1.11 Operational Definition of Terms

Academic Achievement

This was the student's grade as measured by the teacher during the end of third term in the year 2021. Interval level of measurement through scores on the Academic Achievement Proforma Table was used to measure this variable.

Academic Procrastination

This was the tendency by form three students in Gatundu South Subcounty to delay or postpone completion of academic tasks until the last minute. This can be school assignments, projects, homework and exam revision. The interval level of measurement through scores on the APS scale was used to measure this variable.

Antecedents of Academic Procrastination

These were the precursors of academic procrastination. In the current study the precursors of academic procrastination were test anxiety and perception of academic stress. The interval level of measurement through scores on APS scale was used to measure this variable.

Perception of Academic Stress

These are psychological responses experienced by form three students in Gatundu South Subcounty which threaten their learning abilities. The interval level of measurement through scores on the PAS scale was used to measure this variable.

Test Anxiety

This refers to phenomenological, physiological and behavioural responses that accompany form three students in Gatundu South Subcounty regarding possible negative consequences or failure in the face of test or examination conditions. This was reflected in the TAS scale.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter focuses on the literature concerning the relationship between test anxiety and academic procrastination, relationship between perception of academic stress and academic procrastination and relationship between academic procrastination and academic achievement. Further, a review of studies on the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination is given. Finally, the summary of reviewed literature is presented.

2.2 Relationship between Test Anxiety and Academic Procrastination

A study by Jelena and Aleksandra (2018), aimed at revealing the link between anxiety and academic procrastination among students. The participants were 60 second year students from Latvia University in Europe who were aged between 20-27 who had been enrolled in the faculty of Engineering. The study showed that 48% of the participants had high level, 27% medium level and 25% low level of academic procrastination. The link between situational and personal anxiety and academic procrastination was revealed. Situational anxiety was a condition characterized by subjectively experienced emotions like; nervousness, anxiety, stress and inability to make a decision while personal anxiety was the tendency to perceive situations as threatening and reacting to them with anxiety. The findings showed that an increase in situational and personal anxiety, increased the level of academic procrastination. The respondents were aged between 20-27 years thus they were older as compared to the respondents in the current study who were aged

between 16-18 years. The study focused on the impact of situational and personal anxiety on academic procrastination, whereas the current study focused specifically on cognitive and physical anxiety and their relationship with academic procrastination.

Ezdihar (2017), investigated the association between test anxiety and academic procrastination with self-efficiency among university students based on gender variables. The study included a sample of 702 male and female university students in Mu'tah university, Jordan. The findings showed a significant and positive statistical relationship between test anxiety and academic procrastination among the participants. Additionally there were virtual differences between the means for students responses on the test-anxiety, academic procrastination and the self-efficiency scales based on both gender and specialty variables. In addition to test anxiety the study involved extra variables which were self-efficiency and gender while the respondents were university students, however the current study focused only on one variable that is test anxiety and the respondents were secondary school students.

In Jordan, Abdu (2013), conducted a study to explore the association between academic procrastination, test anxiety, study satisfaction and academic performance. The study selected 573 high school students from Jordan. The students were in grades 10-12 with an average of 17 years. The study found that academic procrastination was significantly associated with test anxiety. This implies that high levels of test anxiety are associated with high tendency of academic procrastination behaviours. Test anxiety was found to be positively correlated with academic procrastination, poor academic achievement and study satisfaction. It was also found that students who are less satisfied with their studies

delay completion of assignments compared to those students who are more satisfied with their academic work. The study's respondents were only male students, it focused on two extra variables which are academic performance and study satisfaction. However the current study's respondents were both male and female students and it focused only on two variables which are test anxiety and academic procrastination.

A study by Nwamuo and Ihekwaba (2014), studied the level of test anxiety among college students in Owerri, Imo State in Nigeria. The study targeted 2050 university students out of which a sample of 205 students were sampled to be involved in the study. The sample size was 10% of the target population. To obtain the sample size, the students were randomly selected using a systematic approach. The findings revealed that a majority of the students had high levels of test anxiety. The high levels of test anxiety was found to affect concentration and academic performance. The researcher also revealed that students who experience test anxiety tend to be easily distracted during a test, experience difficulty with comprehending instructions and have trouble recalling relevant information. The sample were college students and it researched only on test anxiety variable, while the current study's sample were secondary school students which focused on test anxiety and academic procrastination variables.

In Ghana, James (2010), conducted a study on the relationship between academic procrastination and test anxiety in statistics among graduate students. The sample was 103 Master of Education graduate students from University of Education, Winneba in the Central Region of Ghana. The results showed that a high rate of students had problems

which were linked with procrastination especially when studying for examinations, reading and completing writing assignment papers. The findings further revealed that academic procrastination resulting from task aversiveness and fear of failure correlated significantly to worth of statistics, test and class anxiety, computational self-concept, interpretation anxiety and fear of asking for help from the statistics lecturer. The study utilized a small sample size of 103 students and the respondents were post graduate students from Central Region of Ghana, hence there was a need to conduct a study with a larger sample size of 410 secondary school students from a different country that is Kenya.

A more elaborate study was conducted by Gichohi (2019), on the influence of anxiety on academic performance among Technical University students in Kenya. The researcher obtained a sample size of 357 out of a population of 5,000 students and employed correlational and regression designs. Stratified sampling method was used to ensure that there was equal representation in Mechanical, Infrastructure and Built environment, Electrical and Electronic, Architecture and Survey departments. Purposive sampling was used to exclusively focus on final year students. The findings showed that anxiety affected majority of the students in higher institutions of education especially among those who were pursuing demanding and difficult courses. The study concluded that high anxiety levels were a contributor to dismal academic achievement. Although the study was conducted in Kenya, the respondents were undergraduate students and this necessitated the researcher to conduct a study in a secondary school setting. Moreso the

study focused on the influence of anxiety on academic performance while the current study focused on the relationship between test anxiety and academic procrastination.

2.3 Relationship between Perception of Academic Stress and Academic Procrastination

Longitudinal studies have given support that perception of academic stress is positively associated with procrastination, as evidenced by Ashraf, et al. (2019), study on the effect of academic procrastination on academic stress among young adults. The researchers also explored the moderating role of peer influence resistance. Data were collected from university students in Rawalpindi and Islamabad in Pakistan. The sample comprised of 200 male and 200 female students. The report indicated a significant positive relationship between academic procrastination and academic stress. Female students procrastinated less and were more resistant to peer influence than the male students. However male students procrastinated more and were less influenced by their peers as compared to the female students. The findings illustrated that high levels of academic procrastination were associated with high levels of academic stress. The study was longitudinal, it focused on academic stress and the respondents were young adults aged between 18-25 years, however the current study was correlational, dealt with perception of academic stress and the respondents were aged between 16-18 years.

Another study by Wendy (2019), investigated how stress, self-esteem, self-efficacy, age, gender and number of hours worked were associated with academic procrastination. The participants were undergraduate 129 students from Dublin Business School in Ireland

Britain who were selected from different courses. The students were aged between 18 and 41 years. The findings illustrated that self-efficacy was negatively related while stress was positively related to academic procrastination and no relationship was found between self-esteem and academic procrastination. Among the 33-41 age groups the study found a significant difference between self-esteem and academic procrastination. Findings revealed no differences between academic procrastination, gender and hours worked. The study concentrated on general stress and it included a sample size of 129 students who were aged between 18-41 years. The current study focused on perception of academic stress and included a sample size of 410 secondary school students aged between 16-18 years.

In their study Meirav et al. (2021), investigated how academic procrastination was associated with online learning and academic stress among college students with learning disability and those without learning disability. The study sample included 173 first year and second year undergraduate students. A total of 96 respondents did not have any learning disability while 77 participants had learning disability. The results showed that respondents with learning disability recorded high levels of academic stress compared to those without learning disabilities. The study also found that there was no difference in academic procrastination between the two groups. Learning disability significantly predicted academic procrastination and academic stress. The researchers also found that academic self-efficacy mediated the relationship between the study varaibles. The study included an extra variable which is self efficacy and the sample were undergraduate students with and without LD. The current study focused on academic procrastination

variables and academic stress while the sample comprised of secondary school students without disabilities.

A related study by Abera (2010) researched on the link between academic procrastination and academic social activity with academic performance. The study sample comprised of 221 first year college students in Ethiopia. Findings revealed a significant difference in academic procrastination and the field of study. In addition it was found that there was a negative relationship between social study, academic procrastination and academic achievement. Besides, a statistically significant positive relationship existed between language, social study and natural science students'academic social activity and academic performance. Finally, academic social activity significantly predicted academic achievement. The sample comprised of diploma students and the study linked three variables which were academic procrastination, academic social activity and academic performance. However the current study used secondary school students as the sample and it linked two variables which were perception of academic stress and academic procrastination.

Considerable studies have linked stress level, academic performance with psychosocial adjustment and one of the studies is by Oketch-Oboth (2018). The study was done in the University of Nairobi, Kenya whereby a sample consisting of 265 female and 319 male students were selected using stratified random sampling techniques. Descriptive survey research design was used and the data was collected using both quantitative and qualitative methods that included questionnaires, interview schedules and focus group

discussions. A majority of the respondents (64.4%) were found to experience between moderate to high levels of academic stress. The association between stress and academic performance was statistically significant. Stress also had a statistically significant relationship with psychosocial adjustment. Similarly the relationship between psychosocial adjustment and academic performance was statistically significant. Chi-square and regression analyses revealed that the relationship between stress level and both academic performance and psychosocial adjustment was influenced by age, gender, locus of control, level of study and course of study. The study utilized a descriptive cross sectional research survey design and focused on general stress. However the current study utilized a correlational research design and it focused specifically on perception of academic stress.

2.4 Relationship between Academic Procrastination and Academic Achievement

A study by Betul (2017), investigated the association between assignment, exam performance and the academic procrastination tendencies in Distance Learning (DL) and Face to Face (FtF) learning environments among State University students in Instabul, Turkey. A study comprising of a sample of 88 university students in FtF and DL environments was conducted. The findings illustrated a negative association between students' academic procrastination and performance. However, in FtF environment only academic procrastination and examination scores were significantly related. In addition, a moderate correlation was found in FtF group while no correlation existed between total assignment and exam scores among distance learning students. The findings were as a result of research done in different learning environments (DL and FtF) in Turkey which

is a developed country, however the current study was done in a FtF learning environment in Kenya which is a developing country.

Charine (2015) explored the association between academic procrastination and performance in academics among secondary school students in South Africa. The sample consisted of 349 students who were selected from grades 8 to 12. A total of 167 respondents were male representing 47.9% while 180 students were female representing 51.6%. The age of the respondents ranged from 12 years to 19 years. The results indicated that there was a negative correlation between academic procrastination and academic achievement. This implies that higher levels of academic procrastination were associated with low scores in academic achievement and vice versa. Academic procrastination was not significantly related to demographic variables such as gender and age. The study used exploratory, cross-sectional research design however the current study used correlational design.

In their study Mojeed et al. (2007), researched on the correlates between mathematics achievement and academic procrastination among university undergraduate students. A sample of 150 students from the department of mathematics in the Universities of Ibadan and Lagos, Nigeria participated in the study. Findings showed that a significant correlation difference existed in the levels of procrastination and mathematics performance whereby low procrastinators performed better than students with moderate and high procrastination tendencies. Further results revealed that the students procrastinated the same way irrespective of their gender. The study focused only on

mathematics achievement and the findings used a small sample size of 150 university students. The current study established the academic achievement of all the 8 subjects taken by secondary school learners in Kenya and included a larger sample size of 410 high school learners. Academic achievement was the average grade acquired by the form three students during the end of term three exam in the year 2021 which was measured using Academic Achievement Proforma Table (See Appendix B, Section 1e).

A study by Chege (2015), investigated the effect of birth order on procrastination among Kenya Institute of Management (KIM) College students in Eldoret town, Kenya. The researcher adopted *ex post facto* design whereby a total of 30 male and 30 female respondents were involved. The sample included 20 firstborns, 20 middle children, and 20 last-borns who were purposively recruited. Results indicated that a total of 33 (55%) of the sample felt that birth order affected their motivation for doing things while a total 27 (45%) felt that they were not affected. A total of 28 (46.7%) procrastinated while 32 (53.3%) did not procrastinate. Meanwhile 35 (58.3%) respondents said that they usually gave up on difficult tasks while 25 (41.7%) of the respondents never did so. The conclusion was that there was a significant association between respondents' birth position and procrastination and most of those who procrastinated were a few middle borns and the last borns. The findings showed that there was a significant association between age of the respondents and procrastination. Out of the 28 respondents who procrastinated, 12 (42.9%) were males while 16 (57.1%) were females. The research used *ex post facto* design, sample size was 60 respondents and it focused on the relationship between procrastination, birth order, gender and the age of the students. However, the

current study used a correlational design, a larger sample size of 410 respondents and it focused on the association between academic procrastination and academic achievement.

2.5 Prediction Equation of Academic Achievement from Test Anxiety, Perception of Academic Stress and Academic Procrastination

Limited studies have been conducted to explore the relative predictive weight of test anxiety, perception of academic stress and academic procrastination on academic achievement. However, a study by Rahardjo and Juneman (2013) investigated the contribution of anxiety in operating computers and academic stress toward procrastination of students. The respondents in this research were 65 students sampled from Gunadarma University, Indonesia. By comparison, 45 were female respondents and 20 were male students. The research results showed a correlation between the anxiety in operating computers with academic procrastination. This suggested that the higher the levels of anxiety in operating computers the higher the tendency of academic procrastination among the students. The research dealt with general anxiety and academic stress and it involved a small sample size of only 65 students. However the current study specifically dealt with test anxiety and perception of academic stress and it involved a larger sample size of 410 students.

