SELECTED PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG
FORM THREE STUDENTS IN PUBLIC SECONDARY SCHOOLS IN
KIAMBU COUNTY, KENYA

NG’ANG’A MARIA WACERA
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DOCTOR OF PHILOSOPHY (EDUCATIONAL PSYCHOLOGY) IN THE
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MARCH, 2019
DECLARATION

I declare that this research thesis is my original work and has not been presented in any other university /institution for consideration of any certification. The thesis has been complemented by referenced sources duly acknowledged. Where text, data, 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-plagiarisms regulations.

Signature __________________________  Date __________________________

Maria Wacera Ng’ang’a

E83/23874/2013

We confirm that the work reported in this thesis was carried out by the candidate under our supervision as University Supervisors.

Signature __________________________  Date __________________________

Dr. Peter A. M. Mwaura

Department of Educational Psychology

Kenyatta University

Signature __________________________  Date __________________________

Dr. Jotham N. Dinga

Department of Educational Psychology

Kenyatta University
DEDICATION

For those children whom despite the demise of a caregiver, still face life positively.
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# ABBREVIATIONS AND ACRONYMS

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<tr>
<td>AGQ-R</td>
<td>Achievement Goal Questionnaire-Revised</td>
</tr>
<tr>
<td>C D E</td>
<td>County Director of Education</td>
</tr>
<tr>
<td>K C S E</td>
<td>Kenya Certificate of Secondary Education</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry Of Education</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Commission for Science, Technology and Innovation</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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ABSTRACT

In the last five years (2013 to 2017), poor academic achievement has been experienced in Kiambu County. This is despite government’s interventions and education being an important sector in individual and national development. Most researchers attribute this to socio-cultural and classroom environmental factors. Yet there could be certain personal factors affecting students’ academic achievement. The study was therefore designed to determine the relationships among students’ achievement goal orientation, perceived competence and academic achievement in Kiambu County. Differences in achievement goal orientation and perceived competence due to school type were also tested. The study was guided by the goal orientation theory and intelligence theory. The research adopted mixed methods sequential explanatory design. The study targeted all Form Three students in Kiambu County in 2017. Purposive sampling was used to select Gatundu South Sub-County. Using stratified random sampling, 12 schools were selected. Through proportionate stratified sampling, one girls’ only and one boys’ only boarding, one co-educational boarding and nine co-educational day schools were selected. Simple random sampling was used to select 665 participants. Achievement goal orientation and perceived competence scales were adopted and used to measure achievement goal orientation and perceived competence respectively. A pilot study on 40 students was conducted in a school within the County. Purposively, 40 respondents were selected from those who filled the questionnaires for an interview to cross check the quantitative data. Academic achievement was inferred from students’ examination grades obtained from school records. The quantitative data was analyzed using SPPS version 21. Qualitative data was analyzed thematically. To examine relationships among variables and school type differences, Pearson Product Moment Correlation Co-efficient and Analysis of Variance were used respectively. Hypotheses were tested p < .05 level of significance. To determine a prediction model, multiple regression analysis was used. The findings revealed that all the domains of achievement goal orientation significantly correlated to academic achievement (r (630) = .310, p<.05). The highest relationship was observed between performance avoidance (r (630) = .355, p<.05). All the two sub-scales of perceived competence were found to be negatively correlated to academic achievement. The highest relation was found between entity perceived competence r (414) = -.192 p < .01. The findings also revealed significant differences in the four domains of achievement goal orientation and flexible perceived competence given the categories of school types (F(12, 1872) = 10.334, p<.05); F(3, 409) = 3.980, p<.05) respectively. The difference for perceived competence was in favour of co-educational day and boys’ boarding. In addition, the equation for predicting academic achievement from achievement goal orientation and perceived competence was significant (F (5, 624) = 32.497, p< .05). Performance avoidance had the highest significant predictive value on academic achievement. In the exploratory part of the study, a significant gender difference was found with regard to perceived competence. Based on the findings, it was recommended that teachers, parents and all concerned stakeholders should create conducive environments that enhance students’ achievement goals. Overall, schools should have interventions to enhance students’ perceived competence in order to improve academic achievement.
CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter discusses the background to the study, statement of the problem, purpose of the study, objectives, and research hypotheses. It also discusses the significance of the study, scope, limitations and delimitation of the study. The theoretical and conceptual framework as well as operational definition of terms are also presented.

1.2 Background to the Study

Academic achievement of students may have implications on the nation’s future overall global competitiveness. As noted by Organization for Economic Cooperation and Development (OECD, 2007), deficiencies among poor performing students impact negatively for individual labour market, capacity to participate in society and earning prospects. In the year 2012, the Ministry of Education (MOE) pointed out that, education is a primary vehicle for socio-economic growth and national integration. Through education, a country’s goals and aspirations are realized. Also, individuals, society and the world at large are influenced and transformed.

Academic achievement is designated by grades, tests and examination scores which indicate students’ scholastic standing. Levin, Wasanga and Somerset (2011) pointed out that students’ grades in national examinations are not only a pointer of the school effectiveness but also a major determinant of the wellbeing of youth and nation in general. Society, educators, parents and governments attach high importance to students’
examination grades. This has drawn the attention of researchers for decades because good grades acts as major path for educational progress and social mobility.

Globally, good academic achievement is valuable for students as well as a country’s economic wellbeing. Today, national examinations results reveal significant trends and disparities. In the United States of America, the Department of Education (2015) revealed that academic achievement had dropped significantly. Available research indicates that the number of high achieving students is way below that of several leading developed nations like United Kingdom, Japan and China (Hanushek, Peterson & Woesmann (2010).

In Africa, most countries are in the process of development and education is vital to national development (Geta, 2012). Individuals with academic underachievement do not get access to higher education. Hence, they are less likely to participate and influence decisions which affect their lives as well as those of others (United Nations Educational, Scientific and Cultural Organization, UNESCO, 2008). Students’ academic underachievement has been reported in Tanzania as in many other African countries (Maganga, 2016). In Botswana research shows that the standard and quality of education is deteriorating as evident by high rates of failure at primary and secondary schools (Mwakwinja, 2017).
Academic underachievement is currently a serious problem in Kenya. Data from the MOE shows that Counties in Central Region had highest Net Enrolment Rate for secondary education compared to national average of 24.2% (MOE, 2012). In the 2015-2017 Kenya Certificate of Secondary Examination (KCSE), Kiambu County’s performance by mean score showed that majority of the secondary schools were between 4.4 - 2.5 categories respectively, out of the maximum 12 points (See Appendix E). This results as reported by the County Director of Education in 2016 and 2017 translate to above 75% failure rate. In KCSE 2015, 2016 and 2017, Gatundu South Sub-County attained a mean score of 4.47, 3.78 and 3.32 respectively, approximately 80 % failure rate (See Appendix F). The Sub-County’s mean score was below the County and national averages. There was a need to clearly understand how the variables in the current study impact on academic outcomes. This will give a more complete view of the causes of current students’ failure and timely intervention can be undertaken.

Locally, research indicates that a variety of factors affect students’ academic achievement. Such factors are either contextual or personal. Some studies tend to consider students’ academic achievement as an outcome related of contextual factors like school and family factors (Kimani, Kara, & Njagi, 2013; Kariuki, 2017). Another group of studies has examined how academic achievement is influenced by personal factors. These include: academic self-concept (Kwena, 2007); self regulated learning (Mutweleli, 2014); academic resilience (Mwangi, 2015); self-esteem (Mburung’a, 2016) and motivation (Gachigi, 2018). It is evident that studies have been carried out on the
different parameters which contribute to academic achievement, but little attention has been focused on the combined role of achievement goal orientation and perceived competence. Much of the available research conducted overseas indicates that when manipulated the factors can facilitate or hinder learners’ academic achievement (Yeung, Craven & Kaur, 2014). So there was need to undertake this kind of research in the Kenyan context.

In the field of education, achievement goal has been a central construct to explain students’ motivation for learning and subsequent academic achievement. According to Pintrich (2000, as cited in Matos, Lens & Vansteenkiste, 2007) achievement goal constructs reflect an organized system, theory, or schema for approaching and evaluating one’s performance in an achievement context. It also refers to energization and direction of behaviour, competence-based effect and cognition. In academic settings, achievement goal theory has been one of the most important frameworks to conceptualise students’ motivation to study, individual interpretations and experiences (Diseth, 2015).

Several motivation researchers have used achievement goal perspective to understand and explain academic outcomes (Elliot & McGregor, 2001; Law, Elliot, & McGregor, 2012; Meece, Anderman, & Anderman, 2006; Phan, 2014; Sideridis & Kaplan, 2011). Achievement goals represent the purpose or reason students engage in an academic learning task. In previous works, researchers distinguished between two types of achievement goals: mastery and performance goals. In mastery goals students are
motivated to understand learning material and develop skills, while in performance goals students are concerned with outperforming others. Both goals are linked to different patterns of learning. Elliot and McGregor (2001) proposed incorporation of approach and avoidance orientations to achievement goals. That is, the outcome can either be a success or failure. When students expect success, they are motivated towards an approach orientation, while, students expecting failure are motivated towards an avoidance orientation.

Elliot and Dweck (2005) states that at the core of academic outcomes is competence, and it is important to address an individual’s students conception of their ability, as this will be the force which guides achievement goals. Competence is applicable across a broad range of levels (Stevenson, 2011). This includes specific outcomes like grade on a test to characteristics like intelligence. Because of this, perceived competence must be considered in all achievement related settings, as it provides and moderates individual’s goal adoption.

Within the realm of educational psychology literature, perceived competence has been a central tenet of student motivation influencing the positive or negative possibilities (Betoret & Artiga, 2011; Paykachat, Paul & Ragaland, 2013; Sungur & Senler, 2010; Yoon, Weinstein, & Winker, 2011). It refers to belief in one’s capabilities as a general motivating factor which produces achievement outcomes (Elliot & Thrash, 2001). It may also represent individual confidence that one is able or unable to accomplish an academic
task. Studies posit that it can predict academic achievement and facilitate an active commitment to competence.

Social cognitive framework (Dweck, 1986) shows how maladaptive and adaptive behavioural and cognitive outcomes are related to individual differential levels of competence. In line with empirical research, low perception of ability coupled with performance goal may result into maladaptive behaviours. Further research has found a link between perceived ability (entity, flexible) and achievement goal (performance, mastery) with adaptive behaviours (Cury, Elliot, Da Fonseca, & Moller, 2006). Researchers have demonstrated that students with flexible perceived competence experience positive emotions during task engagement. They maximizes on the positive and minimize on negative possibilities while those with entity perceived competence experience less resilience and persistence after failure (Law, et al., 2012).

Research in the area of academic achievement has found a link between type of school which students attend and academic achievement (Otanga, 2016). Locally, girls and boys are taught seperately or together and either in boarding or day secondary schools. The differences in and within school type may be important factors which contribute significantly to students’ academic achievement (Mutweleli, 2014). These differences may impact positively or negatively on individual achievement goal orientation and perceived competence. This implies that school type, when included among the factors
that predict students’ academic achievement, may influence the predictive weight (Mwangi, 2015).

Relevant to the present study, achievement goal orientation and perceived competence can predict a number of achievement related outcomes (Tanaka & YaMauchi, 2001, as cited in Phan, 2014). It is against this background, therefore, that the current researcher explored achievement goal orientation, perceived competence and school type differences, inorder to understand how they predict academic achievement. With such understanding, appropriate and timely measures can be undertaken to address the illustrated failure rate in Gatundu South Sub – County.

1.3 Statement of the Problem

Nationally, poor academic achievement has been experienced over the last four years despite government interventions. The same pattern is reflected in the Counties and Sub-counties. In Kiambu County, Gatundu Sub - County has posted consistent poor pass rates below the County and national statistics. This may lead to a cycle of poor academic attainment. Academic underachievement in national examinations may also have adverse implications on learners’ future and County social- economic development. In addition, poor academic achievement may limit students’ chances to further skills training and even selection into tertiary institutions. Thus, the students may miss adequate skills and knowledge needed to compete in the global market, enjoy better incomes and active participation in national development. To address the issue of academic
underachievement, an investigation of the factors which enhance or inhibit students’ academic achievement was necessary. So that they can be understood and manipulated for the benefit of the learners.

Studies in developed countries indicate that achievement goal orientation and perceived competence are significant in explaining students’ academic outcomes. As evidenced by literature reviewed, the existing studies done in other cultures have not adequately explored their relationship to students’ academic achievement. In addition, available researches have not investigated sufficiently how the two factors influence academic achievement among secondary school students in the Kenyan context.

Studies in Kenya regarding the factors that influence students’ academic achievement have focused on defensive pessimism, self- handicapping, academic motivation, self-regulated learning, academic disidentification, academic identity status and academic resilience (Ireri, 2015; Mutweleli, 2014; Mwangi, 2015; Otanga, 2016; Wawire, 2010). Therefore, the central problem of this study was to find out whether achievement goal orientation and perceived competence predicted academic achievement among form three students in Kiambu County, Kenya. This will fill the gap in the local literature that could be the missing link needed to address the poor academic achievement in Gatundu South Sub- County.
1.4 Purpose of the Study

The purpose of the study was to determine the extent to which achievement goal orientation and perceived competence predicts academic achievement among secondary school students in Kiambu County, Kenya.

1.5 Objectives of the Study

The objectives of the study were to:

i. Determine the relationship between students’ achievement goal orientation and their academic achievement.

ii. Establish the relationship between students’ perceived competence and their academic achievement.

iii. Find out if there were differences in students’ achievement goal orientation due to type of school attended.

iv. Test for differences in students’ perceived competence due to type of school attended.

v. Establish the prediction model of academic achievement from achievement goal orientation and perceived competence.

1.6 Research Questions

The study sought to answer the following research questions;

i. What is the relationship between students’ achievement goal orientation and academic achievement?

ii. How are students’ perceived competence related to academic achievement?
iii. What are the differences in students’ achievement goal orientation due to type of school attended?

iv. How does students’ perceived competence differ across the type of school of the participants?

v. To what extent does achievement goal orientation and perceived competence predict academic achievement?

1.7 Assumptions of the Study

The study made the following assumptions:

i. That valid academic records of the students were provided.

ii. That participants provided accurate self-report data on questionnaire items and interview schedule.

iii. That students’ have different types and levels of achievement goal orientation and perceived competence which lead to different levels of academic achievement.

iv. There was homogeneity of schools and students since they were all public and follow the same curriculum.

1.8 Limitations of the Study

The study participants were sampled from one geographic region (Kiambu County) and the study sample involved form three students in public secondary schools. This greatly limited the ability to generalize the findings of the study to the whole population of students in secondary schools in other cultures, contexts and countries without required caution.
Another limitation was in correlation research design, though the variables under study varied over time as such causal inferences could not be made. The last limitation was the study’s reliance on students’ self-reported data, which may be affected by social desirability concerns. However, further interviews with respondents served to provide rich qualitative data for a clearer understanding of the relationships between the study variables.

1.9 Delimitation of the Study

The study was delimited to form three students in 12 public secondary schools in Gatundu South Sub-County of Kiambu County. This was due to the fact that recent studies have reported poor academic achievement in secondary schools. Gatundu South Sub–County has also been performing poorly in KCSE for the last three years. Though many variables could influence academic achievement, the study only focused on achievement goal orientation and perceived competence. This was because local studies on how the two variables influence academic achievement were not readily available. Finally, the study did not deal with the development of achievement goal orientation and perceived competence over time.

1.10 Significance of the Study

The study may aid educators and policy makers such as the MOE to understand students’ achievement goal orientation and perceived competence, so that teacher trainees are equipped with the necessary training skills to enhance students’ motivation for learning. The findings could also provide relevant information to curriculum developers to design
appropriate instructional materials, educational objectives and programs that foster better academic achievement in school for students.

The results may provide information to school administrators on students’ level of achievement goal orientation and perceived competence for better understanding and decision making aimed towards improving academic achievement. The findings are also expected to explain poor academic achievement from perspective of achievement goal framework hence enable teachers to use the findings to come up with intervention programs that promote achievement outcomes for secondary school students.

The study may inform parents, teachers and counselors on how to structure home and school environments to influence the most adaptive achievement goal orientation and perceived competence, to become academically successful. It is also anticipated that the study findings may contribute to the existing cross-cultural literature on predictors of academic achievement among students in Kenya and therefore become a reference point for empirical researchers.

1.11 Theoretical Framework and Conceptual Framework

1.11.1 Theoretical Framework

Two theories guided the study: The Goal Orientation Theory by Elliot and McGregor (2001) and Intelligence Theory by Dweck (1999).
a) **Goal Orientation Theory (Elliot & McGregor, 2001)**

According to Elliot and McGregor (2001), learners’ focus on achievement will affect their educational outcomes such as cognitive processes, intrinsic motivation and academic grade. Achievement goal theorists focus on students’ aims for choosing and engaging at various learning tasks. Motivational theorists initially identified two achievement goals: a mastery goal and a performance goal. Elliot and McGregor (2001) later modified a 2 x 2 achievement goal frame- work and put goals into approach – avoidance valence and mastery and performance valence. Within the model, four types of goals were realized: mastery - approach orientation versus mastery - avoidance orientation and performance –approach orientation versus performance –avoidance orientation.

Empirical researches on 2 x 2 factor conceptualization of achievement goals have revealed differential pattern of processes and consequences (Moller & Elliot, 2006). However common consequences mostly explored in achievement literature are the effort, intrinsic motivation, performance, interest and affective responses. According to Meece, et al., (2006), mastery goal orientation activates positive processes and learners try to understand learning tasks. In performance goal orientation, learners focus on demonstrating ability, seeking judgment relative to others and favourable comparison of competence in achievement situations. The present study validated the 2 x 2 dimensional model of achievement goal orientation in a sample of a developing country. The students’
academic performance was hypothesized to be influenced by their achievement goal orientation and perceived competence.

Elliot and McGregor model is helpful in explaining how the different levels of achievement goal orientation facilitate academic achievement. However, achievement goal orientation interacts with other internal personal factors within the student to enhance academic achievement. This model has deficiency in its illustration of the relationship between achievement goal orientation and perceived competence to facilitate academic achievement. Therefore, another model was necessary to illustrate the interrelationship between achievement goal orientation, perceived competence and academic achievement. Hence, the Dweck (1999) model about intelligence was used to explain the students’ perception of ability.

b) Intelligence Theory (Dweck, 1999)

The model is derived from social- cognitive framework and refers to the way individuals orient, generate and conceptualize themselves towards different goals. Dweck (1999) suggested that perceived competence of a student could be influenced by the personal theory of intelligence. In 1988, Dweck and Leggett conceptualized perceived competence as an individual’s view on intelligence or ability based on either flexible or entity. When students believe that intelligence is malleable and, with effort, increases, they adopt an incremental view. But if they believe that, intelligence is fixed and unchangeable trait, they adopt an entity view. The main implication of the model to the current study is that
individual view of intelligence activates positive or negative processes and kind of goal adopted in achievement situations. Research has found a link between incremental students’ and hard learning tasks and possibility of not meeting desirable outcomes. Entity students embrace tasks that do not portend their competence picture, assured of success and less risk of failure (Dweck, 1999; Wawire, 2010).

Empirical evidence indicates that intelligence theory and achievement goals predict achievement related outcomes. For instance, maladaptive behaviour and cognitive outcomes are mostly predicted by entity belief and performance goals. But mastery goals and flexible beliefs mostly predict adaptive outcomes (Stevenson, 2011). In the academic domain, students’ that display maladaptive behaviour may exhibit indicators of debilitative functioning when faced with academic challenges.