In a related study by Nihal and Ugur (2018), explored how perfectionism, anxiety and procrastination predicted academic achievement. The participants included 522 college students from State University in Turkey and the qualitative data was acquired by organizing a focus group interview with seven students. The findings revealed that the

three predictors, perfectionism, anxiety and procrastination, illustrated a high level and significant relationship with academic achievement. Correspondingly, the results indicated that among the variables, anxiety was the most powerful variable which affected academic achievement. The study focused on the link between perfectionism, anxiety, procrastination and academic achievement whereas the current study researched on the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

A study by Ugur (2017) examined the predictive relationship between motivation, procrastination, test anxiety and academic achievement. The research was carried out among university students in USA during the 2014-2015 academic year. There were 211 questionnaires which were collected from 124 female and 87 male students and were later used for data analysis. The study found that there was a significant association between motivation and academic achievement. The relationship between anxiety and academic achievement was not significant. Academic procrastination was negatively related to academic achievement. The study was done in a developed country involving a sample of university students. Hence there was a need to conduct a study in Kenya which is a developing country inorder to compare the findings.

In Nigeria, Okeke (2016), investigated the association between stress and academic achievement among university students in Imo and Kaduna States. A correlational type of survey design was used for the study while random sampling technique was used in selecting 337 students for the study. The findings of the research revealed that a

significant negative relationship existed between stress and academic achievement of students in Imo State and Kaduna State. No significant difference was revealed between Imo and Kaduna State students in the area of stress. A significant difference existed between male and female students in their coping strategies. The study focused on how stress, coping strategies and academic achievement were related whereas the current study investigated on how test anxiety, perception of academic stress and academic procrastination predict academic achievement.

A study by Mukolwe (2015), analysed the relationship between correlates of examination anxiety and academic performance. Correlates of examination anxiety included, academic procrastination, locus of control and academic resilience. The study utilized form four public secondary schools students; 203 boys and 156 girls who attempted 2012 KCSE examination in Kakamega County, Kenya. The study found that a majority of the students experienced high levels of test anxiety. Boys were found to have high levels of academic procrastination compared to girls. The study also found that examination anxiety was negatively related to academic achievement. A negative but insignificant relationship existed between locus of control and academic performance. Academic resilience and examination anxiety were negatively correlated. Among the variables that were studied, test anxiety was found to have the highest predictive value on academic achievement. The current study aimed at determining which of the variable; test anxiety, perception of academic stress and academic procrastination, best predicts academic achievement.

2.6 Summary of Reviewed Literature and Gap Identification

From the foregoing review of related literature, majority of the studies have indicated a relationship between test anxiety and academic procrastination. However most of the studies included other variables like situational anxiety, personal anxiety, self efficiency, study satisfaction, age and gender of the students which are not included in the current study.

Most of the studies conducted on the relationship between perception of academic stress and academic procrastination utilised a sample of older students whose age ranged between 18-25. This is in comparison to the students in the current study who were aged between 16-18. Unlike the current study, majority of the reviewed studies included the gender variable as they compared the rate of academic procrastination between female and male students.

Majority of the reviewed studies showed a negative association between academic procrastination and academic achievement. Some of the studies were conducted to compare the students' academic performance between different learning environment like distance and face to face. However in the current study the students were using face to face as the learning environment hence there was no essence of making any comparison.

Moreover studies regarding the prediction equation of academic achievement from the three predictor variables (test anxiety, academic procrastination and perception of academic stress) their findings, established that the variables significantly predicted

academic achievement. Majority of the studies were conducted in developed countries and the respondents were mostly university and college school students with limited studies on secondary school students. Thus, there was need for this research to be conducted in secondary schools in Kenya, which is a developing country.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter discusses the research design, research variables, location of the study, target population, sampling techniques and sample size determination. It also presents the research instruments, data collection techniques, logistical and ethical considerations and data analysis.

3.2 Research Design

The researcher employed a correlational research design to measure the relationship between test anxiety, perception of academic stress, academic procrastination and academic achievement. This design was the most suitable for this research because it investigated relationship between the variables without the researcher controlling or manipulating any of them. It was able to reflect the strength or direction of the relationship which could either be positive or negative. It was also ideal for gathering data from the natural settings and this helped the researcher to generalize the findings to real-life situations (Creswell 2012).

3.3 Research Variables

The predictor variables comprised of test anxiety and perception of academic stress while the intervening variable was academic procrastination and the outcome variable was academic achievement.The interval level of measurement through scores on the adapted scales was utilized in measurement of these research variables.

3.4 Research Methodology

The quantitative approach was employed in the current study. Questionnaires were used as the research instruments. In this approach, the measurement of study variables entailed the use of numbers.

3.5 Location of the Study

The research was conducted in Gatundu South Subcounty which is one of the twelve sub counties in Kiambu County, Kenya (See Appendix E). In total there were 39 public secondary schools which had upto form four class. Analysis using the 2019 KCSE results obtained from Gatundu South Subcounty Education Office showed that out of a total of 3,188 students who sat for the exam, 454 attained a mean grade of C+ and above. This meant that 14% of the students managed to acquire university admission. This percentage was slightly below the national cumulative percentage of 18.1% for the year 2019. Additionally, a total of 1154 (36%) of the students attained a mean grade of C, C- and D+, joined TVET institutions to acquire technical skills. However, a total of 1,580 of the students attained a mean grade of D and below whereby 632 attained grade D, some 801 had D- while 147 candidates scored E. This ranged at 50% of the students who did not qualify to get either university or TVET institutions' admission as shown in Table 3.1. The high percentage of students getting low grades therefore necessitated the choice of the locale of this research. The study also aimed to investigate whether psychological factors like test anxiety, perception of academic stress and academic procrastination could have contributed to academic under-achievement.

Table 3.1

Kenya Certificate of Secondary Education Overall Grade Summary for the year 2019

Grade	Gatundu South Subcounty Entry (3,188)	National Entry (693,263)
A	0	627
A-	10	5,796
B+	46	13,366
B	99	24,478
B-	130	35,340
C+	169	46,139
C	302	63,102
C-	358	83,358
D+	494	101,687
D	632	137,713
D-	801	152,339
E	147	29,318
Mean Score	4.048	4.298

Source: KCSE Examination Essential Statistics (2019)

3.6 Target Population

Target population was composed of form three students in 39 public secondary school in Gatundu South Subcounty (See Table 3.2). Form three students were preferred because they had only one year to prepare for their KCSE exam. It is at this level when necessary measures can be taken to address issues concerning test anxiety, perception of academic

and academic procrastination which may hinder their academic achievement. Overall the students are expected to improve their KCSE performance.

3.7 Sampling Techniques and Sample Size

3.7.1 Sampling Techniques

Proportionate, stratified and purposive sampling techniques were utilized in the current study. Since the sizes of the enrolled students were unequal; 748 girls, 711 boys and 1,666 CEDS, the researcher used proportionate sampling in the selection of 2 GBS, 1 BBS and 16 CEDS secondary schools. Selection of form three students from the schools sampled was done using purposive technique and the schools were classified into three categories namely GBS, BBS and CEDS secondary schools using stratified sampling techniques. A total of 410 students were sampled, comprising of 98 girls from GBS, 93 boys from BBS and 219 from CEDS secondary schools.

3.7.2 Sample Size

To determine the sample size the researcher was guided by guidelines given by Krejcie and Morgan, (1970) formula which yielded 410 out of a target population of 3,125 students as illustrated by Table 3.3.

The formula is illustrated;

$S=X^2NP(1-P)/d^2(N-1)+X^2P(1-P)$

Where S is the Sample size required

X2 is the table value of chi-square for 1 degree of freedom at desired confidence level (1.96x1.96=3.84)

N= the total population of students

P= Population proportion (It is assumed to be 0.50 since this will provide the maximum sample size

d= degree of accuracy expressed as a proportion (0.05)

Calculation for the sampled students is as follows:

$$\frac{3.84 \times 3125 \times 0.5(0.5)}{0.0025 \times 3124 + 0.96} = 342$$

According to Schofield et al. (1992), 20% of the questionnaires should be added inorder to cater for the ones which may not be filled, inadequately recorded or returned by the students. Therefore the number of questionnaires that were given out to the students were 410.

$$\frac{20}{100} \times 342 + 342 = 410$$

Table 3.2

Sampling Frame

School Category	Schools Targeted	Schools Sampled	Enrolled Students	Proportionate Sampling
Girls' Boarding	8	2	748	98
Boys' Boarding	6	1	711	93
Coeducational Day	25	16	1,666	219
TOTAL	39	19	3125	410

Source: Researcher, 2019

3.8 Research Instruments

In order to acquire the necessary information from the students, the researcher used a questionnaire as the research instrument which was sub-divided into five sections (See appendix B).

3.8.1 Students' Questionnaire

Section 1a included questions on the student's demographic data (age and gender) and school characteristics (type of school that is whether BBS, GBS or CEDS). Section 1b looked for information on participants test anxiety using Test Anxiety Scale (Cassady & Johnson, 2004). Section 1c solicited information on academic procrastination using Academic Procrastination Scale (Steel, 2010). Section 1d searched for information on perception of academic stress using Perception of Academic Stress Scale (Bedewy, 2013) and Section 1e explored information on academic achievement using Academic Achievement Proforma Table.

a. Test Anxiety (Cassady & Johnson, 2004)

This variable was measured using TAS, by Cassady and Johnson, (2004) (See Appendix B, section 1b). The researcher sought permission from the author to use the instrument. The authors agreed and the scale was therefore adapted (See Appendix C). The questionnaire comprised (items 1-20) which were divided into two subscales. The items were scored on a five point likert scale of 1=*Never*, 2= *Rarely*, 3= *Sometimes*, 4= *Often* and 5= *Always*. Cognitive subscale was measured by the summated score of 9 items and the scores ranged from 9 to 45. Behavioural subscale was measured by the summated score of 11 items. The score range was between 11 and 55, where a score of (11-25) implied low level of test anxiety, (26-40) showed moderate level of test anxiety and that of (41-55) depicted high level of test anxiety.

b. Perception of Academic Stress (Bedewy, 2013)

Data on this variable was obtained using PAS by Bedewy (2013), (See Appendix B, section 1d). The researcher sought permission from the author to use the instrument. The author agreed and the scale was therefore adapted (See Appendix E). There were 18 items on (PAS) scale which were divided into three subscales. Academic expectation subscale was measured by the summated score of 4 items and the scores ranged from 4 to 20. Faculty, work and examination subscale was measured by the summated score of 8 items and the scores ranged from 8 to 40. Academic self-perception subscale was measured by the summated score of 6 items and the scores ranged from 6 to 30. The scoring was done on a five point likert scale of 1= *Strongly Agree* (SA), 2= *Agree* (A), 3= *Neutral* (N), 4= *Disagree* (D) and 5= *Strongly Disagree* (SD). The scoring of this sub-scale was done by adding scores from each item. The score ranged between 18 and 90, where a score of between 66-90 implied high level of academic stress, score of 42-65 signified moderate level of stress and that of 18-41 depicted low level of academic stress.

c. Academic Procrastination (Steel, 2010)

This variable was measured using APS by Steel (2010) (See Appendix B, section 1c). The researcher sought permission from the author to use the instrument. The author agreed and the scale was therefore adapted (See Appendix D). The questionnaire comprised (items 1-20) which were divided into four subscales. Time management subscale was measured by the summated score of 4 items. Scores ranged from 1to 20. Task aversiveness subscale was measured by the summated score of responses to the 6 items and the scores ranged from 6 to 30. Sincerity subscale was measured by the

summated score of responses to the 7 items and the scores ranged from 7 to 35. Personal initiative subscale was measured by the summated score of responses to the 3 items and the scores ranged from 3 to 15. The items were scored to on a five point likert scale of 1= *Strongly Agree*, 2= *Agree*, 3= *Neutral*, 4= *Disagree* and 5= *Strongly Disagree*. Relatively high score (74-100) indicated students who procrastinated more, while students with average procrastination had moderate scores which were (47-73) and low scores (20-46) depicted motivated, focused and dependable individuals.

d. Academic Achievement

This variable was measured using Academic Achievement Proforma Table, designed for this purpose. In the year 2021 third term, mean score for the 8 subjects were obtained. The subjects included Mathematics, English, Kiswahili, Biology/Physics, Chemistry, History/Geography, Christian Religious Education (CRE) and Business/Agriculture. Mean scores ranged from A = (12 points), A- = (11points), B+ = (10 points), B (9 points), B- = (8 points), C+ = (7 points), C = (6 points), C- = (5 points), D+ = (4 points), D = (3 points), D- = (2 points) and E = (1 point). The average points were acquired by adding all the points from the 8 subjects and later dividing them by 8. Those students who score less than 32 points were low academic achievers, those who scored between 33 and 64 points were average and those who scored above 65 points were high academic achievers (See Appendix B, section 1e).

3.9 Pilot Study

Before commencement of the actual study, the research instruments were subjected to piloting by the researcher. One school which was exempted from the actual study was used during piloting. During piloting, a total of 41 participants (10% of the actual study sample size) was utilized. This size was appropriate for a pilot study according to Connelly (2008). The pilot was done in order to pretest the questionnaire for the purposes of ensuring clarity of instructions and items and determining their validity and reliability.

3.9.1 Validity of the Research Instruments

To enhance content validity of the instruments, the supervisor from the Department of Educational Psychology was consulted. Peer review was used to enhance face validity. The scales that were used in the study had already been proven to be valid. According to Cassady and Johnson (2004), TAS had a concurrent validity of .79, PAS had content validity of .81 (Bedewy, D. 2013), APS had convergent validity of .82 (Steel, 2010). The scales were suitable for the study since according to Olson and Larson (2009) validity of scales ranging from .61 -.89 are considered to be appropriate for a correlational study.

3.9.2 Reliability of the Research Instruments

The internal consistency for the two subscales measuring test anxiety as reported by Cassady (2004) was found to be 0.93. During piloting of the current study of test anxiety, the data obtained yielded an internal consistency ranging from .72 to .75 (See Table 3.3).

Table 3.3

Reliability Coefficients of Test Anxiety Scale

Subscales of TAS	Number of Items	Alpha Coefficients (Cassady, 2004)	Alpha Coefficients (Pilot Study)
CG	9	0.93	.75
BH	11	0.93	.72
Overall Scales	20	0.93	.72

Note. *N* = 41 CG = cognitive; BH = behavioural.

Bedewy (2015), reported high internal consistency reliability of .70. Aihie and Ohanaka (2019), conducted a study using 427 undergraduate students in a Nigerian University. The study reported internal consistency reliability of Perception of Academic Stress Scale to be 0.81. The pilot study for the adapted items of ; Academic expectation, faculty, work and examination and academic self-perception had an internal consistency of .75, .80, .76 and .78 respectively. This is as presented in Table 3.4.

Table 3.4

Reliability Coefficients of Perception of Academic Stress Scale

Subscales of PAS	Number of Items	Alpha Coefficients (Bedewy, 2015)	Alpha Coefficients (Pilot Study)
AEX	4	0.7	.75
FWE	8	0.7	.80
ASP	6	0.7	.76
Overall Scale	18	0.7	.78

Note. *N* = 41 AEX = academic expectations; FWE = faculty work and examination; ASP = academic self-perception.

In a study Steel (2010) used a sample of 83 graduate students from a number of disciplines who were enrolled in five sections of an introductory-level research methods course at a Midsouthern University in USA. The internal consistency reliability of the Academic Procrastination Scale had alpha coefficient of 0.7 (Steel, 2010). The pilot data

obtained from the four subscales had internal consistency ranging from .80 to .70. This is as presented in Table 3.5.

Table 3.5

Reliability Coefficients of Academic Procrastination Scale

Subscales of APS	Number of Items	Alpha Coefficients (Steel, 2010)	Alpha Coefficients (Pilot Study)
TM	4	0.7	.80
TA	6	0.7	.79
S	7	0.7	.72
PI	3	0.7	.70
Overall scale	20	0.7	.79

Note. N = 41 TM = time management; TA = task aversiveness; S = sincerity; PI = personal initiative.

3.10 Data Collection Techniques

In order to be able to collect data from the sampled schools, the researcher obtained research authorization letter and research permit from the National Council for Science and Technology. After obtaining the research permit, the researcher visited the sampled schools and conducted familiarization meeting with each school principal. The purpose of the study was explained to the principals and an appropriate day and time for collecting data was booked. In the day of data collection, the purpose of the research was thoroughly explained to the participants and their consent to participate in the study was sought (See Appendix A). Filling of the questionnaire took about 40 minutes and it was done in the presence of the researcher and the class teachers. With the help of the class teacher the researcher collected the completed questionnaires for coding. Additionally, form three class teachers were requested to provide academic achievement records which were used to obtain the participants' scores in the end of third term examination.

3.11 Logistical and Ethical Considerations

3.11.1 Logistical Considerations

Authorisation from Graduate school of Kenyatta University (See Appendix F) was obtained and in order to be allowed to progress on with the study, a research permit from the National Commission for Science Technology and Innovation (NACOSTI) was sought (See Appendix G). Authorization from Gatundu South Subcounty Director of Education was also solicited (See Appendix H). Meetings with the school principals were organized and the researcher clarified the main objective of the study and agreed on the date of data collection.

3.11.2 Ethical Considerations

The aim of this research was explained to the students and their consent to be involved in the research was sought (See Appendix A). Students were free to either choose to participate or withdraw from the study at whatever stage of the study. Those who were willing to participate were assured that the obtained information was meant for academic purpose only. Confidentiality of the information provided by the students was achieved by use of their school admission numbers instead of their actual names in order to keep the students identity anonymous.

3.12 Data Analysis

The quantitative data collected using questionnaires was coded and later entered into the computer for statistical analysis using the Statististical Package for Social Sciences SPSS (20.0). Descriptive statistics like percentages and frequencies were used to present the

outcomes of the quantitative data and they assisted the researcher to interpret, compare and make conclusions on the study. Inferential statistics were utilised to test the study hypotheses using suitable statistical tests.

H_{01}: There is no significant relationship between test anxiety and academic procrastination. Statistical test: Pearson's Product Moment Correlation Coefficient.

H_{02}: There is no significant relationship between perception of academic stress and academic procrastination. Statistical test: Pearson's Product Moment Correlation Coefficient.

H_{03}: There is no significant relationship between academic procrastination and academic achievement. Statistical test: Pearson's Product Moment Correlation Coefficient.

H_{04}: There is no significant prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

Statistical test: Multiple Regression Analysis.

CHAPTER FOUR

PRESENTATION OF THE FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter contains the findings of the study and interpretation of the results. It starts with the presentation of general and demographic information followed by descriptive statistics of antecedents of academic procrastination and its relationship to academic achievement among form three students in Gatundu South Subcounty. Each section is presented as per the study objectives, followed by hypothesis testing and discussion of the findings. The study objectives were organized as follows.

i. To find out the relationship between test anxiety and academic procrastination.
ii. To establish the relationship between perception of academic stress and academic procrastination.
iii. To determine the relationship between academic procrastination and academic achievement.
iv. To establish the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

4.2 General and Demographic Information

In this section the return rate of the research instruments and information on participants' sex, age and type of school is presented.

4.2.1 Return Rate of the Research Instruments

Table 4.1 presents the questionnaire return rate.

Table 4.1

Return Rate of Research Instruments

School Type	Questionnaires	Returned	Returned (%)
GBS	98	82	83.67
BBS	93	78	83.87
CEDS	219	182	83.11
Total	410	342	83.40

Note. N = 342 GBS = girls' boarding schools; BBS = boys' boarding schools; CEDS = Coeducational day schools.

The study involved a sample size of 410 students from, BBS, GBS and CEDS schools. A total of 410 questionnaires were administered out of which 98 were administered in GBS schools, 93 in BBS schools and 219 in CEDS schools. In total, 82 (83.67%) filled questionnaires were returned from the GBS schools, while 78 (83.87%) and 182 (83.11%) were returned from BBS schools and CEDS schools respectively. All the 410 questionnaires were collected, however during coding the researcher discarded 68 questionnaires. The criteria used to discard the questionnaires were: 28 of the respondents had left some questions unanswered also in majority of the statements, 40 of the respondents ticked multiple answers. The overall returned questionnaires were 342 which translated to a return rate of 83.4%.

4.2.2 Demographic Information of the Respondents

The research was carried out in BBS, GBS and CEDS schools and the sample consisted of both male and female students (See Table 4.2).

Table 4.2

Age, Gender and School Type of the Respondents

		Gender		Total
		Male	Female	
Type of school	GBS	0	82 (23%)	82 (23%)
	BBS	78 (23%)	0	78 (23%)
	CEDS	98 (29%)	84 (25%)	182 (54%)
Age	14-15	33 (10%)	21 (6%)	54 (16%)
	16-17	101(30%)	131 (38%)	232 (68%)
	18 years and above	42 (12%)	14 (4%)	56 (16%)
	Total	176 (52%)	166 (48%)	342 (100%)

Note. GBS = girls' boarding schools; BBS = boys' boarding schools; CEDS = Coeducational day schools.

Table 4.2 indicates that the number of male respondents was slightly higher than that of female respondents. Majority of the students representing 52% were male while female students were 48%. The researcher further categorized the male and female respondents according to the school type. In terms of gender of the respondents by school type, 78 (23%) male students were from the BBS schools while 98 (29%) male students were selected from CEDS schools. For the female students, 82 (23%) were sampled from GBS and 84 (25%) girls were sampled from CEDS schools. A total of 176 male and 166 females students participated in the study.

The study also collected data according to the age of the respondents. Majority of the students (68%) involved in the study were aged 16-17 years, while those aged below 15 years were 54 representing 16%. The respondents who were aged 18 years and above were 56 representing 16%. Table 4.2 also presents age category of the respondents by gender. The findings indicates that 33 (10%) male students and 21 (6%) female students were in the age category of 14-15 years. There were 42 (12%) male respondents and 14

(4%) female respondents aged 18 years and above. In the age category of 16-17 years, there were 131 (38%) female respondents and 101 (30%) male respondents.

4.3 Results of the Study

This sub-section presents the results of the study in line with the study objectives. First, the descriptive statistics for each study objective are presented. This is followed by the specific inferential statistics to test the null hypotheses. Then a discussion of the results is presented.

4.3.1 Relationship between Test Anxiety and Academic Procrastination

This sub-section presents the results of the first objective of the study. The first part of the descriptive analysis presents the relationship between test anxiety and academic procrastination while the second part presents the respective inferential statistics.

a. Description of Test Anxiety and Academic Procrastination Scores

The descriptive statistics of test anxiety and academic procrastination scores were determined and the findings presented in Table 4.3.

Table 4.3

Descriptive Statistics of Test Anxiety Scores

	N	Range	Min	Max	*Mean*	*SD*	*Skewness*	*Kurtosis*
	342	39.00	29.00	68.00	52.03	9.91	-.73	-.08

Note. *N* = 342 N = number; Min = minimum; Max = maximum; *SD* = standard deviation.

Table 4.3 shows statistics of test anxiety scores for a sample of 342 students. The mean score was 52.03 (*SD* = 9.91). The minimum score of anxiety among the students was 29.00, while the maximum score was 68.00 with a range of 39.00. The findings further showed a skewness coefficient of -.73 and a kurtosis coefficient of -0.78, which meant that the data had near normal distribution according to the ranges given by Hair et al. (2017).

The researcher conducted a further analysis to compute the levels of respondents' test anxiety scores. The respondents were categorized as having either low, average or high test anxiety. Those respondents who had a minimum score of 29 and a maximum score of 43 were in low level category while other respondents scoring a minimum of 44 and a maximum score of 54 were in average level category. Consequently the respondents with minimum score of 55 and a maximum score of 68 were in high level category (See Table 4.4).

Table 4.4

Levels of Test Anxiety Scores

	Frequency	Percent
Low level	71	20.76
Moderate level	109	31.87
High level	162	47.36
Total	342	100.0

Note. $N = 342$

Table 4.4 indicates that 20.76% of the respondents reported low level of test anxiety, 31.87% reported moderate level of test anxiety while 47.36% reported high level of test

anxiety. The results indicate that majority of the respondents involved in the research were significantly affected by test anxiety when they were taking exams.

Test anxiety comprised of two subscales: cognitive and behavioural. It was therefore necessary to conduct a descriptive analysis to find the mean, standard deviation, kurtosis, skewness, range, minimum and maximum scores of the two subscales. The results are presented in Table 4.5.

Table 4.5

Descriptive Statistics of Test Anxiety Subscales

Subscales	*N*	Min	Max	Range	*Mean*	*SD*	*Kurtosis*	*Skewness*
CG	342	12.00	34.00	22.00	23.90	4.84	.17	-.44
BH	342	12.00	41.00	29.00	28.95	5.92	-.07	.10

Note. N = 342. CG = cognitive; BH = behavioural; *SD* = standard deviation; Min = minimum; Max = maximum;

As observed in Table 4.5, the range for both cognitive and behavioural was 22 and 29, respectively. The minimum and the maximum score for the cognitive subscale was 12 and 34, while for the behavioural was 12 and 41. Students who had cognitive associated anxiety had a mean of 23.91 *(SD* = 4.84) while the students with behavioural associated anxiety had a mean of 28.96 *(SD* = 5.92). The coefficient of skewness for the cognitive was (-.44), while that of behavioural was (.10). The kurtosis score for the cognitive was .17 while that of behavioural was -.07. Having presented the descriptive statistics of the students' test anxiety subscales the researcher performed a further analysis to find out whether the two subscales were related. A bivariate correlation anlysis using Pearson Product Moment Correlation was done and the results are as shown in Table 4.6.

Table 4.6

Correlation Matrix of Test Anxiety Subscales

		CG	BH
CG	Pearson Correlation	1	.39**
	Sig. (2-tailed)		.00
BH	Pearson Correlation	.39**	1
	Sig. (2-tailed)	.00	

Note. N = 342. CG = cognitive; BH = behavioural.
**. Correlation is significant at the 0.01 level (2-tailed).

As observed in Table 4.6 there was a significant positive correlation between behavioural and cognitive subscales (r (342) = .39, p < .01). This meant that an increase in cognitive scores increased levels of behavioural scores. Having presented the descriptive analysis of the individual subscales of students' test anxiety scores, the following section presents a descriptive analysis of academic procrastination of the students.

Table 4.7

Descriptive Statistics of Academic Procrastination Scores

N	Min	Max	Range	*M*	*SD*	*Sk*	*Kur*
342	29.00	68.00	39.00	53.87	5.61	-.54	1.38

Note. N = 342. Min = minimum; Max = maximum; M = mean; SD = standard deviation; *Sk* = skewness; *Kur* = kurtosis.

The results of Table 4.7 show that the mean score of academic procrastination was 53.87 (SD = 5.61). The minimum score was 29.00 while the maximum score was 68.00. The findings showed a skewness coefficient of -.54 and a kurtosis coefficient of 1.38. Results showed that majority of the students had moderate levels of academic procrastination. Further, respondents were categorized as having either low, average or high academic procrastination. Those categorised as low had a score of between 29 and 49. Those

categorized as average had a score of between 50 and 56 while those who scored very highly had a score of between 57 and 68 (See Table 4.8).

Table 4.8

Levels of Academic Procrastination

	Frequency	Percent
Low level	91	26.60
Moderate level	129	37.71
High level	122	35.67
Total	342	100.0

Note. N =342

Results in Table 4.8 indicates that a majority of the students had considerable tendencies of academic procrastination. Specifically, 26.60% of the students had low level of academic procrastination, 37.71% reported moderate level of academic procrastination while 36.67% reported high levels of academic procrastination.