The implication of the intelligence theory to the present study is that, individuals’ perceived competence has an influence on achievement goals adopted in response to a persons’ perception of academic ability. Students’ who positively perceive that their ability will persist, often engage and put effort when faced with failure. In addition, students who believe that intelligence is flexible, embrace approach orientation even when faced with difficulty. However, entity students who negatively perceive their ability will demonstrate their low academic ability, by having demotivating characteristics like distraction, negative attitude or avoid engaging in learning tasks. Similarly, avoidance orientation results into low academic achievement.
1.11.2 Conceptual Framework

Figure 1.1. Relationships among study variables

Note. → Direction of relationship.
The conceptual model in Figure 1.1 shows two predictor variables: achievement goal orientation and perceived competence. Achievement goal orientation was examined under four levels: mastery approach, mastery avoidance, performance approach and performance avoidance. Perceived competence was examined under two levels: flexible and entity. School type, gender and age served as intervening variables. Students’ academic achievement served as outcome variable. The students’ academic achievement was hypothesized to be influenced by their achievement goal orientation and perceived competence. The four levels of achievement goal orientation interacted with the two levels of perceived competence to influence academic achievement. School type differences in students’ achievement goal orientation and perceived competence were also hypothesized.

1.12 Operational Definition of Terms

**Academic Achievement** – The standardized mean T-score a student obtained at the mid and end of term one year 2017 examinations.

**Achievement goal orientation**– The reason an individual learner is motivated to pursue a given academic task which includes: mastery approach, mastery avoidance, performance approach and performance avoidance.

**Entity perceived competence**– Learner’s belief that he/she has a fixed and unchangeable intelligence.
Flexible perceived competence- Learner’s belief that he/she has a malleable and changeable intelligence.

Mastery approach- Refers to learner’s motivation to increase one’s knowledge, understanding or skill level.

Mastery avoidance- Refers to learner’s focus on avoiding making an error in assignment or forgetting what one has learned.

Performance approach- Refers to the learner’s motivation to outperform others in examinations.

Performance avoidance- Refers to the learner’s fear of perception of incompetence in comparison to classmates.

Perceived competence- Perception about oneself as able or unable to face and solve an academic task depending on individual view on intelligence as either flexible or entity, which determines the effort and whether a learner succeeds or fails.

School type- These were classified as: girls only and boys only boarding, co-educational boarding and co-educational day schools.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In this chapter, literature related to the study was reviewed on the basis of the relationship between: achievement goal orientation, perceived competence and students’ academic achievement; influence of school type on students’ achievement goal orientation and perceived competence and prediction of academic achievement from achievement goal orientation and perceived competence. A summary of the reviewed literature and gap identification is presented at the end of the chapter.

2.2 Achievement Goal Orientation and Academic Achievement

Most educational studies which investigated relationship between achievement goals and academic achievement applied dichotomous or trichotomous achievement goal framework. A study by Geta (2012) assessed the relationship between achievement goal orientation, approaches to learning and academic achievement of college students. In the study, 243 sample of Bonga College of Teacher Education from Ethiopia were used. The results of the study revealed that achievement goal orientation statistically correlated with academic achievement. Further, the study found significant positive correlations for performance-approach and mastery goals and negative correlations for performance avoidance goal with achievement-related processes and achievement. The college students he used are likely to have had more domain specific achievement goals due to
success they had already experienced in their studies. The current study used a younger sample from a different culture to test if there were relationship in Kenyan students’ achievement goal and academic achievement.

In a recent longitudinal study, Phan (2014) explored the correlates and outcomes of mastery goals. The participants were 288 (148 boys and 140 girls) government secondary school students from Sydney, Australia. The data was collected on four occasions. The structural equation modeling revealed that mastery – avoidance goal had a negative effect and mastery approach was insignificant with academic outcomes. The findings were inconsistent with those from a previous research by Elliot (1999) in that a mastery-approach was not a significant correlate of academic outcomes. The study methodology (longitudinal study) may have produced the noted inconsistent findings. This implied that the research method used had a bearing on study outcomes. The present study collected data once from the participants and this may have minimized time-related threats to internal validity.

In another study, Sideridis and Kaplan (2011) focused on the outcomes of achievement goals on 97 undergraduate psychology students from a State University in Southern Greece. The behavioural aspect of engagement (persistence) comprised the outcome variable. Results reported a significant relationship between mastery-oriented and non- significant with performance
approach–oriented, performance avoidance–oriented and persistence. The study used a small sample size, based in a college setting and in a developed country, Southern Greece where learning and cultural environments are different from those in Kenya. The small sample size used increased the likelihood of type II error and hence the current study with a larger sample in a developing country.

In a related study, Agbuga and Xiang (2008) applied the trichotomous achievement goal model. They investigated the relationship between mastery, performance-approach, and performance-avoidance goals and self-reported persistence/effort in secondary physical education among Turkish students. In the study, 229 students filled questionnaires in Grades 8 and 11. They found out that at age 14 students significantly scored higher than at age 17 on persistence/effort and performance goals. Further positive correlations emerged between students’ self-reported persistence/effort and mastery goals, although its predictive weight seemed to change by age. The current study utilized 2 x 2 achievement goal framework to investigate between achievement goal orientation and perceived competence which had a better predictive value of academic achievement.

In a meta-analytic review of achievement goal orientation, Hulleman and Harackiewicz (2010) reviewed 243 correlational studies comprising of a total of 91,087 participants. The results indicated that performance–approach goal had a negative relationship (r= -.14) with performance outcomes while mastery-
approach was not significantly related to performance outcomes. However, the study found out that as learners progressed through school, avoidance goals became more correlated, while performance- approach goals became less correlated with educational outcomes like interest. The research argued that, the maladaptive emotional responses associated with normative component of performance approach goals such as anxiety and shame could explain the negative relationship with performance. The major gap that the current study may fill in these results are methodological. This study used self-report questionnaires that may allow generalization.

Roussel, Elliot and Feltman (2011) examined the link between 2x 2 achievement goal model among senior high school in France. Three hundred and seventeen students participated in the study with a mean age of 17.33 years. The results revealed that mastery approach and mastery avoidance were positive predictors of help seeking while performance approach and performance avoidance were negative predictors of instrumental help seeking in an academic context.

Diseth, Danielsen, and Samdal (2012) explored the relationship between teachers’ support of basic psychological needs, self-efficacy, achievement goals, life satisfaction and academic achievement in a sample of 240 secondary school students (8th and 10th Grades) in Hordaland County, Norway. The study used Patterns of Adaptive Learning Scales (PALS), Midgley et al.,(2000) to measure
achievement goal orientation while academic achievement was inferred from average scores in eight school subjects. Correlational analysis showed a significant negative relation between performance goals and all of the variables. A subsequent path analysis indicated that achievement goals together with other variables gave a structural model which predicted academic achievement. The researcher suggested use of other tools to measure achievement goal orientation and widen the understanding of the relationship between this and academic outcomes which the current research has done.

In a cross-sectional study, aimed at exploring variables related to the students’ personal achievement goals and perceived school performance, Diseth and Samdal (2014) used 2594 Norwegian secondary education students. The results indicated that mastery, performance approach and performance avoidance positively predicted perceived school performance (academic achievement). The current study used a sample of a similar education level. However, the cultural milieu of the participants was different. This allowed for cross-cultural comparison in the results.

In a recent local study, Ireri (2015) examined the relationship between academic identity status, achievement goal orientation and academic achievement among secondary school students in Kenya. The study utilized 390 student participants drawn from selected public secondary schools in Mbeere South Sub - County.
The empirical findings reported a significant positive correlation between approach achievement goal orientation and academic achievement (r (383) = .20, p < .05). However, avoidance achievement goal orientation revealed a significant negative correlation with academic achievement (r (383) = - .15, p < .05). A significant gender difference in approach achievement goal orientation (t (383) = - .56, p < .05) was reported. Though study was located in Embu County, Kenya, the present study sought to explore this relationship further, using a sample of secondary school students from Kiambu County.

Most of the empirical evidence reviewed on the relationship between achievement goal orientation and academic achievement have been carried out in Western countries. Cross- cultural analysis of the same can illuminate this relationship across different settings, such as in Kenya, to find out whether this association differs across countries. This necessitated this study, which used a sample of secondary students from Kiambu County.

2.3 Perceived Competence and Academic Achievement

Majority of the existing educational studies on the relationship between perceived competence and academic achievement have been conducted among elementary and college students. In a survey using 157 Spanish undergraduate students, Betoret and Artiga (2011) examined the relationship between learning approaches, psychological competence, avoidance strategies and academic
performance. Data was collected using Self-report questionnaires. The structural equation modeling examined interrelationships of the constructs. Research results indicated that, correlations among approaches to learning and avoidance strategies and student academic achievement were significant. However, the variables could act as mediators between student psychological needs and academic achievement. The researchers took into account other variables related to students’ academic achievement such as achievement goal orientation and perceived competence.

A study at University of Arkansas for Medical Sciences, Paykachat, Paul, and Ragaland (2013) identified correlates of academic help seeking behaviour among pharmacy students at a public university. The researchers used semi-structured focus group interviews to collect data from the participants. The study was guided by five objectives. One of them explored the relationship between perceived academic competence and academic outcomes behaviour. Empirical findings reported a statistically positive correlation between perceived academic competence and academic help seeking behaviour. However, the study had some limitations, like utilizing only one public college for pharmacy. This limited generalization of the study findings in the case of students in different professions, institutions and settings. The current study was interested in the perceived competence of a younger group at the secondary schools.
An earlier study by Yoon, Weinstein, and Wicker (2011) had investigated the relationship between perceived autonomy, perceived competence, achievement goal orientations and academic outcomes. The participants of the study were 151 statistics students in university in Southwest United States. The perceived competence was measured using Patterns of Adaptive Learning Scales (Elliot & Church, 1997). Simple correlations and Analysis of Variance (ANOVA) were used for data analysis. The study yielded divergent findings from previous studies. Results of three-way interaction effect analyses showed that: mastery goal, a performance-approach goal and perceived competence related significantly and positively with academic achievement. In contrast, low perceived competence and high performance approach goals indicated positive correlations and negative correlations for mastery goals with academic achievement. The AGQ-R, by Elliot and Murayama (2008) and Scholastic Competence Scale of Harter’s self-perception profile for adolescents (Harter, 1985, 2012) were adopted for the current study. The same data analysis techniques were used. This helped to investigate cross-cultural similarities or differences if any.