Academic procrastination has four scubscales: Time management, task aversiveness, sincerity and personal initiative. It was therefore necessary to conduct a descriptive analysis to find the range, mean, minimum and maximum, standard deviation, skewness and kurtosis scores of the four subscales as seen in Table 4.9.

Table 4.9

Descriptive Statistics of Academic Procrastination Subscales

	Minimum	Maximum	Mean	Standard deviation
TM	6.00	18.00	10.45	2.15
TA	11.00	24.00	16.85	3.36
S	8.00	24.00	19.23	2.96
PI	3.00	12.00	7.59	2.31

Note. N = 342. TM = time management; TA = task aversiveness; S = sincerity; PI = personal initiative.

As observed in Table 4.9, the minimum and maximum score for time management was 6 and 18, task aversiveness was 11 and 24, sincerity had 8 and 24 and personal initiative had 3 and 12 respectively. The mean for time management was 10.4 *(SD* = 2.15), task aversiveness had 16.8 *(SD* = 3.36), sincerity had 19.2 (*SD* = 2.95) and personal initiative had 7.5 *(SD* = 2.3).

Having presented the descriptive statistics of the students academic procrstination subscales the researcher performed a further analysis to find out whether the four subscales were related. A correlation matrix was performed and the results are as shown in Table 4.10

Table 4.10

Correlation Matrix of Academic Procrastination Subscales

		TM	TA	S	PI
TM	Pearson Correlation	1	.01	-.17**	.37**
	Sig. (2-tailed)		.84	.00	.00
TA	Pearson Correlation	.01	1	-.18**	-.26**
	Sig. (2-tailed)	.84		.00	.00
S	Pearson Correlation	-.174**	-.18**	1	-.00
	Sig. (2-tailed)	.00	.00		.96
PI	Pearson Correlation	.37**	-.26**	-.00	1
	Sig. (2-tailed)	.00	.00	.96	

Note. N = 342. TM = time management; TA = task aversiveness; S = sincerity; PI = personal initiative

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

As observed in Table 4.10, significant negative correlation existed between sincerity; time management, task aversiveness (r (342) = -.17, p< .01) and (r (342) = -.18, p< .01). This implies that an increase in sincerity score decreased time management and task aversiveness scores. There was a negative correlation between personal initiative and task aversiveness score (r (342) = -.26, p< .01). This meant that an increase in personal initiative score decreased task aversiveness score. However there was a significant positive correlation between personal initiative and time management score (r (342) = .37, p< .01), meaning that an increase in personal initiative led to an increase in time management.

b. Hypothesis Testing

The first objective of this research was to find out the association between test anxiety and academic procrastination. To find out if the two variables were significantly correlated, the researcher advanced the following hypothesis:

H_{01}: There is no significant relationship between test anxiety and academic procrastination.

To test the hypothesis, the collected data was analyzed using Pearson correlation analysis and the results are tabulated below in Table 4.11.

Table 4.11

Correlation Matrix between Test Anxiety and Academic Procrastination

		TATOTAL	APTOTAL
TATOTAL	Pearson Correlation	1	.18**
	Sig. (2-tailed)		.00
APTOTAL	Pearson Correlation	.18**	1
	Sig. (2-tailed)	.00	

Note. N = 342. APTOTAL = Academic procrastination total; TATOTAL = Test anxiety total.

From Table 4.11, the results indicate that test anxiety and academic procrastination had a positive correlation, (r (342) = .18, p = .00). Based on the results, the null hypothesis which stated that there existed no significant relationship between test anxiety and academic procrastination was therefore rejected, meaning that there is a relationship between test anxiety and academic procrastination. This findings indicate that an increase in test anxiety is associated with an increase in academic procrastination. This implied

that when the two subscales of test anxiety were combined they related to academic procrastination.

Inorder to establish the relationship between the two subscales of test anxiety and academic procrastination, a correlation matrix was performed and the results are presented in Table 4.12.

Table 4.12

Correlation Matrix of Test Anxiety Subscales and Aademic Procrastination

		CG	BH	APTOTAL
CG	Pearson Correlation	1	.39**	.38**
	Sig. (2-tailed)		.00	.00
BH	Pearson Correlation	.39**	1	.38**
	Sig. (2-tailed)	.00		.00
APTOTAL	Pearson Correlation	.38**	.38**	1
	Sig. (2-tailed)	.00	.00	

Note. *N* = 342 CG = cognitive; BH = behavioural; APTOTAL = Academic procrastination total.

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

The results in Table 4.12 indicated that, the relationship between the test anxiety subscales and academic procrastination score was positive but not significant (r (342) = .38), = $p < .01$) the null hypothesis was rejected.This meant that there is a relationship between test anxiety subscales and academic procrastination.

c. Discussion of the Results

The results indicating a significant positive relationship between test anxiety and academic procrastination support the results of past research studies conducted in this field. A study by Khan et al. (2019), that was conducted among university students found

that test anxiety and academic procrastination were significantly related. The study further reported that test anxiety and academic procrastination had a significant impact on a academic performance. The positive relationship between academic procrastination and test anxiety was attributed to the fact that students' academic preparedness which was enhanced by accomplishment of academic tasks and assignment on time made them less anxious and more confident when taking academic tests while unpreparedness and failure to accomplish academic tasks on time led to increased test anxiety.

Low levels of academic procrastination allow students to prepare adequately and hence become more confident about their ability to perform well in academics. This enables the students to control their arousal (test anxiety). On the other hand, learners with high levels of academic procrastination are usually unprepared which makes them to doubt their abilities resulting to increased levels of test anxiety. The findings of Khan et al. (2019) support the descriptive statistics of the current study. The results indicate that students with low levels of academic procrastination had low levels of test anxiety.

Another study by Balkish (2017) that was conducted among undergraduate students examined gender differences in academic procrastination, test anxiety academic performance. Aitken procrastination inventory and demographic form were used in the collection of data. The study results indicated that academic procrastination was negatively associated with academic performance and positively correlated to test anxiety. Furthermore, students postponing and delaying academic related tasks were associated with negative tendencies such as test unpreparedness and prior academic

failure. The study results suggest that assisting students in academic preparedness can help them deal with test anxiety. Another study by Seadati et al. (2017), reported that meta-cognitive skills training based on behavioral approach was successful in the reduction of academic procrastination and test anxiety among female students.

Similar results were reported by El Masri (2020) in a study that was conducted in Lebanon. The research examined the link between test anxiety and academic procrastination. The findings showed that there was a moderate and significant relationship between test anxiety and academic procrastination. Students who were found to have high levels of test anxiety had high tendencies to procrastinate. The findings demonstrate that test anxiety is significantly related to academic procrastination regardless of level of education. The results fit well in the expectancy theory used in this study. The proponents of the theory asserted that in the face of unpleasant academic experiences, students tend to postpone academic tasks.

The positive and significant association between test anxiety and academic procrastination seems to be constistent over time as evidenced by a study conducted by Onyeizugbo (2004). The research investigated the association between the dimensions of test anxiety in statistics and academic procrastination among graduate students in USA. The study also examined the prevalence of academic procrastination among the participants. The results showed that most of the 135 students who were involved in the study reported significant levels of academic procrastination. It was also found that there was a positive association between test anxiety integration and academic prostination.

The findings indicated that high levels of test anxiety led to high levels of academic procrastination and vice versa. The results also confirm that test anxiety affects student's academic behaviours regardless of the level of education.

In the same vein, Bolbolian et al. (2021), reported that test anxiety was related to academic procrastination tendencies. The research was conducted among 152 university students. The research design used by Bolbolian et al. was related to the design used by the current study. Even though the study used t-test to examine if there were differences in academic procrastination among students with different levels of test anxiety, the results support the findings of the present study. The mean differences in academic procrastination behaviours were in favour of students high levels of academic procrastination. Students with high levels of test anxiety reported high levels of academic procrastination tendencies compared to students with low levels of test anxiety. The results suggested that an increase in test anxiety could lead to an increase in academic procrastination tendencies and vice versa. These results are alike with those of the current research. Clearly, the results demonstrate that test anxiety is an important construct that should be addressed when training students on strategies of curbing academic procrastination.

4.3.2 Relationship between Perception of Academic Stress and Academic Procrastination

This sub-section presents the results of the second objective of the study. The first part of the descriptive analysis presents the relationship between perception of academic stress and academic procrastination while the second part presents the respective inferential statistics.

a) Description of Perception of Academic Stress Scores

Table 4.13 present the descriptive statistics of perception of academic stress scores.

Table 4.13

Descriptive Statistics of Perception of Academic Stress Scores

N	Min	Max	Range	*Mean*	*SD*	*Skewness*	*Kurtosis*
342	41.00	63.00	22.00	49.26	4.36	.13	.28

Note. *N* = 342 Min = minimum; Max = maximum; *SD* = standard deviation.

Table 4.13 indicates that the minimum score was 41.00 while the maximum score was 63.00 with a range of 22.0. The mean score was 49.26 *(SD* = 4.36). The skewness coefficient of 0.13 indicated that the scores had a near normal distribution. The kurtosis coefficient was 0.28 indicated that the distribution of the scores was platykurtic. The researcher categorized the participants as having either low, average or high perception of academic stress. Those categorised as low had a score of between 41 and 47. Those categorized as average had a score of between 48 and 54 while those who scored very highly had a score of between 55 and 63. The results are as shown in Table 4.14.

Table 4.14

Levels of Perception of Academic Stress

	Frequency	Percent
Low level	85	24.85
Moderate level	219	64.03
High level	38	11.12
Total	342	100.0

The results in Table 4.14 indicate that 24.85% of the students involved in the study reported low level of academic stress while a majority representing 64.03% reported

moderate level of academic stress and 11.12% of the students reported high level of academic stress.

Perception of academic stress had three subscales; academic expectations, faculty work and examination and academic self-perception. The results of descriptive analysis were as shown in Table 4.15.

Table 4.15

Descriptive Statistics of Perception of Academic Stress Subscales

PAS Subscales	*N*	Min	Max	Range	*Mean*	*SD*	*Kurtosis*	*Skewness*
AEX	342	4.00	17.00	13.00	10.71	2.49	.088	-.50
FWE	342	14.00	36.00	22.00	23.51	3.88	2.54	.90
ASP	342	7.00	19.00	12.00	14.17	2.97	-.34	-.63

Note. *N* = 342; AEX =academic expectations; FWE = faculty, work and examination; ASP = academic self-perception; Min = minimum; Max = maximum; *M* = mean; *SD* = standard deviation; *Sk* = skewness; *Kur* = kurtosis.

As seen in Table 4.15 the range for academic expectations, faculty work and examination and academic self-perception was 13, 22 and 12 respectively. Academic expectations had a mean of 10.7 (*SD* = 2.49), faculty work and examination had a mean of 23.5 *(SD* = 3.88) and academic self-perception had a mean of 14.1 *(SD* = 2.97). Skewness for academic expectation and academic self-perception was -.50 and -.63. This meant that most of the participants rated themselves highly on the perception of academic stress sub-scales. However, the skewness for faculty, work and examination was .90 meaning that the respondents rated themselves low on the perception of academic sub-scales. The kurtosis scores for academic expectation, faculty work and examination and academic self-perception was .088, 2.54 and -.34.

The researcher performed a further analysis to find out whether the three subscales of perception of academic stress were related. A correlation matrix was done and the results are as shown in Table 4.16.

Table 4.16

Correlation Matrix of Perception of Academic Stress Subscales

		AEX	FWE	ASP
AEX	Pearson Correlation	1	.00	-.19**
	Sig. (2-tailed)		.97	.00
FWE	Pearson Correlation	.00	1	-.55**
	Sig. (2-tailed)	.97		.00
ASP	Pearson Correlation	-.19**	-.55**	1
	Sig. (2-tailed)	.00	.00	

Note. N = 342. AEX =academic expectations; FWE = faculty, work and examination; ASP = academic self-perception.

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

Table 4.16 shows that there was a significant negative correlation between academic expectations and academic self-perception (r (342) = -.19), = p < .01). Likewise a significant negative correlation existed between faculty, work and examination and academic self-perception (r (342) = -.55), = p < .01).

b) Hypothesis Testing

In objective two, the study aimed at establishing the association between perception of academic stress scores and academic procrastination. The following null hypothesis was tested:

H_{02}: There is no significant relationship between perception of academic stress and academic procrastination.

The research hypothesis was tested using Pearson product moment correlation analysis and the results are presented in Table 4.17.

Table 4.17

Correlation between Perception of Academic Stress and Academic Procrastination

		APTOTAL	PASTOTAL
APTOTAL	Pearson Correlation	1	.29**
	Sig. (2-tailed)		.00
PASTOTAL	Pearson Correlation	.29**	1
	Sig. (2-tailed)	.00	

Note. N = 342. APTOTAL = Academic procrastination total; PASTOTAL = Perception of academic total.

Table 4.17 shows that perception of academic stress and academic procrastination were positively correlated, (r (342) = .29), p = .00). The correlation was statistically significant. The null hypothesis which stated that there existed no significant relationship between perception of academic stress and academic procrastination was therefore rejected. The findings suggest that an increase in perception of academic stress was associated with an decrease in academic procrastination and vice versa.

Inorder to establish the association between the three subscales of perception of academic stress and academic procrastination, a correlation matrix was performed and the results were as shown in Table 4.18.