In a study of 19 participants with learning disorders from colleges in Oregon, Blake (2015) found no relationship between implicit theory of intelligence and college student academic achievement, though a small negative relationship with high school student academic achievement was reported. Similar findings were
reported by McGregor (2004) who examined the relationship between self-
perception and academic achievement among native students in grades five and
six in Ontario, Canada, using a sample of 45 students. Data was collected using
self- perception profile for children. The results indicated small significant
correlation for academic achievement and scholastic competence (r = .341, p< .05). However, results revealed no significant relationship between academic
achievement and general self perception among native students in the 5th-6th
Grades. The level of school used is likely to have produced results that may not be
generalizable to older groups from different culture like those used in the current
study.

A longitudinal study by Shen (2003) analyzed the effects of self perception on
students’ Mathematics and Science achievement based on Third International
Mathematics and Science Study (TIMSS) data in Boston. A two stage stratified
cluster sample design was used to obtain the schools and 3500 8th Grades student
participants. The students’ achievement score in the two subjects was used as the
outcome variable. The findings revealed some variance at two different levels.
Within country data a positive correlation was reported while at country level a
negative correlation was revealed between self - perception and academic
achievement. This inconsistency mirrored differences in culture. Hence, more
empirical studies were needed, with a sample from a developing country like
Kenya, to establish cross- cultural similarities or differences.
P’Pool (2012) used Dweck’s theory of motivation to determine the link between students’ view of intelligence and their academic achievement. A sample of 118 public high school students in South Central Region, United States revealed no significant differences between entity beliefs and incremental (flexible) beliefs and students’ GPA score. Empirical study by Lucangeli and Scruggs (2003) examined the relationship between perceived competence, anxiety and achievement. The study was done with a sample of 180 Italian middle school students. The students responded to the six subscales of a perceived competence scale. The research found a moderate negative correlation between perceived competence for academic ability in Maths and literature achievement. The study was based on a sample drawn from a developed country and given that Kenya is a developing country, a similar study was needed in order to report on the cross-cultural differences and similarities if any.

Based on the Dwecks’ social cognitive theory, Li, Zhou, Zhang, Xiong, Nie and Fang (2017) examined the effects of students’ theories of intelligence and examination achievement. In their study, participants consisted of 4036 students from public high schools in Panyu District of Quangzhou, Southern China. The study revealed a strong association between students flexible beliefs but non between students’ entity belief and achievement outcomes. It was interesting to investigate this relationship among secondary school students in a developing country which was an objective of the current study.
Almost all the aforementioned studies were conducted in overseas where learning and cultural environments are different from those in Kenya. Locally, studies exploring perceived competence and how it is related to academic achievement are not readily available. Given the already mentioned importance of perceived competence and few local studies related to this area, the present study was necessary to address the gap in the literature.

2.4 School Type and Students’ Achievement Goal Orientation

School type differences in students’ Achievement Goal Orientation are evident in several studies. A study by Sungur and Senler (2010) established the relationship between achievement goals, classroom environment perceptions, competence expectancies and motivation among elementary students. The sample consisted of 482 students, attending urban, public co-educational schools in Turkey. The students’ age range was 10 to 14 years from Grade 4 – Grade 8. Convenience and cluster random sampling methods were used to select the participants. Although the study gave insights into relation between elementary students’ achievement goals, competence expectancy and classroom environment perceptions, few limitations were noted. First, the study relied on students’ responses to self-report questionnaires could be having inaccurate and biased self-report data. Secondly, cluster random sampling raised concerns about the independence of individual scores. The current study utilized simple and stratified random sampling in order
to identify different types of school which included: girls only and boys only boarding, co-educational boarding and co-educational day schools. In addition, both quantitative and qualitative data was collected.

Locally, studies exploring relationship between school type and achievement goal orientation are not readily obtainable for review, but this relation can be deducted from researches investigating other related factors. Mutweleli (2014) explored the main/ interaction effect between type of school, academic motivation and self - regulated learning, as the factors, in predicting academic achievement of students in public secondary schools. The results showed a significant interactive effect between type of school, academic motivation and level of self-regulated learning. This supports the inclusion of types of school as an objective in the present study for in predicting students’ academic achievement it improves the prediction.

A study by Ireri (2015) explored the interaction of school type and achievement goal orientation among Form Three students. The sample comprised of 375 participants from Embu County. The findings indicated that approach achievement goal orientation significantly predicted students’ academic achievement in girls’ only boarding schools and in boys’ only boarding schools. Avoidance achievement goal orientation significantly predicted students’ academic achievement. However, achievement goal orientation in coeducational
day schools was marginally insignificant. Notably a non-significant predictive value was revealed in co-educational boarding schools.

In another local study, Mwangi, Okatcha, Kinai, and Ireri (2015), using boys and girls in boarding, and mixed day public secondary schools in Kiambu County, Kenya, investigated the relationship between academic resilience and academic achievement. Although the study variables were different, the results seemed to indicate that an internal personal factor did not develop by chance but rather it was promoted or hindered by type of school. Using 400 participants selected on the basis of boarding or day, single gender or mixed schools in Nairobi County, Wawire (2010) reported a significant positive relationship between motivation orientation and academic outcomes. Though the cultural milieu of the participants was the same, a study like the current one may shed light on how the variables being studied vary and related within local setting.

2.5 School Type and Students’ Perceived Competence

Educational researchers have acknowledged the role of contextual factors such as school and personal factors like perceived competence in academic achievement. Many researches on school type have stratified schools either as private or public but have failed to explore the levels of type of institutional differences. For example, Frenette and Chan (2015) conducted a longitudinal study with 7142
participants at age 15 and by age 23 in Canada. The researchers examined the role played by students’ characteristics in accounting for differences in academic outcomes of public and private secondary school students. The study found a positive relationship between type of school and students’ characteristics (high or low ability). But there could be differences in methodology, levels of type of institution and perceived competence that can affect results and hence the current study.

A study by Shapka and Keating (2003) explored the benefits of girls-only classroom instruction in Maths and Science during Grade 9 and 10 between the age range 15 -16 years, in public all-girls and co-educational classes in Ontario, Canada. The longitudinal study comprised 786 participants (402 girls and 384 boys). The study measured self reported attitudes towards Maths. The results indicated a negative significant relationship between perceived Maths competence in girls taught alone in their own classes and positive significant relationship for boys and girls taught together. Despite these methodological and cultural differences of the sample, it was clear that school type was an important variable in perceived competence.

In another study, Giota (2006) investigated 13-year-old adolescents’ goal orientations in relation to their self-perceived competence in academic and non-academic school subjects. It was located in Sweden’s longitudinal project evaluation which followed up representative samples aged between 10 and 13
years. The study found out that institutional goal orientation influenced how adolescents perceived their competence either positively or negatively. In particular, negatively oriented students displayed lower academic performance and self-evaluations of competence. The study was conducted with younger students, in terms of age and it used open-ended questions to collect data. These were addressed in the current study by use of an older sample and closed ended questions to collect data.

Locally, using a survey method and 53 participants in Central and Western Provinces of Kenya, Awori (2010) reported an influence of type of school for girls with hearing impairments. The study reported that girls in boarding facilities have high perceived ability in particular areas of academic achievement than mixed day secondary schools. However, the results obtained from such a study cannot be generalized to students without hearing impairments. This was a gap addressed in the current study.

Otanga’s (2016) study, established the mediation of academic self-esteem on the relationship between gender, type of school, grades and causal attributions and academic disidentification. The study findings yielded a statistically significant main effect for type of school, $F (1, 444) =13.28$, $p =.001$, $\eta^2 =0.05$, on academic self-esteem. In a similar study by Munanu (2016) on 480 student participants in Nairobi County, Kenya, a significant relationship between school type, self-
esteem and academic achievement was reported. The studies categorized the type of school as national, county, extra-county, Sub-county and private. The current study has categorized the schools into boys only boarding, girls only boarding, co-educational boarding and co-educational day.

In a local study, Mwangi (2015) explored the interactive effects between type of school, academic resilience and academic achievement on a sample of 388 form three students in Kiambu County. The empirical findings indicated a significant mean difference in academic resilience and type of school among students from different school groupings. Notably, girls’ boarding schools had the highest mean difference while boys boarding revealed the least mean difference. However, academic resilience is only suggestive of the students’ ability to overcome setbacks associated with school, and therefore cannot give actual data on how perceived competence differ due to type of school attended. This study aimed at filling this void.

In Kariuki (2017) local correlational study of 600 secondary school students in Nairobi County, it was found out that achievement motivation had a significant relationship with school category (public and private). Further, no significant relationship was between achievement motivation and school type (day and boarding). A step not taken in the reviewed study was to investigate difference in
students’ perceived competence due to type of school attended, hence the need for the current study.

Going by the aforementioned, type of school differences in students’ personal factors for secondary school students deserve further investigation. This was on account of the mixed findings and in view of their potential implications on academic achievement. This study therefore explored the type of school differences in students’ perceived competence among secondary school students in Kenya, using a sample of secondary school students from Kiambu County.

2.6 Prediction of Academic Achievement from Achievement Goal Orientation and Perceived Competence

Few studies have established a prediction model of achievement goal orientation and perceived competence on students’ academic achievement. Scanty literature available has mainly focused on how the components of the two constructs interact. A study by Gonida, Kiosseoglou, and Leondari (2006) aimed at assessing the relationship between theories of intelligence, perceived academic competence, and school achievement measured at two different occasions. To test the alternative causal theoretical models, cross-lagged regression analysis on the longitudinal data was conducted. The sample had a mean age of 11 and 12 years and located in Northern Greece. The study results revealed a decline in perceived competence as learners progressed in age. The higher achievers had significantly
higher perceived competence than students with average or lower academic achievement. The sample was drawn from children in primary schools and located in the western part of the country. The differences in methodology, location as well as age of the participants can affect study results and therefore it was necessary to find out how these factors affect academic achievement as was done in the current study.