Table 4.18

Correlation Matrix of Perception of Academic Stress Subscales and Academic Procrastination

		AEX	FWE	ASP	APTOTAL
AEX	Pearson Correlation	1	.00	-.19**	.16**
	Sig. (2-tailed)		.97	.00	.00
FWE	Pearson Correlation	.00	1	-.55**	-.09
	Sig. (2-tailed)	.97		.00	.08
ASP	Pearson Correlation	-.19**	-.55**	1	.40**
	Sig. (2-tailed)	.00	.00		.00
APTOTAL	Pearson Correlation	.16**	-.09	.40**	1
	Sig. (2-tailed)	.00	.08	.00	

Note. N = 342. AEX =academic expectations; FWE = faculty, work and examination; ASP = academic self-perception; APTOTAL = academic procrastination total.
**. Correlation is significant at the 0.01 level (2-tailed).

The result in Table 4.18 indicated that, there was a positive and significant corrrelation between academic expectations and academic procrastination scores (r (342) = .16), = p < .01). Also a significant positive correlation existed between academic self-perception and academic procrastination scores (r (342) = .40), = p < .01). However there was a non-significant negative correlation between faculty work examination and academic procrastination scores (r (342) = -.09), = p < .01). Thus the null hypothesis was rejected. This meant that there is an association between perception of academic stress subscales and academic procrastination.

c) Discussion of the Results

The current research found that there was a significant positive association between perception of academic stress and academic procrastination. The results were consistent with the findings of Ashraf et al. (2019) in a study aimed at examining how academic stress predicted academic procrastination among young adults and the moderating role of peer influence resistance. The study was conducted on a sample size of 400 young adults selected from various universities in Pakistan. Half of the sample size constituted of males and the other half females within an age bracket of (18-25) years. The findings of this study showed that regardless of the age of the respondents there existed a significant positive association between academic stress and academic procrastination. This results were attributed to the fact that excessive academic stress causes lack of concentration which makes the students unable to attend to assignments leading to academic procrastination.

Another research study by Wendy (2019), supports the findings of the current study. The research aimed at examining the role of stress, self-esteem, age and gender on university students' completion of academic tasks. The study involved 129 participants comprising of males and females selected from Dublin Business School in Britain. The results of this study showed that there existed a positive relationship between academic stress and academic procrastination. When students are stressed, they tend to have challenges in school adjustment which leads to wastage of time thus making the students to procrastinate.

According to Custers (2018), academic stress was significantly related to educational retardation. The study was conducted among nursing students who were enrolled for a diploma course in Southwestern university, Pennsylvania. The study found that there was a low but significant association between academic stress and educational retardation associated with poor time management strategies. The study also found that regardless of the demographic variables of the students, academic stress was associated with the students' time management strategies. Since academic procrastination is a concept defined on the basis of time management, the results obtained are in line with the findings of the current research. The results obtained corroborate the principles of temporal motivation theory used in this research. The theorist argued that there is a low probability of students to attend to educational tasks that are perceived to be more stressing. On the other hand, there was a high probability of students to complete academic tasks that are perceived to be less stressing. The principles outlined by the theory is what characterize academic procrastination tendencies among students.

Relatedly, Abdi et al. (2020) found that stress associated with fear of failure predicted academic stress among university students. The study was conducted among 198 students from Isfahan university, Iran. The research approaches employed by Abdi et al. resemble the ones used in the current research. The study also found that there was a positive association between fear of failure and academic procrastination tendencies. Respondents with high levels of fear of failure also had high levels of academic procrastination tendencies and vice versa. From the findings it was recommended that to help students

deal with academic procrastination tendencies, they should be trained to handle fear of failure so as to reduce academic stress.

Similar results were reported in a research done by Oboth (2018). The study aimed at investigating the relationship between stress level academic performance and psychosocial adjustment among students. In this study, a sample comprising of 319 male and 265 female students was selected from the University of Nairobi, Kenya. The data collected were analyzed using the Chi-square and regression analyses. The findings of this study revealed that the relationship between academic stress and academic performance was statistically significant. It was also discovered that age and gender were key factors that affected the relationship between stress level and both academic performance and psychosocial adjustment. This was ascribed to the fact that when learners are stressed, they are less motivated to complete school tasks on time because they engage more in stress relieving activities such as entertainment and games.

4.3.3 Relationship between Academic Procrastination and Academic Achievement

This section presents the results of the third objective of the study. Descriptive statistics of academic achievement scores, hypothesis testing on the association between academic procrastination and academic achievement and discussion of the results are presented.

a) Descriptive Statistics of Academic Achievement Scores

Table 4.19 present the descriptive statistics of academic achievement scores.

Table 4.19

Descriptive Analysis of Academic Achievement Scores

N	Min	Max	Rang	*Mean*	*SD*	*Skewness*	*Kurtosis*
342	38.55	62.48	23.93	50.00	10.00	.25	-1.60

Note. *N* = 342. Min = minimum; Max = maximum; *SD* = standard deviation.

Table 4.19 shows that the minimum score was 38.55 while the maximum score was 62.48 with a range of 23.93. The mean score was 50.00 (*SD* = 10.00). The skewness coefficient was 0.25 suggesting that the scores had a near normal distribution. The student's academic achievement was categorized into three categories namely; those who scored 40 and below were low academic achievers, those who scored between 41 and 60 were average academic achievers and those who scored above 61 were high academic achievers.

Table 4.20

Levels of Academic Achievement

	Frequency	Percent
Low level	101	29.53
Moderate level	116	33.92
High level	125	36.54
Total	342	100.0

Note. *N* = 342.

Table 4.20 indicates, 29.53% of the students had low level of academic achievement and 33.92% had moderate level of academic achievement while 36.54% of the students had high level of academic achievement. The results obtained indicate that generally the academic performance of a majority of the students was high. The results also indicated that a considerable number of the students were performing well in academics.

Table 4.21

Correlation Matrix between Academic Procrastination and Academic Achievement

		APTOTAL	TscoreAA
APTOTAL	Pearson Correlation	1	-.17**
	Sig. (2-tailed)		.00
TscoreAA	Pearson Correlation	-.17*	1
	Sig. (2-tailed)	.00	

Note. N = 342. Tscore AA = academic achievement total score; APTOTAL = academic procrastination score.

As seen in Table 4.21, the relationship between academic procrastination score and academic achievement score were negatively correlated (r (342) = -.17, p < 0.00). The correlation was statistically significant. The null hypothesis which stated that there existed no significant relationship between academic procrastination and academic achievement was thus rejected, this implied that an increase in academic procrastination resulted to a decline in academic performance and vice versa.

b) Hypothesis Testing

In objective three, the research aimed at establishing the association between academic procrastination and academic achievement. To achieve this, the following null hypothesis was tested.

$H_{03:}$ There is no significant relationship between academic procrastination and academic achievement.

The data were subjected to pearson product moment correlation analysis and the results are presented in Table 4.22.

Table 4.22

Correlation Matrix between Academic Procrastination Subscales and Academic Achievement

		TscoreAA	TM	TA	S	PI
TscoreAA	Pearson Correlation	1	.27**	.00	.09	-.05
	Sig. (2-tailed)		.00	.87	.07	.35
TM	Pearson Correlation	.27**	1	.01	-.17**	.37**
	Sig. (2-tailed)	.00		.84	.00	.00
TA	Pearson Correlation	.00	.01	1	-.18**	-.26**
	Sig. (2-tailed)	.87	.84		.00	.00
S	Pearson Correlation	.09	-.17**	-.18**	1	-.00
	Sig. (2-tailed)	.07	.00	.00		.96
PI	Pearson Correlation	-.05	.37**	-.26**	-.00	1
	Sig. (2-tailed)	.35	.00	.00	.96	

Note. N = 342. TM = time management; TA = task aversiveness; S = sincerity; PI = personal initiative;Tscore AA = total score of academic achievement.

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

The results in Table 4.22 indicated that, there was a significant association between time management and academic achievement score (r (342) = .27, p < 0.01). A relationship between task aversivenss and sincerity was positive but not significant having (r (342) = .00, p < 0.01) and (r (342) = .09, p < 0.01) respectively. However a significant negative correlation was observed between academic achievement and personal initiave (r (342) = -.05, p < 0.01).

c) Discussion of the Results

The results of this research showed that there exists a negative association between academic achievement and academic procrastination. The results were in line with the findings of Betul (2017) in a research conducted in Turkey. The study involved 88 participants selected from face-to-face (FtF) and distance learning environments. The findings of this study revealed that there was a negative correlation between academic procrastination and academic performance in both learning environments. It was also noted that academic procrastination and exam performance were correlated but only in the FtF learning environment. In DL environment no significant relationship was found between assignment scores and exam performance. However, a positive correlation was realized between assignment completion and academic performance in the FtF learning environment. This was attributed to the fact that students who procrastinate do not practice the concepts taught and hence end up forgetting most of the contents leading to poor academic performance.

Balkis (2017), found that academic procrastination negatively affected the student's academic achievement. The aim of the study was to investigate the association between academic procrastination, life satisfaction and academic achievement. The study involved a sample of Pamukkale university students in Turkey, while the current study involved a sample of high school learners. The findings confirmed that regardless of the level of study, the tendency to postpone academic tasks has a negative impact on academic achievement of the pupils. The study established that students with low academic procrastination tendencies performed better than students with high academic

procrastination tendencies. This is consistent with the temporal motivation theory by Steel and Konig (2006) which asserts that students who give priority to activities other than learning do not experience meaningful learning and performance even when the utility of academics increases during examiantions. The negative association between academic procrastination and academic achievement is that students who procrastinate do not get sufficient time to interact with the learning content. When such students are given achievement tests, they perform dismally because of poor mastery of learning content.

Another research by Goroshit and Hen (2019), was conducted among college students with learning disability in Israel. The results demonstrated that academic procrastination impacted negatively on academic achievement. The study further established that learning disability significantly moderated the relationship between academic procrastination and academic achievement. The study employed a research methodogy similar to the one used by the current research. The studies only differed in terms of the samples used and the locale. The results indicate that academic procrastination negatively affects academic achievement for both students with and without learning disability. In the area of the current study, the below average performance in academics may be attributed to academic procrastination tendencies. Descriptive statistics of the data collected showed that a significant number of students involved in the study reported considerable levels of academic procrastination.

Consistent with the results of the present study, Hayat et al. (2020) found that there was a negative association between academic procrastination and academic achievement. The

study was carried out among 317 medical students at Shiraz university, Iran. The aim was to establish the prevalence of academic procrastination and how it affected academic achievement. The findings showed that a majority of the students (49.9%) reported moderate levels of academic procrastination while 29.25% showed high levels of academic procrastination. High levels of academic procrastination were associated with low scores in academic achievement and vice versa. The study results also confirmed that academic procrastination is an issue of concern across different levels of study.

Mojeed et al. (2007), study aimed at examining the effect of procrastination on mathematics achievement. The research involved a sample size of 150 university students from two universities in Nigeria. During this study data collection was done using 35 items of academic procrastination. The findings of this study showed that academic procrastination and academic achievement in mathematics were correlated. In addition to that, the findings also revealed that students with low levels of procrastination performed better than those with high levels of procrastination. Results also showed that gender did not affect the levels of procrastination. Students who procrastinate assignments end up being overwhelmed by the huge volume of assignments. This makes them lack time to revise for the exams leading to poor performance in examinations.

Similar findings were reported by Chege (2015). The study aimed at probing the effect of gender, birth order and age on procrastination. This study was conducted on a sample size of 60 students selected from Kenya Institute of Management in Eldoret, Kenya. Data collection was done using questionnaires. The findings of this study showed that 55% of

the sample size felt birth order affected their procrastination levels while 45% felt it had no effect. It was also revealed that there was a significant connection between age and the procrastination levels. In addition to that, the findings showed that 58.3% of students did not continue doing the assignments when they came across something challenging in them. Students who fail to complete difficult assignments develop negative attitude towards the subject leading to low academic performance.

4.3.4 Prediction Equation of Academic Achievement from Test Anxiety, Perception of Academic Stress and Academic Procrastination

This sub-section presents the results of the fourth objective of this study which sought to determine the prediction equation of students' academic achievement from test anxiety, perception of academic stress and academic procrastination. First a descriptive analysis of students' test anxiety, perception of academic stress and academic procrastination was performed. This was followed by a correlation matrix of students' test anxiety, perception of academic stress, academic procrastination and academic achievement. Finally appropriate inferential statistics to test the hypothesis were conducted.

a. Descriptive Analysis of Test Anxiety, Perception of Academic Stress and Academic Procrastination

A descriptive analysis was performed inorder to obtain the range, mean, standard deviation, skewness and kurtosis of the variables. The results of descriptive analysis are presentd in Table 4.23.

Table 4.23

Descriptive Analysis of Test Anxiety, Perception of Academic Stress and Academic Procrastination

	N	Min	Max	Range	*M*	*SD*	*Sk*	*Kur*
TATOTAL	342	29.00	68.00	39.00	52.03	9.91	-.73	-.08
PASTOTAL	342	41.00	63.00	22.00	49.26	4.36	.13	.28
APTOTAL	342	29.00	68.00	39.00	53.87	5.61	-.54	1.38

Note. *N* = 342. TATOTAL = Test anxiety total; PASTOTAL = Perception of academic stress total; APTOTAL = Academic procrastination total: Min = minimum; Max = maximum; *M* = mean; *SD* = standard deviation; *Sk* = skewness; *Kur* = kurtosis.

As observed in Table 4.23, the range for the test anxiety was 39, for the perception of academic stress was 22 while that of academic procrastination was 39. The minimum score for the test anxiety, perception of academic stress and academic procrastination was 29, 41 and 29 while the maximum scores was 68, 63 and 68 respectively. The mean score for the test anxiety was (*M* = 52.03, *SD* = 9.91), perception of academic stress was (*M* = 49.26, *D* = 4.36) while that of academic procrastination was (*M* = 53.87, *SD* = 5.61). The coefficient of skewness for test anxiety, perception of academic stress and academic procrastination was -.73, .13 and -.54 respectively and their kurtosis was -.08, .28 and 1.38.

The researcher focused on finding out whether test anxiety, perception of academic stress academic procrastination subscales are correlated. Thus a bivariate correlation analysis using Pearson correlation was done as presented in Table 4.24.

Table 4.24

Correlational Matrix of Test Anxiety, Perception of Academic Stress and Academic Procrastination Subscales

		CG	BH	TM	TA	S	PI	AEX	FWE	ASP
CG	Pearson Correlation	1	.39**	.19**	.22**	-.19**	.34**	-.02	-.38**	.44**
	Sig. (2-tailed)		.00	.00	.00	.00	.00	.66	.00	.00
BH	Pearson Correlation	.39**	1	.04	-.27**	.34**	.47**	.11*	-.33**	.42**
	Sig. (2-tailed)	.00		.44	.00	.00	.00	.03	.00	.00
TM	Pearson Correlation	.19**	.04	1	.01	-.17**	.37**	.16**	-.22**	.47**
	Sig. (2-tailed)	.00	.44		.84	.00	.00	.00	.00	.00
TA	Pearson Correlation	.22**	-.27**	.01	1	-.18**	-.26**	.11*	.16**	.06
	Sig. (2-tailed)	.00	.00	.84		.00	.00	.04	.00	.27
S	Pearson Correlation	-.19**	.34**	-.17**	-.18**	1	-.00	.00	-.04	.09
	Sig. (2-tailed)	.00	.00	.00	.00		.96	.97	.39	.07
PI	Pearson Correlation	.34**	.47**	.37**	-.26**	-.00	1	.07	-.20**	.39**
	Sig. (2-tailed)	.00	.00	.00	.00	.96		.18	.00	.00
AEX	Pearson Correlation	-.02	.11*	.16**	.11*	.00	.07	1	.01	-.19**
	Sig. (2-tailed)	.66	.03	.00	.04	.97	.18		.97	.00
FWE	Pearson Correlation	-.38**	-.33**	-.22**	.16**	-.04	-.20**	.001	1	-.55**
	Sig. (2-tailed)	.00	.00	.00	.00	.39	.00	.97		.00
ASP	Pearson Correlation	.44**	.42**	.47**	.06	.09	.39**	-.19**	-.55**	1
	Sig. (2-tailed)	.00	.00	.00	.27	.07	.00	.00	.00	

Note. *N* = 342. CG = cognitive; BH = behavioural; AEX = academic expectations; FWE = faculty work and examination; ASP = academic self-perception; TM = time management; TA = task aversiveness; S = sincerity; PI = personal initiative.

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

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

Table 4.24 indicated a positive corrrelations between academic procrastination subscales (TM, TA, S, PI) and perception of academic stress subscales (AEX, FWE, ASP) with the

highest scores of (r (342) = .47), = p < .01). However there was a significant negative correlation between perception of academic stress subscales and Test anxiety subscales (CG, BH) with the scores (r (342) = -.38, = p < .01).

b. Hypothesis Testing

The fourth objective of this study sought to establish the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

The following null hypothesis was tested using regression analysis:

$H_{04:}$ There is no significant prediction equation for academic achievement from test anxiety, perception of academic stress and academic procrastination.

The researcher performed a multiple regression analysis to establish a predictive equation of test anxiety, perception of academic stress and academic procrastination on academic achievement.

Table 4.25

Model Summary of Test Anxiety, Perception of Academic Stress, Academic Procrastination and Academic Achievement

Model	*R*	*R Square*	*Adj.*R^2	*SEE*
1	.346[a]	.120	.112	9.42

Note. N = 342. Adj. R^2= Adjusted R^2; SEE = standard error of the estimate.

a. Predictors (Constant): Perception of academic stress, test anxiety, academic procrastination

Table 4.25 shows that the multiple correlation coefficient is 0.346 which indicates an average prediction of academic achievement from test anxiety, academic procrastination and perceived academic stress. R square is 0.12 which implies that 12% variance in

academic achievement is explained by test anxiety, perception of academic stress and academic procrastination.

The researcher performed a further regression analysis to establish whether the three variables combined predicted academic achievement. The results on the statistical significance of the regression model are presented in Table 4.26.

Table 4.26

Regression Analysis of Prediction Equation of Test Anxiety, Perception of Academic Stress, Academic Procrastination on Academic Achievement

Model		*SS*	*Df*	*MS*	*F*	Sig.
1	Regression	4086.03	3	1362.01	15.33	.000[b]
	Residual	30013.96	338	88.79		
	Total	34100.00	341			

Note. N = 342. *SS* = sum squares; *Df* = degrees of freedom; *MS* = mean square; F = critical value

a Predictor Variables (Constant): Test anxiety, Perception of academic stress, Academic procrastination

a. Outcome Variable: Academic Achievement Score.

Table 4.26 presents the regression analysis of the study variables. The F ratio indicates that test anxiety, perception of academic stress and academic procrastination significantly predicted academic achievement, (F (3,338) = 15.338, P = .00). The regression analysis is presented in Table 4.27.

Table 4.27

Predictive Equation of Test Anxiety, Perception of Academic Stress, Academic Procrastination on Academic Achievement

Model		Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	32.03	7.14		4.48	.00		
	TATOTAL	-.27	.05	-.26	-5.03	.00	.95	1.06
	APTOTAL	-.33	.10	.19	3.42	.00	.87	1.15
	PASTOTAL	.28	.12	.12	2.28	.02	.90	1.12

Note. *N* = 342. TATOTAL - Test anxiety total; APTOTAL - Academic procrastination total; PASTOTAL - Perception of academic stress total

[a]. Outcome variable : Academic achievement.

Table 4.27 show that the predictive value of test anxiety was -.27, academic procrastination was -.33 while that of perception of academic stress was .28. From the results, the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination is:

$\hat{y}$ = -0.27 TATOTAL -0.33APTOTAL + 0.28PASTOTAL

As indicated in the equation, academic procrastination has the highest negative predictive index followed by test anxiety. The results suggest that a unit change in test anxiety and academic procrastination results to -0.27 and -0.33 change in academic achievement respectively. On the other hand, a unit change in perception of academic stress leads to 0.28 change in academic achievement. The regression equation implies that an increase in test anxiety and academic procrastination results to a decline in academic achievement and vice versa. On the contrary, an increase in perception of academic stress leads to an increase in academic achievement and vice versa.

c. Discussion of the Results

A study by Gaber (2017) established that perceived stress was significantly higher among students than standard population. However appropriate coping and adaptive strategies which involve active coping, acceptance and planning were significantly associated with higher motivation and academic performance. The study was conducted among university students in San Antonio, Texas, USA. Students with effective stress coping strategies were found to persist in problem solving and planning to succeed had better scores in academic achivement and vice versa. This always motivates them to learn, move on and seek support which enbles them to perform well in academics. In the end, the students succeed in their academic endeavors. Based on these findings the below average academic performance among form three students in Gatundu South Subcounty can be attributed to low perception of academic stress which results to a don't care academic attitude, low academic motivation, poor planning and low academic achievement.

The findings of Luqian and Fuqiang (2018), were also in line with the findings of the current study. The study examined the association between academic procrastination, academic stress and academic achievement among university students in Wuhan, China. The study also explored academic procrastination as a mediator variable. The results showed that academic procrastination and academic stress significantly predicted academic achievement. The researchers also found that academic procrastination mediated the association between academic stress and academic achievement. The results imply that academic procrastination and academic stress are important variables that can be manipulated to enhance academic achievement among students.

Boreksi and Uyangor's (2018) findings are in line with those of the current study. The researchers indicated that there was a significant negative correlation between academic achievement with test anxiety (r = -.146, p = .001) and academic procrastination (r = -.245, p = .001). This was in accordance to their study which they conducted among Balikesir high school students in Turkey. The results also revealed that academic procrastination had the highest predictive value towards academic achievement. However, the study also established that apart from the two variables, there were other factors such as test relevance, family attitude and end of term grade.

The results of the current study indicates that students who reported low levels of test anxiety, academic procrastination and high levels of perceived academic stress performed better in their academics. These findings were consistent with those reported by Rasouli et al. (2019) study. The sample comprised of Azad university students in Babol, Iran. The study established that 0.31 (31%) of academic achievement could be explained by achievement motivation, academic motivation, test anxiety and academic procrastination. The study findings indicated that regardless of the level of education, age and cultural background decreased levels of test anxiety and academic procrastination among students results to improvement in academic achievement.

These findings were also in line with those reported by Zamani and Pouratashi (2018). The study examined the link between test anxiety, self-efficacy and academic achievement among Tehran university students in Iran. The results showed that there was a negative and significant relationship between test anxiety and academic achievement.

The regression analysis showed that test anxiety and self-efficacy had a significant predictive index on academic achievement. The researchers recommended that schools should work towards reducing test anxiety and enhancing academic self-efficacy for better academic performance.

Okoye and Onokpaunu's (2020), study findings were also in line with the results of the current study. The research explored test anxiety and academic procrastination as predictors of academic achievement among university students in Nigeria. The results showed showed that test anxiety and academic procrastination significantly predicted academic achievement. The researchers concluded that students must design effective coping mechanisms in order to attain optimal academic performance.

Based on the results obtained teacher should work towards reducing test anxiety, perception of academic stress and academic procrastination among students in order to enhance academic achievement. If students are suffering from test anxiety and academic stress they are not able to capture the learning content thus causing low performance in their academics. Likewise if the students procrastinates they dedicate more time on other activities at the expense of their studies. Thus they have very little time to study and this causes low academic achievement in the studies.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusion and implication of the findings based on the study objectives and the recommendations.

5.2 Summary

This study examined the antecedents of academic procrastination and its relationship to academic achievement among form three students in Gatundu South Subcounty. The study was carried out under four objectives; to find out the association between test anxiety and academic procrastination; to establish the association between perception of academic stress and academic procrastination; to determine the association between academic procrastination and academic achievement and to establish the prediction equation of academic achievement from test anxiety, perception of academic stress and academic procrastination.

In the first objective, the researcher sought to find out the association between test anxiety and academic procrastination. The study established that test anxiety and academic procrastination had a positive and significant correlation. This means that an increase in test anxiety increased academic procrastination.

The second objective sought to establish the association between perception of academic stress and academic procrastination. The findings indicated that there was a positive significant relationship between perception of academic stress and academic procrastination. This means that an increase in perception of academic stress increased academic procrastination.

The third objective of this research was to investigate the association between academic procrastination and academic achievement. The findings indicated that there was a negative relationship between academic procrastination and academic achievement. This means that an increase in academic procrastination decreased academic achievement.

The fourth objective of this research was to establish the prediction equation for academic achievement from test anxiety, perception of academic stress and academic procrastination. The findings showed that test anxiety, perception of academic stress and academic procrastination significantly predicted academic achievement score whereby academic procrastination had the highest negative predictive index.

5.3 Conclusions

Regarding the relationship between test anxiety and academic procrastination, the study found that the two variables were significantly related. The findings implied that the higher levels of academic procrastination, the higher the levels of test anxiety. Students who exhibited higher levels of academic procrastination were found to have higher levels of test anxiety which reduced academic achievement and vice versa. Based on the results,

secondary school students ought to be trained on how to curb test anxiety, perception of academic stress and also how to avoid academic procrastination. This can assist them to improve their level of preparedness during academic tests in order to enhance academic achievement.

A significant positive relationship was found between perception of academic stress and academic procrastination. The findings implied that an increase in the level of perception of academic stress, increased the level of academic procrastination among the students. Procrastination was characterized by postponing of academic tasks and low energy in attending to academic tasks. The implication of these findings was that higher levels of perceived academic stress are associated with increased academic procrastination behaviors and poor academic performance. Therefore, students should be trained on stress management coping strategies and how to respond and handle academic demands effectively to avoid academic procrastination.

The results of the study revealed that there was a significant negative correlation between academic procrastination and academic performance. High scores of academic procrastination resulted to reduced academic achievements among the students. These results implied that the higher the academic procrastination the lower the academic achievement scores and vice versa. Students with high academic procrastination were found to perform poorly than those who had low academic procrastination. Based on these results, secondary school learners should be trained on how to curb academic

procrastination by managing their time and scheduling their academic tasks properly in order to enhance academic achievement.

Regarding the prediction equation of academic achievement from the three predictor variables (test anxiety, academic procrastination and perception of academic stress), the findings established that the variables significantly predicted academic achievement. From the findings, academic procrastination had the highest negative predictive value followed by academic test anxiety. On the other hand, perception of academic stress had a positive predictive value towards academic achievement. These factors were found to explain 12% variance in the academic achievement score.

5.4 Recommendations

Based on the results, the following further research and policy recommendations were made:

5.4.1 Policy Recommendations

i. Since test anxiety was found to have a positive relationship with academic procrastination, therefore there is a need for the curriculum developers to integrate measures of coping with academic procrastination and exam anxiety in the syllabus.
ii. The findings of the study revealed a positive relationship between perception of academic stress and academic procrastination. Thus the school heads and the teachers should take the initiave of holding educational seminars, to guide students on how to respond and handle academic demands effectively to avoid academic procrastination.

Also guidebooks should be developed to help students deal with psychological stresses during preparation and undertaking of examinations.

iii. Negative relationship between academic procrastination and academic achievement was revealed in the study. Henceforth, the teachers and other stakeholders in education should assess students' needs and determine appropriate support measures that have an impact on their academic achievement.

iv. The results revealed that test anxiety, perception of academic and academic procrastination significantly predicted academic achievement. Hence secondary school administrators should use the results in the development of programs that enhance students' overall personal development by equipping them with skills on planning, time management, academic stress coping mechanisms, goal setting and test preparation strategies. These programs will enhance academic self efficacy, timely completion of assignments, test preparedness and achievement of goals, the academic qualities that are vital for better academic performance.