In another study, Walker (2011) examined the relationships between cognitive motivational correlates and academic achievement in high school, Midwestern United States. The sample of the study was 227 students aged between 14 to 19. The study applied trichotomous classroom achievement goal framework. The findings indicated a positive relationship between classroom mastery goals, performance-approach goals, belonging and perceived instrumentality. Empirical results also demonstrated that learners’ perception of classroom goal orientation was related to academic achievement. The current study examined personal achievement goal orientation as a predictor of academic achievement. It used a sample of a similar age range. However, the cultural backgrounds of the participants were different. This study therefore allowed for cross-cultural comparison in findings.

An earlier study by Gonzalez-pienda, Nunez, Gonzalez- Pumariega, Alvarez, Roces, and Marta (2002) investigated the relationship between the students’
academic aptitudes, self-concept and causal attributions and academic achievement. Structural equation model approach was used to test the hypotheses. The students’ age spanned between 12 to 18 years from various educational centres. The study established that causal attribution was not significantly related to self-concept and academic achievement in successful task but, self-concept and causal attributions were significantly related when accounting for failure. Empirical results also indicated a significant relationship between cognitive-affective correlates and adolescents’ academic behaviour. Gonzalez-pienda et al. did not investigate how the domains of achievement goal orientations interact with perceived competence in influencing academic achievement, an interest of this study.

A study by Yeung, Craven and Kaur (2014) explored the relationship of students’ mastery goal orientation and perceived competence to educational outcomes. The study sample involved 1519 secondary school students in Western Sydney. The participants responded to survey items to measure mastery goal orientation and sense of competence and reading and numeracy test scores were obtained to measure achievement outcomes. Structural Equation Modelling (SEM) was applied to relate the study variables to the outcomes. The study indicated that motivational factors were positively associated with achievement but perceived competence was the stronger predictor. However, mastery displayed a negative path to achievement when considered together with predictors. In light of these
findings, a key objective of the current study was to establish how achievement goal orientation and perceived competence predict academic achievement among secondary school students in Kenya.

In their study, Ferla and Valcke (2010) investigated the interaction between self–perceived academic competence, achievement goals, learning approach and academic performance among 512 Psychology students at Ghent University, Belgium. The results indicated that a high level of self perceived competence has direct negative and indirect positive effects on students’ academic outcomes. The indirect effect is mediated by adoption of mastery goal. Through the multiple regression analysis, it was reported that self perceived competence and achievement goals explained 13.9% of the variance in students’ academic performance (F (10, 423)= 6.84, p< 0.001). Since these results were based on University students, there was a need to investigate these variables using a sample of secondary school students, who were the main focus of this study.

Chen and Wong (2015), in their study of 418 university students in Hong Kong, found out that incremental theory of intelligence related to students’ academic achievements by facilitating endorsement of mastery goals and performance approach goals. Students’ performance avoidance goals revealed a negative relationship with academic achievement. Similarly, Cock and Watt (2004) established the relationship among students’ perceived competence and mastery
goal orientation in English and Mathematics. Questionnaires were used to gather data on 60 student participants and follow up interviews on 17 participants of low and high competence perceptions and mastery goals. A statistically significant correlation was found between perceived competence and mastery goal for Mathematics and English. However, the correlation between mastery goals for Mathematics and English was moderate in strength. The qualitative data related to mastery goals via intrinsic value. Consequently, the current study used a questionnaire and a structured interview schedule to collect data in order to explore further the constructs under research.

In another study, Magno (2013) investigated how individuals’ belief about intelligence affected their goal orientation and academic achievement. Using path analysis, a model was tested with 291 engineering students in Manila, Philippines. The findings revealed that achievement goal orientation had no direct effect on academic achievement. On theories of intelligence, flexible beliefs were significantly predicted by performance approach and mastery approach while entity beliefs predicted performance approach and performance avoidance. Findings implied that entity students tended to adopt performance goals while flexible students tended to adopt mastery goals and performance approach goals, indicating that individuals could adopt multiple goal orientation. Goal orientation and intelligence framework were utilized in this study to provide an understanding of how achievement goal orientation and perceived competence
correlate to predict academic achievement, using a sample of secondary school students from Kiambu County.

2.7 Summary of Literature Review and Gap Identification

The review of literature revealed that achievement goal orientation and perceived competence affected academic outcomes. What was not clear though was which of the two variables predicted academic achievement better. This was because the studies reviewed were inconclusive and some had divergent results. The various researches showed that achievement goal orientation and perceived competence had a significant relationship with academic achievement while others did not. Concerning school type differences in achievement goal orientation and perceived competence, the studies reported inconsistent results with some indicating significant differences while others did not. Furthermore, majority of the studies were done in the western context where family and school environment differ from those in Kenya.

Most of the research studies reviewed were conducted among elementary, college and university school students and few used methodological and data triangulation. The results obtained from such studies cannot be generalized to our Kenyan students. Hence, there was need to empirically explore the relationship of these variables within the Kenyan context with regard to students’ academic achievements.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction
This chapter describes the research methodology, specifically research design, locale of the study, target population, sampling techniques and sample size, instruments for data collection, logistical and ethical considerations and, lastly, data analysis.

3.2 Research Design and Locale

3.2.1 Research Design
Mixed method sequential explanatory research design was used. According to Creswell and Clark,(2011, as cited in Caryn, 2012) the design is merited on its “strong quantitative orientation, two phase structure and the link to emergent approaches where the second phase can be designed as a result of the outcomes of the first phase” (p.74). This researcher collected data in two consecutive phases within the study. The quantitative data was collected first and analyzed followed by qualitative data collection and related to the outcomes from the quantitative phase (Creswell, 2014). The design was therefore suitable to this current study in which the researcher wanted to explain significant, non-significant and interesting quantitative findings. The researcher identified the quantitative findings which needed further exploration and used these results in the qualitative phase.
3.2.2 Variables of the Study

Achievement goal orientation and perceived competence were predictor variables while academic achievement was the outcome variable in the study. Achievement goal orientation had four levels: mastery approach, mastery avoidance, performance approach and performance avoidance. Perceived competence had two levels: flexible and entity. Both achievement goal orientation and perceived competence were measured at interval level of measurement through scores from adopted scales. School type as an intervening variable was categorized into boys’ boarding, girls’ boarding, co-educational boarding and co-educational day and measured as a categorical variable.

Academic achievement was inferred from examination scores. It was measured at interval level using mean score in all subjects obtained from school records, done at the end of the term one form three examinations in the year 2017. To make the scores comparable across the schools, they were first converted to standard Z score. To get the T-scores, the standardized Z- scores were then transformed into T-scores using the formula: T= Z (10) + 50. T- score values of between 32- 47 were considered as low academic achievement; 48-63 were considered as average, while T-score values of between 64-78 were regarded as high academic achievement.
3.2.3 Locale of the Study

This study was carried out in Gatundu South Sub-County, Kiambu County (See Appendix K). Kiambu County is situated in the former Central Province of Kenya and covers an area of 2,449.2km$^2$. It borders Nairobi County to the North, Kajiado County to the South, Muranga County to the West and Machakos County to the East. Administratively, the County is divided into twelve Sub-Counties namely: Githunguri, Kiambaa, Kabete, Limuru, Lari, Gatundu North, Gatundu South, Ruiru, Kikuyu, Juja, Thika and Kiambu.

The County was chosen for this study because of its declining academic achievement over the years. According to MOE (2015) statistics, over the last four years (2014-2017), the County has registered an increase in candidature, but data shows that performance by overall mean grade has been below the minimum mean grade for university admission (CDE, 2015; 2016; 2017). Among the 12 Sub-Counties, Gatundu has had the highest percent of wastage grades (D-E) which translates to approximately 76.06% failure rate. It is evident that the Sub-County performances have revealed consistent pass rates below the County and national statistics.

The long term costs of academic underachievement in the Sub-County are high and cannot be overlooked. Studies in Kiambu County relate social instability and reduced competent personnel to the low academic standard (Mwangi, 2015;
Furthermore, the poor performance in the Sub-County limits individual chances of selection into higher institution of learning (Macharia, 2011). This poses the risk of the Sub-County’s withdrawal from the mainstream society and may prejudice the County and national development. This should be of great concern to the stakeholders given the huge resources that the government has invested in the education sector. It was hoped that once the role of the two factors in facilitating academic achievement was well understood, then these factors could be enhanced in the learners to improve their academic performance and help reverse the poor academic achievement in the Sub-County.

3.3 Target Population

The study target population was all year 2017 students in form three from public secondary schools in Kiambu County. According to statistics from Kiambu C D E Office, there are approximately 27,697 form three students. The accessible population was 3136 (1695 boys and 1441 girls) students from Gatundu South Sub-County. The percentage distribution of the accessible population was 54.04% boys and 46 %girls’ (Gatundu Sub-County Education Office, 2016).

The form three students were selected because they had already completed two years in secondary school and chosen examinable subjects for the KCSE. In addition, the students were likely to be oriented to specific achievement goals.
The finding gained could help to guide students while in form four to improve academic achievement.

3.4 Sampling Techniques and Sample Size Determination

3.4.1 Sampling Techniques

Purposive sampling was used to select Gatundu South Sub-County, public secondary schools and form three classes. Using a list of all the public secondary schools in Gatundu South Sub-County as the sampling frame, stratified random sampling helped to group the schools into strata. This sampling method was appropriate because the population embraces a number of distinct categories (Chaturvedi, 2009). Through proportionate stratified sampling, one boys’ school and one girls’ school boarding, one co-educational boarding, nine co-educational day schools were selected from each stratum. This was done by writing down all the names of the schools from each strata on paper folds, mixing them in a cup and then picking proportionately any 12 at random. In total 12 schools participated in the study, representing 34% of all schools in the Sub-County.

Through stratified and simple random sampling procedures, the target sample was obtained. The form three class lists were obtained by this researcher in order, to get the required number of participants per school. Paper folds equivalent to the total number of participants required were categorized as ‘yes’ and the rest ‘no’.
The papers were placed in a basket and thoroughly mixed. The students who picked paper folds with ‘yes’ were requested to remain in the hall as the rest went back to their classes. Guided by student admission numbers, they were allocated code numbers. This enabled the researcher to get academic scores of each participant from the school records. Proportionate stratified random sampling was used to select 665 (388 males and 277 females) student participants. This was to ensure equal representation of schools in each stratum (Stangor, 2010).

In the second phase of the study, which was qualitative the respondents were purposively selected. Only students from boys’ and girls’ boarding schools were used in second stage, this allowed to conduct the interview over the weekend. The participants who took part in the first phase of the study were purposively selected and included in the in-depth interview. The target sample size was 40 respondents (20 males and 20 females).

### 3.4.2 Sample Size Determination

The sample size was determined using the following formula by Kish (1965):

\[ n_h = \left( \frac{n}{N} \right) n \]

Where: ‘\( n_h \)’ is the sample size for stratum,’ \( n \) ‘is the total sample size and ‘\( N \)’ is the total population size. This sample size and composition is illustrated in Table 3.1:
Table 3.1

*The Sample composition*

<table>
<thead>
<tr>
<th>School Type</th>
<th>No. of Schools</th>
<th>Population</th>
<th>Sample size</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>G</td>
<td>sch.</td>
</tr>
<tr>
<td>BBS.</td>
<td>6</td>
<td>738</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>GBS.</td>
<td>7</td>
<td>-</td>
<td>609</td>
<td>1</td>
</tr>
<tr>
<td>Co-B</td>
<td>4</td>
<td>117</td>
<td>190</td>
<td>1</td>
</tr>
<tr>
<td>Co-D</td>
<td>18</td>
<td>840</td>
<td>642</td>
<td>9</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>1695</td>
<td>1441</td>
<td>388</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>3136</strong></td>
<td></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td>Percentage</td>
<td>100</td>
<td>100</td>
<td>34</td>
<td>21</td>
</tr>
</tbody>
</table>

*Note.* BBS=Boys Boarding School; GBS = Girls’ Boarding School; Co-B =Co-educational Boarding; Co-D = Co-educational Day; B=Boys; G=Girls; Sch= School

**Source:** Gatundu Sub-County Education Office,(2016, March).

Table 3.1 illustrates how the sample size for schools and students was obtained from the accessible population approximately 34% and 21% respectively. The second phase of the study had a sample size of 40 participants. This constituted 11% of the boys and girls boarding schools’ sample size involved in quantitative phase. This fulfilled the threshold of what Gorard (2001), considered an appropriate sample from a normal distribution, between 10% and 20%. According to Vanvoorhis and Morgan (2007, as cited in Khodarahimi &Rasti, 2015) a sample size of above 10% was appropriate.
3.5 Research Instruments

This researcher used a self-administered questionnaire, pro forma summary of students’ examination results to collect quantitative data and an interview schedule for qualitative data collection.

3.5.1 Questionnaire

The study had one questionnaire for the students used to collect demographic information, achievement goal orientation and perceived competence. The questionnaire was divided into three main sections (See Appendix B). Section A was used to collect students’ demographic information. It comprised of five items on respondents code number, gender, age, type of school and residential status. Section B consisted of items which sought information on participants’ achievement goal orientation using the achievement goal orientation scale (Elliot & Murayama, 2008). The final, Section C, consisted items measuring participants’ perceived competence using the perceived competence scale (Dweck, 1999 & Harter, 2012). The scale was adopted because the items had been utilized with success in other researches using students of comparable ages. Below is a summary of the instruments;

a. The achievement goal orientation scale

The study adopted the 2 x 2 Achievement Goal Questionnaire Revised (AGQ-R) (Elliot & Murayama, 2008). This researcher sought permission to use this scale
from the author. The 2 x 2 AGQ-R was a 12 items’ instrument divided into four subscales (mastery approach, mastery avoidance, performance approach, performance avoidance). Each sub-scale contained 3 items measured on a 5-point rating scale (1 = *strongly agree* to 5 = *strongly disagree*).

Using information from the pilot study, the items which were in the original AGO-R that contained unfamiliar or difficult words were modified. For instance, word “form three” was included as opposed to the word “class” which was in the original scale. In addition, the original questionnaire had items such as “*My aim is to completely master material presented in this class*” was reworded to read “*My aim is to get a lot of questions correct in Form Three*”. Items such as “*My aim is to avoid doing poorer than other students*” was reworded to read “*My goal is to avoid getting lower marks than my classmates in exams*”. This gave room to modify the 2 x 2 AGQ-from general affective motivation to class goal across the subjects. The participants were required to indicate how much they agreed or disagreed with the statements. The subscale scores ranged from 3-15 lowest to highest score respectively (See Appendix B, Section B).

**b. Perceived competence scale**

Items to measure perceived competence were adopted from Scholastic Competence Scale of Harter's Self-Perception Profile for Adolescents (Harter, 1985, 2012) and implicit theories of intelligence scale (Dweck, 1999). The
developers of the items made it open to general use for research but with correct acknowledgment whenever used. It was reworded to suit Kenyan students in secondary schools. The original scale structure had 10 items measuring learners’ perceived cognitive competence as applied to school work and 6 items measuring two specific domains about the extent to which scholastic intelligence was fixed or malleable.

In this study, the negatively worded and fixed beliefs items were collapsed and renamed entity perceived competence and positively worded and malleable items were worded and renamed flexible perceived competence. Although it was used and created for teenagers of same age, some modifications were made to the questionnaire. The original questionnaire had employed two choice responses from “True – False, or Like Me – Unlike Me”. However, to provide the participants with sufficient latitude to qualify their choices, Likert type scales were employed. These were replaced with statements with response options ranging from “strongly disagree” to “strongly agree”. The scale had 16 items divided into flexible or entity self- description. The participants indicated whether they agreed or disagreed with statements regarding their competence from five options ranging from 1= strongly disagree, 2= disagree, 3= unsure, 4 agree, 5= strongly agree for positively stated items and vice versa for negatively stated items.
Using information from the pilot study, items in the original perceived competence scale and were found to confuse the respondents were modified. For example, item number seven and fifteen on the perceived competence was reworded to read, “correct answers’’ as opposed to the words “figure out’’. Also item four and twelve were rephrased to read, “good as’’ opposed to the words “smart as’’. The original items had questions such as, “You can learn new things, but you can’t change your basic intelligence”, and “I don’t think I personally can do much to increase my intelligence”. These were modified into statements such as “Even when I am taught new things, my grades remain the same”, and “I sometimes feel like I do not have enough intelligence to handle some school work”. Other items were positively stated such as “With enough time and effort I think I could significantly improve my intelligence”, and “You can always change how intelligent you are”. These were modified into statements such as “If I work hard I could get better grades in form three”, and “As a student my intelligence increases by learning more”.

The scale had 16 items divided into flexible or entity self-description. The highest possible score was 80 and the lowest was16. In order to create two categories of flexible and entity perceived competence, the lowest possible score (16) was subtracted from the highest score (80) to get 64 which was then divided into two to get 32. This 32 was added to 16, the lowest possible score, to get 48 as the upper limit for entity perceived competence. Students with scores between 49-
80 were categorized as having flexible perceived competence. (See Appendix B, Section C).

### 3.5.2 Pro Forma Summary of Students’ Examination Results

Participant’s academic achievement was inferred from school achievement records. The researcher designed a pro forma schedule to record the scores obtained (See Appendix C). The researcher requested for form three mid and end of term one examinations in the year 2017. An average score on the two examinations was then calculated. To make the scores comparable among participants from different schools, they were transformed into standardized scores. The researcher categorized the scores into high, average and low levels of academic achievement. Local studies among secondary school students in Kenya had utilized examination marks obtained from class teachers with success. Hence, this study conceptualized the idea (Ireri, 2015; Mwangi, 2015; Mutweleli, 2014; Otanga, 2016).

### 3.5.3 Interview schedule

Semi structured interviews were conducted in the phase two of the study (See Appendix D). The purpose of the interviews was to explore further respondents quantitative responses. The researcher recorded the interviews after seeking for permission from respective School Principals and consent from the participants. The interviews were preferred because they enabled the participants to expound
more on their responses in order to enrich the quantitative data. In addition, semi-structured interviews were flexible to the student participants (Matthews & Ross, 2010). They provided an opportunity for follow-up questions and the verbal prompts generated verbatim transcripts (Jamshed, 2014).

### 3.5.4 Pilot Study

The research instruments were pre-tested in a school within the County which did not take part in the main study. Using 40 students (20 boys and 20 girls) from co-educational day school, the pilot study was done. The pilot study was necessary so as to check for clarity of items, time taken to respond to the study instrument was adequate and to enhance the validity and reliability of the instruments.

During the pilot study, the researcher noted the average time taken by the students to fill the questionnaire. Also the researcher requested the students to indicate items that were difficult to understand. These ones were later rephrased and others reworded. In order to establish content validity, there was peer review of the questionnaire items. The experts in the Department of Educational Psychology, Kenyatta University, were consulted to help in establishing the accuracy of the items in capturing the concepts under the study. The researcher also requested the class teachers to go through the questionnaire and give opinion about the tool and data collection procedures. After this, the suggestions and feedback given during the pilot study was incorporated into the instruments for the main study.
The reliability of the questionnaire was established during the pilot study. Values above 0.55 to 0.85 correlations’ co-efficient were acceptable and respective item retained in the tool. As recommended by Panayiotis (2013), moderate item homogeneity was better in the area of motivation because high values could show narrow coverage, lengthy scales or parallel items to the construct under consideration. Table 3.2 shows the Cronbach Alpha values for the various indices of achievement goal orientation and the overall Cronbach Alpha.