5.4.2 Recommendations for Further Research

i. This research focused only on three predictive variables of academic achievement and since the study found that the variables significantly predicted academic achievement, further research should be carried out to provide a comprehensive regression model on other factors that can be manipulated to enhance academic performance in secondary schools and enhance knowledge in this area.

ii. The research was conducted among secondary schools in Gatundu South Subcounty, Kiambu County in Kenya. Therefore, similar studies may be carried out in other counties in Kenya to confirm the findings of this research.

iii. The study was carried out using samples of Form three students in Gatundu South Subcounty Kiambu County, Kenya. Research including students from the other levels like secondary (form one, two and four), colleges and universities are recommended to broaden the scope of generalization of the study findings.

iv. In the study, questionnaire was used as the research instrument and since students may have either over rated or under rated themselves in the questions, perhaps other methods of data collection like interviews and focus group discussions would be used in order to crosscheck the consistency of the responses.

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APPENDICES

Appendix A: Informed Consent Form for the Students

My name is Magdalene Nungari Njuguna, a Master's student in Kenyatta University, School of Education. I am carrying out a research project to fulfil the requirement for the award of Master of Education in Educational Psychology. The topic of research is Antecedents of Academic Procrastination and its relationship with Academic Achievement among form three students in Gatundu South Subcounty, Kiambu County, Kenya. The findings will provide guidelines for enhancing students' academic achievement. Kindly fill in this questionnaire whose information will be treated with confidentiality. The information obtained from this study will be used for academic purpose only.

I consent to participate in the research by signing the consent form. I understand that this information is confidential and my consent is on condition upon the researcher complying with her duties and obligations under the Data Protection Act of Kenya.

Participant's Signature ---------- Date ----------

Appendix B: Questionnaire for Students

Section 1a: Students' Personal Details (Demographic Data).

Please read the following questions carefully and put a tick (√) in the brackets where appropriate.

1) What is your gender?

   ☐ Male

   ☐ Female

2) What is your age bracket?

   ☐ 14-15 years

   ☐ 16-17 years

   ☐ 18 years and above

3) Which type of school do you attend?

   a) Girls Boarding ☐

   b) Boys' Boarding ☐

   c) Coeducational Day ☐

Section 1b: Test Anxiety Scale (TAS) Cassady and Johnson (2004)

Tick on any of the following options as the statement applies to you.

Never (N), Rarely (R), Sometimes (S), Often (O), Always (A)

		N 1	R 2	S 3	O 4	A 5
	Cognitive					
1	My mind does not go blank during a test.					
2	I remember the information that I blanked on once I get out of the testing situation.					
3	When I start a test, I am easily distracted.					
4	During tests, I find myself thinking of the consequences of failing.					
5	At the beginning of a test, I am not nervous.					
6	During examination, I get so nervous that I forget facts I really know.					
7	Before taking a test, I rarely feel confident and relaxed.					
8	When I get my exams copy, it takes me time to calm down and begin.					
9	I do not worry so much before a major exam.					
	Behavioural					
10	I have visible signs of nervousness such as sweaty palms, shaky hands and so on right before a test.					
11	I do not have “butterflies in my stomach before a test.					
12	I do not feel nauseated before a test.					
13	I read through the test and feel that I do not know any of the answers.					
14	I do not panic before and during a test.					
15	I do not have trouble sleeping the night before a test.					
16	I make mistakes on easy questions or put answers in the wrong					

	places.					
17	I do not look forward to exams.					
18	I read and understand exams questions.					
19	After taking a test, I don't have feelings that I could have done better than I actually did.					
20	I do not feel my heart beating very fast during important examinations.					

Section 1c: Academic Procrastination Scale (APS) Steel (2010)

Tick on any of the following options as the statement applies to you.

Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA).

Time Management	SA 1	A 2	N 3	D 4	SD 5
1. I am continually saying I will do it tomorrow.					
2. I do not do things out of impulse.					
3. I make lists for tasks that need to get done, and when they need to get done.					
4. I am not overwhelmed by my daily tasks.					
Task Aversiveness					
5. I often find myself performing tasks that I had intended to do days before.					
6. I generally delay before starting on work I have to do.					
7. When I should be doing one thing, I will do another.					
8. I postpone starting in on things I don't like to do.					
9. I feel schoolwork takes a lot of time.					
10. I rather do something else that interest me and do my homework afterwards.					
Sincerity					

11. I do not delay with small assignments for days.					
12. I do not accomplish all the things I plan to do in a day.					
13. I don't have time enough to help avoid doing stuff at the last minute.					
14. I don't wait for the best time to do assignments.					
15. I do not delay tasks beyond what is reasonable.					
16. Studying makes me feel entirely miserable.					
17. When I'm done with my work, I don't check it over.					
Personal Initiative					
18. I like to get my work done right away when it is assigned to me.					
19. When I have a deadline, I don't wait until the last minute.					
20. When something is too tough to tackle, I don't believe in postponing it.					

Section 1d:Perception of Academic Stress Scale (PAS) Bedewy (2013)

Tick on any of the following options as the statement applies to you.

Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA).

Stresses related to academic expectations	SD 1	D 2	N 3	A 4	SA 5
1. The competition with my peers for grades stresses me out					
2. My teachers are critical of my academic performance					
3. Teachers have unrealistic expectations of me					
4. The unrealistic expectations of my parents stress me out					
Stresses related to faculty work and examinations					
5. The time allocated to classes and academic work is enough					
6. The size of the curriculum (workload) is excessive					
7. I believe that the amount of work assignment is too much					

8. Am unable to catch up if getting behind the work					
9. I have enough time to relax after work					
10. The examination questions are usually difficult					
11. Examination time is short to complete the answers					
12. Examination times are very stressful to me					
Stresses related to students' academic self-perceptions					
13. Am confident that I will be a successful student					
14. Am confident that I will be successful in my future career					
15. I can make academic decisions easily					
16. I fear failing courses this year					
17. I think that my worry about examinations is weakness of character					
18. Even if I pass my exams, am worried about getting a job					

Section 1e: Academic Achievement Proforma Table

Form 3 ENDTERM EXAM-TERM 3 2021

Cls	KCPE	Eng	Kis	Mat	Bio	Phy	Chm	Hst	Geo	CRE	Agr	Bst						Entry	Marks	Average	Points	Mean Grade	Added Value	Pos	Class Pos	Form
3B	246 C-	60 B-	62 B-	50 A		68 B	58 C+	46 C-		78 A-		61 B-						8	477	68.14	63	B	4	1	1	1
3B	251 C	60 B-	66 B	36 D	54 C		79 A-	78 A-		88 A		61 B-						8	461	65.85	60	B	2.571	2	2	2
3B	325 B	64 B-	66 B	53 C	44 D+		37 D	72 B+		76 A-	83 A							8	423	60.42	53	B-	-1.428	3	3	3
3B	222 D+	52 C	46 C-	50 C	42 D+		44 D+	40 D+		88 A		75 A-						8	397	56.71	48	C+	2.857	4	4	4
3B	277 C+	58 C+	60 B-	63 B-		37 D	33 D-	66 B		78 A-		51 C						8	395	56.42	48	C+	-0.142	5	5	5
3B	213 D+	58 C+	64 B-	31 D-	30 D-		44 D+	46 C-		76 A-	68 B							8	371	53	43	C	2.142	6	6	6
3B	236 C-	60 B-	64 B-	21 E	16 E		27 E	76 A-		78 A-	50 C							8	342	48.85	41	C	0.857	7	7	7
3B	273 C+	54 C	52 C	40 D+		24 E	18 E	78 A-		72 B+		77 A-						8	343	49	40	C	-1.285	8	8	8
3B	249 C	58 C+	40 D+	39 D	10 E		32 D-	38 D		84 A	70 B+							8	333	47.57	39	C	-0.428	11	11	11
3B	268 C	64 B-	58 C+	09 E	30 D-		29 E	76 A-		66 B	68 B							8	334	47.71	39	C	-0.428	10	10	10
3B	329 B	70 B+	30 D-	41 D+		37 D	29 E	56 C+		84 A		50 C						8	347	49.57	39	C	-3.428	9	9	9
3B	301 B-	60 B-	38 D	46 C-		20 E	32 D-		52 C	74 B+	67 B							8	337	48.14	38	C-	-2.571	12	12	12
3B	230 C-	48 C-	46 C-	44 D+		43 D+	19 E	64 B-		64 B-		43 D+						8	328	46.85	35	C-	0	13	13	13
3B	297 C+	54 C	30 D-	24 E		39 D	29 E	60 B-		80 A		57 C+						8	316	45.14	33	C-	-2.285	14	14	14
3B	275 C+	48 C-	44 D+	40 D+		33 D-	36 D		45 C-	66 B	27 E							8	312	44.57	32	C-	-2.428	15	15	15
3B	191 D	58 C+	44 D+	19 E	20 E		16 E	32 D-		74 B+	63 B-							8	294	42	32	C-	1.571	17	17	17
3B	220 D+	48 C-	44 D+	20 E	20 E		30 D-	48 C-		66 B	72 B+							8	300	42.85	32	C-	0.571	16	16	16
3B	253 C	58 C+	50 C	21 E	18 E		29 E	32 D-		50 C	63 B-							8	289	41.28	30	D+	-1.714	19	19	19
3B	231 C-	60 B-	32 D-	26 E	22 E		32 D-	52 C		72 B+	35 D							8	296	42.28	30	D+	-0.714	18	18	18
3B	308 B-	50 C	26 E	11 E	20 E		29 E	72 B+		72 B+	53 C							8	280	40	30	D+	-3.714	20	20	20
3B	283 C+	36 D	44 D+	02 E	18 E		11 E	74 B+		60 B-	40 D+							8	245	35	28	D+	-3	21	21	21
3B	235 C-	42 D+	46 C-	13 E		06 E	09 E	58 C+		64 B-	30 D-							8	238	34	27	D+	-1.142	23	23	23
3B	244 C-	54 C	26 E	01 E	44 D+		20 E	58 C+		52 C	25 E	55 C+						9	258	36.85	27	D+	-1.142	22	22	22
3B	220 D+	44 D+	44 D+	51 C	18 E			20 E		66 B	32 D-							7	255	36.42	26	D+	-0.285	24	24	24
3B	257 C	46 C-	40 D+	26 E	16 E		23 E	46 C-		60 B-	45 C-							8	257	36.71	25	D+	-2.428	25	25	25
3B	239 C-	28 E	40 D+	04 E	14 E		19 E	58 C+		74 B+	32 D-							8	237	33.85	25	D+	-1.428	26	26	26
3B	248 C	46 C-	30 D-	07 E	10 E		20 E	52 C		60 B-	43 D+							8	225	32.14	24	D	-2.571	27	27	27
3B	222 D+	38 D	14 E	06 E	20 E		11 E		47 C-	60 B-	60 B-							8	209	29.85	23	D	-0.714	29	29	29

Cls	KCPE	Eng	Kis	Mat	Bio	Phy	Chm	Hst	Geo	CRE	Agr	Bst						Entry	Marks	Average	Points	Mean Grade	Added Value	Pos	Class Pos	Form
3B	212 D+	42 D+	46 C-	21 E	14 E		39 D	32 D-		54 C	38 D							8	254	36.28	23	D	-0.714	28	28	28
3B	229 C-	54 C	24 E	14 E		17 E	20 E		46 C-	58 C+	42 D+							8	233	33.28	22	D	-1.857	30	30	30
3B	279 C+	50 C	44 D+	14 E	12 E		15 E	50 C		38 D	35 D							8	223	31.85	22	D	-3.857	31	31	31
3B	231 C-	38 D	34 D-	26 E	30 D-		29 E		40 D+	32 D-	58 C+							8	255	36.42	20	D	-2.142	32	32	32
3B	279 C+	30 D-	40 D+	20 E		16 E	07 E	38 D		46 C-	27 E							8	197	28.14	17	D-	-4.571	33	33	33
3B	256 C	34 D-	44 D+	04 E	02 E		13 E	46 C-		34 D-	32 D-							8	177	25.28	16	D-	-3.714	35	35	35
3B	230 C-	40 D+	34 D-	13 E	04 E		12 E	48 C-		26 E	33 D-							8	184	26.28	16	D-	-2.714	34	34	34
3B	191 D	36 D	20 E	06 E	08 E		14 E	46 C-		38 D	33 D-							8	168	24	15	D-	-0.857	36	36	36
3B	293 C+	52 C	30 D-	04 E	04 E		11 E	16 E		38 D	23 E							8	162	23.14	15	D-	-4.857	37	37	37
3B	215 D+	30 D-	40 D+	07 E	06 E		14 E		30 D-	38 D	17 E							8	165	23.57	14	D-	-2	38	38	38
3B	207 D+	26 E	28 E	21 E	06 E		16 E	38 D		46 C-								7	181	25.85	13	D-	-2.142	39	39	39
3B	211 D+	20 E	20 E	10 E	04 E		09 E	18 E		54 C	23 E							8	140	20	12	D-	-2.285	40	40	40
3B	279 C+	26 E	14 E	13 E	06 E		09 E	20 E		42 D+	17 E							8	130	18.57	10	E	-5.571	41	41	41
3B	190 D	24 E	24 E	03 E	10 E		02 E			40 D+	07 E							7	110	15.71	10	E	-1.571	42	42	42
3B	163 D-	20 E	20 E	03 E	04 E		08 E		28 E	20 E	30 D-							8	113	16.14	8	E	-0.857	43	43	43
3B	200 D+	14 E	12 E	03 E		03 E	11 E	16 E		30 D-	08 E							8	89	12.71	8	E	-2.857	44	44	44
3B	160 D-	16 E	06 E	01 E	04 E		05 E		20 E	28 E	08 E							8	80	11.42	7	E	-1	46	46	46
3B	190 D	18 E	20 E	03 E	01 E		08 E		28 E	20 E	07 E							8	98	14	7	E	-2	45	45	45
3B	193 D	16 E	02 E	01 E	04 E		05 E		12 E	12 E	03 E							8	52	7.428	7	E	-2	47	47	47
3B	193 D																	0	0	0	0	X	-3	48	48	48
3B	237 C-																	0	0	0	0	X	-5	48	48	48
3B	345 B																	0	0	0	0	X	-9	48	48	48
3B	228 C-																	0	0	0	0	X	-5	48	48	48
3B	307 B-																	0	0	0	0	X	-8	48	48	48

ADM	Name	Cls	KCPE	Eng	Kis	Mat	Bio	Phy	Chm	Hst	Geo	CRE	Agr	Bst						Entry	Marks	Average	Points	Mean Grade	Added Value	Pos Class	Pos Form
Average Per Subject				43.87	37.15	21.72	16.71	28.58	22.65	45.06	34.8	56.54	38.61	58.89													

Mean Grade Analysis

Cls	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	X	Y	Z	No Of Studs	Mean Point	Grade	KCPE	KCPE DEV	Target	Target DEV
3B	0	0	0	2	1	2	6	6	9	6	8	7	5	0	0	47	3.8936	D+	5.2766 C-	-1.3829	0	3.8936
Total	0	0	0	2	1	2	6	6	9	6	8	7	5	0	0	47	3.8936	D+	5.2766 C-	-1.3829	0	3.8936

Mean Grade Analysis By Gender

Appendix C: Test Anxiety Scale Authorization

Hello Magdalene,

You are certainly welcome to use any of my test anxiety or academic anxiety measures in your work. The version I currently use is the CTAS-2, because it has validated cut scores for the high, moderate, and low anxiety levels. But – any of the other versions work just fine! You can see all my measures on the website linked below for the academic anxiety resource center, but if you have any trouble getting a copy of an article or document, please let me know and I will follow up.