Table 3.2

*Cronbach Alphas for Achievement Goal Orientation Questionnaire*

<table>
<thead>
<tr>
<th>AGO Index</th>
<th>Reported Alphas</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Approach</td>
<td>0.84</td>
<td>0.66</td>
</tr>
<tr>
<td>Mastery Avoidance</td>
<td>0.88</td>
<td>0.85</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>0.92</td>
<td>0.84</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>0.94</td>
<td>0.76</td>
</tr>
<tr>
<td>Overall</td>
<td>0.89</td>
<td>0.77</td>
</tr>
</tbody>
</table>

To establish how the perceived competence measured up in the pilot study, a comparison was done with the reliability indices from the original study and some related studies. The results were presented in Table 3.3.
Table 3.3

*Cronbach Alphas for Perceived Competence Questionnaire*

<table>
<thead>
<tr>
<th>Study</th>
<th>Perceived Competence Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dweck (1999)</td>
<td>0.80 to 0.82</td>
</tr>
<tr>
<td>Ferla and Valcke (2010)</td>
<td>0.68 to 0.88</td>
</tr>
<tr>
<td>De Castella and Bryne (2015)</td>
<td>0.90 to 0.89</td>
</tr>
<tr>
<td>Pilot study (2016)</td>
<td>0.69 to 0.88</td>
</tr>
</tbody>
</table>

The Cronbach Alphas for Achievement Goal Orientation and Perceived Competence ranged between 0.66 to 0.85 and 0.69 to 0.88 respectively. The original internal consistencies for Goal Questionnaire Revised (AGQ-R) (Elliot and Murayama, 2008) ranged from .84 to .94 and perceived competence, Dweck (1999) from .80 to .82. The cultural differences between the samples used were hypothesized to have resulted into the differences in the reliability coefficients. It was also concluded that the coefficients were fairly consistent across cultures. It was therefore accepted that α = 0.77 for achievement goal orientation and α = 0.79 for perceived competence met the threshold. According to DeVellis (1991) Cronbach’s Alpha Coefficient levels above 0.65 is acceptable.

### 3.6 Data Collection

#### 3.6.1 Logistical and Ethical Considerations

This researcher obtained an introduction letter from Kenyatta University Graduate School and a research permit from the National Commission for Science,
Technology and Innovation (NACOSTI). Permissions to do the research were also obtained from the Education Officials at County/Sub-County level and the Principals of the selected schools for purposes of data collection.

The researcher sought informed consent from the participants of the study prior to data collection through a consent form (See Appendix A). Only the students who gave consent participated in the study. Those left out were assured that non-participation would have no academic implications. To ensure confidentiality, the researcher assured the participants that the purpose of the exercise was purely for the study undertaken and that the data would not be used whatsoever in any other circumstances. They were also not required to write their names.

3.6.2 Actual Data Collection

The research instruments were delivered to the schools and administered by the researcher with the assistance of class teachers. The researcher gave instruction to the participants and demonstrated how to respond to the questionnaire items. Participants took an average of 30 minutes to respond to the questionnaire items. The filled-in questionnaires were collected immediately. The class teachers were requested to provide the participants’ scores in form three mid and end of term One 2017 examinations.
In the second phase of the study confidentiality of research data was assured. Participants were asked to furnish information anonymously in order to protect their identities. The researcher briefed the selected participants about the significance of the interviews. Their consent for recording the interviews was sought for and they were assured that the contents of recorded data would be reviewed and transcribed by the researcher only within the strict framework of the study. The 20-30 minute interviews occurred on school premises.

3.7 Data Analysis

a. Quantitative data

The quantitative data obtained was coded for statistical analysis using the Statistical Package for Social Sciences (SPSS), Version 21. The study employed descriptive and inferential statistics to analyze data. The descriptive statistics were used to report demographic information and inferential statistics were used to test each hypothesis at p<.05 level of significance. The following null hypotheses and statistical tests guided the data analysis:

H01: There is no significant relationship between students’ achievement goal orientation and academic achievement.

Statistical test: Pearson’s Product Moment Correlation Co-efficient was used because data was at the interval level of measurement and it was a bivariate correlational analysis.
The following four supplementary hypotheses were formulated to make the first hypothesis more testable at its various levels:

\( H_{01.1} \): There is no significant relationship between students’ mastery approach and their academic achievement.

\( H_{01.2} \): There is no significant relationship between students’ mastery avoidance and their academic achievement.

\( H_{01.3} \): There is no significant relationship between students’ performance approach and their academic achievement.

\( H_{01.4} \): There is no significant relationship between students’ performance avoidance and their academic achievement.

\( H_{02} \): There is no significant relationship between students’ perceived competence and academic achievement.

Statistical test: Pearson’s Product Moment Correlation Co-efficient.

The following two supplementary hypotheses were formulated to allow for testing of the two levels of students’ perceived competence:

\( H_{02.1} \): There is no significant relationship between students’ flexible perceived competence and their academic achievement.

\( H_{02.2} \): There is no significant relationship between students’ entity perceived competence and their academic achievement.
H₀³: There are no significant differences in students’ achievement goal orientation due to type of school attended.

Statistical test: Analysis of Variance was used to test this hypothesis. The test statistic is appropriate when testing for differences among categories or groups. In this study, it was used to test for differences in the various school types.

The following four supplementary hypotheses were formulated to allow test the third hypothesis:

H₀³.₁: There are no significant differences in students’ mastery approach due to type of school attended.

H₀³.₂: There are no significant differences in students’ mastery avoidance due to type of school attended.

H₀³.₃: There are no significant differences in students’ performance approach due to type of school attended.

H₀³.₄: There are no significant differences in students’ performance avoidance due to type of school attended.

H₀⁴: There are no significant differences in students’ perceived competence from the school types.

Statistical test: Analysis of Variance.

The following two supplementary hypotheses were formulated to make the fourth hypotheses more testable:
H_{04.1}: There are no significant differences in students’ flexible perceived competence from the school types.

H_{04.2}: There are no significant differences in students’ entity perceived competence from the school types.

H_{05}: There is no significant predictive model of academic achievement from achievement goal orientation and perceived competence.

Statistical test: Multiple regression analysis was used because it gives the interaction effect of the predictor variables and the relative predictive weights of each variable on the outcome variable.

The following two supplementary hypotheses were formulated to make the fifth hypotheses more testable:

H_{05.1}: There is no significant predictive model of academic achievement from students’ achievement goal orientation.

H_{05.2}: There is no significant predictive model of academic achievement students’ from perceived competence.

b. Qualitative Data

The researcher collected qualitative data from all the students selected for the interviews by audio recording on a digital voice recorder and taking notes that served as further backup. The qualitative analysis process for this study involved identification of thematic relationship and patterns developed during the
qualitative phase of this research. According to Neuman (2011) qualitative data analysis involves deconstruction of the qualitative data into manageable categories, themes and relationships in line with the study objectives, theory and reviewed literature. The following procedures were followed:

a. Verbatim transcription of the recorded interviews commenced immediately. This involved transcription of main points of 40 respondents, comments and short notes (Creswell, 2014). The transcribed texts were thoroughly analysed in order to detect any duplications or similar categories within the feedback from the respondents.

b. Coding was done and transcribed texts were arranged into primary themes and sub-themes. According to Neuman (2011, as cited in Vosloo, 2014) codes were “names or labels assigned to specific units or segments of related meaning identified within field notes and transcript” (p.364).

c. The codes were evaluated according to research objectives, theoretical framework and the reviewed literature.

d. The respondents’ descriptions of thematic relationships and patterns identified concluded the qualitative analysis. In the process, the raw data was connected to the quantitative data phase.
CHAPTER FOUR
PRESENTATION OF FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction
This chapter presents the findings as per study objectives and hypotheses. Specifically, details of demographic characteristics of the respondents, followed by the findings, interpretations, discussion and exploratory analysis of the data is given. Lastly, qualitative analysis is presented.

4.2 General and Demographic Information
This section gives an overview of the return rate of the questionnaire in relation to the target population. Discussed also is the demographic characteristics of the respondents.

4.2.1 General Information
A total of 665 questionnaires were issued to the respondents, out of which 645 were returned, translating into 96.99 % return rate. Of those returned, 14 questionnaires accounting for 2.17% were discredited during the data cleaning. This was because 8 of the participants had given multiple responses, 3 had ticked one common response in the questionnaire and 3 had no responses. The actual number of the questionnaires used for analysis was thus 631. This accounted for 94.58% of the participants, representing 362 (53.38%) boys, 267 (41.20%) girls and 2 ‘no response’. Only one type of school, out of the 12 sampled (co-
educational boarding), had a 100% return rate. The breakdown of the target sample size compared with the return rate is presented in Table 4.1

Table 4.1

*Respondents Return Rate*

<table>
<thead>
<tr>
<th>TOS</th>
<th>Target Return Rate</th>
<th>Actual Return rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B G Total</td>
<td>B G Total</td>
</tr>
<tr>
<td>BB</td>
<td>172 - 172</td>
<td>164 - 164</td>
</tr>
<tr>
<td>GB</td>
<td>- 120 120</td>
<td>- 119 119</td>
</tr>
<tr>
<td>COEB</td>
<td>12 7 19</td>
<td>12 7 19</td>
</tr>
<tr>
<td>COED</td>
<td>209 145 354</td>
<td>186 141 327</td>
</tr>
<tr>
<td>NR</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>388 277 665</td>
<td>362 267 631</td>
</tr>
<tr>
<td>Percentage</td>
<td>58.35 41.65 100</td>
<td>53.38 41.20 94.58</td>
</tr>
</tbody>
</table>

*Note.* B=Boys; G=Girls; Sch= School; TOS; Type of School; BB = Boys’ Boarding; GB = Girls’ Boarding; COEB = Co-educational boarding; CO-ED = Coeducational day; NR = No Response

4.2.2 Demographic Data of the Participants

This sub-section presents the demographic information: gender, age, type of school and residential status. The summary of the results is presented in the following Tables:
Table 4.2

Distribution of Respondents by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>2 (0.3)</td>
</tr>
<tr>
<td>Male</td>
<td>362 (57.4)</td>
</tr>
<tr>
<td>Female</td>
<td>267 (42.3)</td>
</tr>
<tr>
<td>Total</td>
<td>631 (100.0)</td>
</tr>
</tbody>
</table>

As shown in Table 4.2, 362(57.4%) of the respondents were males, 267(42.3%) were females, while 2(0.3%) did not respond. The gender variation was due to the uneven distribution of male and female students in the schools that had both genders.