I hope your study goes well! I enjoy connecting with scholars around the world – and have worked several times with people in Kenya (mostly from MMUST and MOI) – but none have used my scale yet, that I know of. I'll be excited to hear the outcome of your work if you are willing to update when you have completed your study.

If I can be of any service, please let me know.

Jerrell

--

Jerrell C. Cassady, PhD (he/him/his)
Professor of Psychology
Co-Director – Research Design Studio (http://espace.bsu.edu/rds)
Director – Academic Anxiety Resource Center (http://espace.bsu.edu/aarc)
Program Director, Certificate in Institutional Research
Dept of Educational Psychology
Ball State University
jccassady@bsu.edu
765-285-8522

Appendix D: Academic Procrastination Scale Authorization

Please feel free to use the measure. Here's all my materials and their norms.

Best,

Piers

Piers Steel, Ph.D., Professor | Brookfield Management Research Chair
Haskayne School of Business, University of Calgary
444 Scurfield Hall, 2500 University Dr. NW
Calgary, AB, T2N 1N4
t. 403.220.8428 | f. 403.282.0095
e: piers.steel@haskayne.ucalgary.ca
w. https://haskayne.ucalgary.ca/ccal

r. http://procrastinus.com/

Appendix E: Perception of Academic Stress Scale Authorization

Dr. Dalia Bedewy <d.bedewy@ajman.ac.ae>

Apr 30, 2021, 1:55 PM

Dear Magdalene Njuguna,

Thank you for your interest to use the scale and for your dedication for the scientific life.

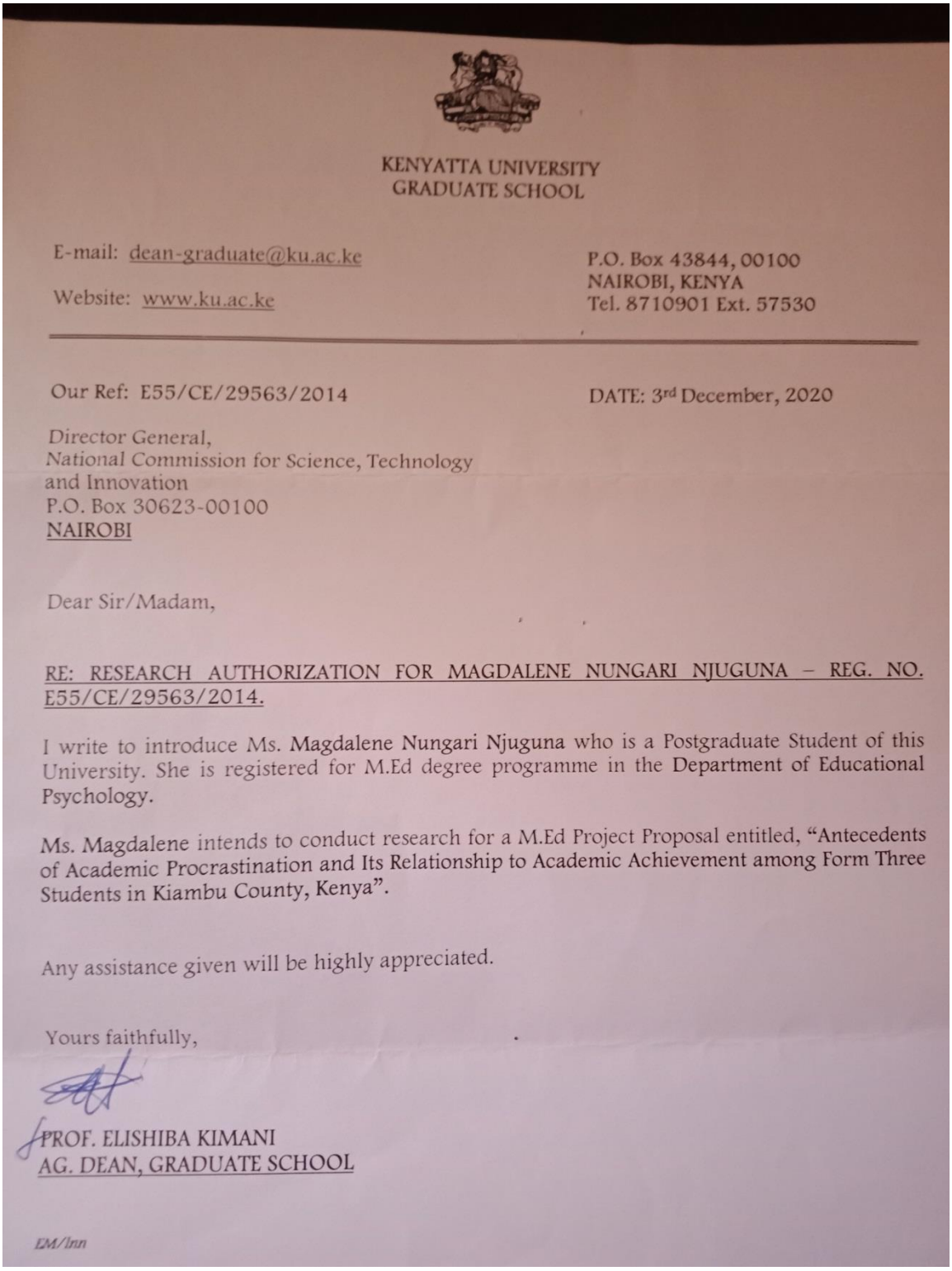
I gladly grant you permission to use the scale.

Kindly find the attached scale file.

Best of luck

Dr. Dalia Bedewy
Manager of Student Counselling Unit
College of Humanities and Sciences
United Arab Emirates
+
www.ajman.ac.ae

Appendix F: Graduate School Authorization



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

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

Our Ref: E55/CE/29563/2014

DATE: 3rd December, 2020

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

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MAGDALENE NUNGARI NJUGUNA – REG. NO. E55/CE/29563/2014.

I write to introduce Ms. Magdalene Nungari Njuguna who is a Postgraduate Student of this University. She is registered for M.Ed degree programme in the Department of Educational Psychology.

Ms. Magdalene intends to conduct research for a M.Ed Project Proposal entitled, "Antecedents of Academic Procrastination and Its Relationship to Academic Achievement among Form Three Students in Kiambu County, Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
AG. DEAN, GRADUATE SCHOOL

EM/lnn

Appendix G: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **938060**

Date of Issue: **19/February/2021**

RESEARCH LICENSE

This is to Certify that Ms.. MAGDALENE NUNGARI NJUGUNA of Kenyatta University, has been licensed to conduct research in Kiambu on the topic: ANTECEDENTS OF ACADEMIC PROCRASTINATION AND ITS RELATIONSHIP TO ACADEMIC ACHIEVEMENT AMONG FORM THREE STUDENTS IN KIAMBU COUNTY, KENYA for the period ending : 19/February/2022.

License No: **NACOSTI/P/21/8979**

938060

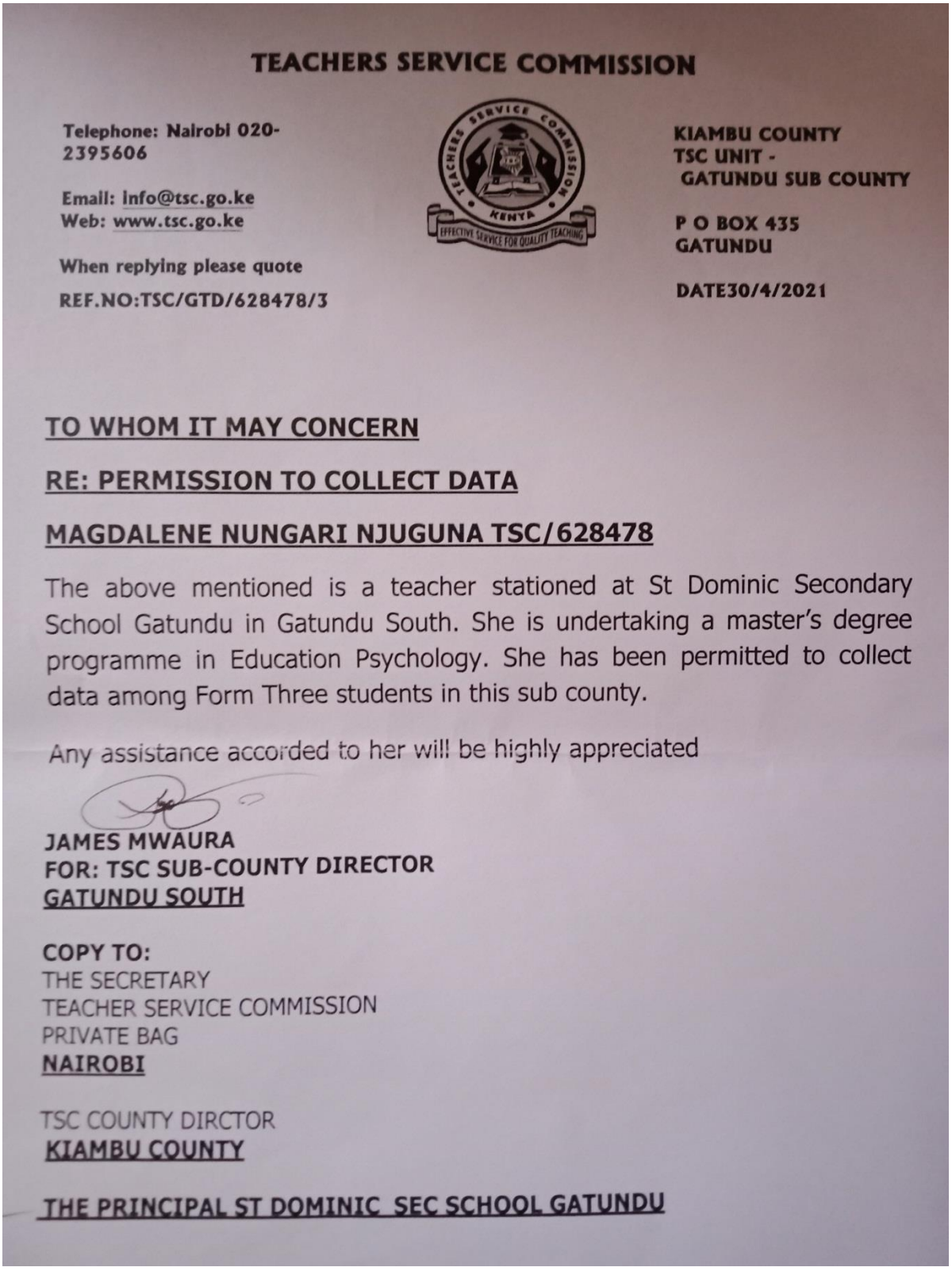
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

Appendix H: Research Authorization



TEACHERS SERVICE COMMISSION

Telephone: Nairobi 020-2395606

Email: info@tsc.go.ke
Web: www.tsc.go.ke

When replying please quote
REF.NO:TSC/GTD/628478/3

KIAMBU COUNTY
TSC UNIT -
GATUNDU SUB COUNTY

P O BOX 435
GATUNDU

DATE30/4/2021

TO WHOM IT MAY CONCERN

RE: PERMISSION TO COLLECT DATA

MAGDALENE NUNGARI NJUGUNA TSC/628478

The above mentioned is a teacher stationed at St Dominic Secondary School Gatundu in Gatundu South. She is undertaking a master's degree programme in Education Psychology. She has been permitted to collect data among Form Three students in this sub county.

Any assistance accorded to her will be highly appreciated

JAMES MWAURA
FOR: TSC SUB-COUNTY DIRECTOR
GATUNDU SOUTH

COPY TO:
THE SECRETARY
TEACHER SERVICE COMMISSION
PRIVATE BAG
NAIROBI

TSC COUNTY DIRCTOR
KIAMBU COUNTY

THE PRINCIPAL ST DOMINIC SEC SCHOOL GATUNDU

Appendix I: Map showing Gatundu South Subcounty, Kiambu County