Table 4.3

Distribution of Respondents Age by Gender

<table>
<thead>
<tr>
<th>Age</th>
<th>Male (%)</th>
<th>Females (%)</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR</td>
<td>3 (0.8)</td>
<td>3 (1.1)</td>
<td>16.83a</td>
<td>1.753</td>
<td>-7.306</td>
<td>68.94</td>
</tr>
<tr>
<td>15 years</td>
<td>9 (2.5)</td>
<td>15 (5.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 years</td>
<td>90 (24.9)</td>
<td>95 (35.6)</td>
<td>16.49b</td>
<td>1.951</td>
<td>-6.775</td>
<td>56.02</td>
</tr>
<tr>
<td>17 years</td>
<td>176 (48.6)</td>
<td>122 (45.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 years</td>
<td>73 (20.2)</td>
<td>23 (8.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 years</td>
<td>9 (2.5)</td>
<td>9 (3.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 years</td>
<td>2 (0.6)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>362(100.0)</td>
<td>267(100.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.\(^a\)=Mean score for males; \(^b\)=mean score for females; Sk= Skewness; Kur=Kurtosis; M = Mean; SD = Standard Deviation; NR = No Response.
As presented in Table 4.3, the participants’ ages ranged between 15- 20 years. The majority of percentage of male students 176(48.6) was aged 17 years with their age categories as follows: 15(2.5); 16 (24.9); 17(48.6); 18(20.2); 19(2.5); 20(0.6) and ‘no response’ were 3 (0.8). Similarly, majority of percentage of females 122(45.7) was aged 17 years with their age distribution as follows: 15 (5.6); 16 (35.6); 17; (45.7); 18(8.6); 19(3.4) and ‘no response’ were 3(1.1). The mean age for boys was approximately 17 years, while the mean age for the girls was 16 and half years. This was within the range of years of form three students in Kenya. The skewness and kurtosis values for both boys (Sk=-7.306, Kur= 68.94) and girls (Sk=-6.775, Kur=56.02) was above three indicating that the students’ ages were not normally distributed.
Table 4.4

*Distribution of Respondents Age by School Type*

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Years</th>
<th>Frequency(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys’ Boarding</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>6 (3.7)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>65 (39.6)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>79 (48.2)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>11 (6.7)</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>164 (100.0)</td>
</tr>
<tr>
<td><strong>Girls’ Boarding</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>12 (10.1)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>57 (47.9)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>40 (33.6)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>7 (5.9)</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>3 (2.5)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>119 (100.0)</td>
</tr>
<tr>
<td><strong>Co-educational</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Boarding</strong></td>
<td>16</td>
<td>3 (15.8)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>9 (47.4)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>5 (26.3)</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>19 (100.0)</td>
</tr>
<tr>
<td><strong>Co-educational Day</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>5 (1.5)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>6 (1.8)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>60 (18.3)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>170 (52.0)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>73 (22.3)</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>12 (3.7)</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>327 (100.0)</td>
</tr>
</tbody>
</table>

The participants’ age and type of school was tabulated and the results indicated in Table 4.4. The data in the above table shows that majority of the students in boys boarding, co-educational boarding and co-educational day were 17 years old, except those from girls boarding, where the majority (47.9%) were 16 years old. These corroborate the results of the overall age description in Table 4.3 that
indicates that the mean age was approximately 17 years for male and 16 and half for female. However, about 5% and 0.3% aged 20 years were from co-educational boarding and co-educational day respectively. The ‘no response’ was 0.6% and 1.5% from boys’ boarding and co-educational day respectively. In terms of gender and age, there were more girls aged 16 years in the girls’ boarding school than boys’ boarding school. The implication of these results may be that girls tend to start school earlier than boys.

In terms of age Table 4.4 shows that older students’ were in the co-educational day schools and may be due to their advanced age, were uncomfortable to indicate their age. A possible explanation could be the consequences of introduction of subsidized secondary education in Kenya in the year 2015. This made learners’ who had dropped out of school due to lack of school fees to go back and preferably in day schools. Those that went back may have began again at the point where they had stopped meaning they would be older than their counter parts.

The results indicated in the above tables shows that in as much as the participants were from one class level (form three), there were differences among them in terms of age. This is displayed by the fact that some were as young as 15 years whereas others were 20 years. This may imply that there may be certain factors contributing to these age differences. Some students may have enrolled in primary school late. It is also possible that some students due to poverty or indiscipline may keep dropping out and coming back.
Table 4.5

*Distribution of Respondents by Type of School*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Response</td>
<td>2 (0.3)</td>
</tr>
<tr>
<td>Boys’ Boarding</td>
<td>164 (26.0)</td>
</tr>
<tr>
<td>Girls’ Boarding</td>
<td>119 (18.9)</td>
</tr>
<tr>
<td>Co-educational Boarding</td>
<td>19 (3.0)</td>
</tr>
<tr>
<td>Co-educational Day</td>
<td>327 (51.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>631 (100.0)</strong></td>
</tr>
</tbody>
</table>

The data presented in Table 4.5 reveal that majority of students (51.8%) was from co-educational day school, 26% was from boys’ boarding. About 19% and 3% were from girls’ boarding and co-educational boarding schools’ respectively. The ‘no response’ was only 0.3% of the participants. The participants’ variation was due to the uneven distribution of type of schools in the Sub-County.

Table 4.6

*Distribution of Respondents by Residential Status*

<table>
<thead>
<tr>
<th>Residence</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘No response’</td>
<td>5 (0.8)</td>
</tr>
<tr>
<td>Boarders</td>
<td>303 (48.0)</td>
</tr>
<tr>
<td>Day scholars</td>
<td>323 (51.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>631 (100.0)</strong></td>
</tr>
</tbody>
</table>

The results presented in Table 4.6 indicated that 51.2% of the respondents were day scholars, while 48% were boarders. This indicated that there was relatively an even balance of both boarders and day scholars in the study. In terms of type of school and residential status Table 4.5 and 4.6 shows that there were more co-
educational day schools and day scholar students’. The implications of these results may be that parents tend to prefer day schools due to proximity, lower school fees or for closer monitoring of their children. Whatever the reason for the differences in the type of school, may have implications on the student’s achievement goal orientation and perceived competence.

The qualitative phase sampled respondents from boys’ and girls’ boarding school due to convenient of data collection. For these reason, when presenting findings, the qualitative findings on objective three and four was not provided. The qualitative data presented here, were not designed to test the qualitative findings. However, are used in a way that sheds more light onto quantitative data and further exploration of the complex relationships between students’ achievement goal orientation and academic achievement. This was done thematically.

4.3 Relationship between Students’ Achievement Goal Orientation and Academic Achievement

Objective one sought to establish the relationship between achievement goal orientation and academic achievement. Achievement goal orientation was assessed using a scale with 12 items divided into four subscales (mastery approach, mastery avoidance, performance approach, performance avoidance). Each sub-scale contained 3 items measured on a 5-point rating scale (1 = strongly agree to 5 = strongly disagree). The mean scores obtained from the form three mid
and end of term one exam 2017 were used to represent the academic achievement scores. Sub-section 4.3.1 present the descriptive analysis of the students’ achievement goal orientation and academic achievement.

4.3.1 Description of Participants’ Achievement Goal Orientation

The total scores attained by the participants in the overall achievement goal orientation scale were used to determine the respondents’ level of achievement goal orientation and to compute their means, standard deviation, skewness and kurtosis. Since the total number of items on the scale was 12, the minimum possible score for an individual in the scale was 12 (1x12) and the maximum possible score was 60 (12x5). The scores were then categorized into 3 levels where those ranging from 12 – 28 represented low achievement goal orientation, those ranging from 29 - 44 represented moderate achievement goal orientation and the ones ranging from 45 -60 represented high achievement goal orientation. The summary of the findings is presented in the subsequent Tables:

Table 4.7

*Respondents’ Levels of Achievement Goal Orientation*

<table>
<thead>
<tr>
<th>Goal Orientation</th>
<th>Frequency</th>
<th>$M$</th>
<th>$SD$</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low AGO</td>
<td>92 (14.6)</td>
<td>37.01</td>
<td>6.570</td>
<td>-0.179</td>
<td>0.311</td>
</tr>
<tr>
<td>Moderate AGO</td>
<td>425 (67.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High AGO</td>
<td>113 (17.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>630 (100.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. M = Mean; SD = Standard Deviation; Sk = Skewness; Kur=Kurtosis; AGO = Achievement Goal Orientation*
The findings presented in Table 4.7 reveal that highest percentage (67.4%) of respondents had a moderate achievement goal orientation, 17.9% had a high level, while 14.6% had a low achievement goal orientation level. The mean score was 37.01 ($SD= 6.57$) indicating an average moderate level of achievement goal orientation. Skewness co-efficient was found to be -0.179 which indicated that majority of the respondents rated themselves highly on achievement goal orientation, while the kurtosis value was 0.311 indicating that the achievement goal orientation scores were normally distributed.

Respondents’ scores on achievement goal orientation were further analyzed to compute the descriptive statistics for each sub-scale. Since each sub-scale contained 3 items measured on a 5-point rating scale, the minimum possible score was 3(1x3) and the maximum possible score was 15(1x15). The findings as presented in Table 4.8 indicate that the highest mean was for the performance approach ($M= 10.88, SD= 3.04$), mastery approach ($M = 10.44, SD = 2.936$), performance avoidance ($M = 8.03, SD= 0.277$) and the lowest was for the mastery avoidance ($M= 7.66, SD= 0.413$). The results seem to imply that individual students are motivated by either approaching or avoiding failure. The standard deviation ranged from 0.277 to 3.04.
Table 4.8

Descriptive Statistics for Achievement Goal Orientation

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPP</td>
<td>630</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>10.44</td>
<td>2.936</td>
<td>-0.455</td>
<td>-.685</td>
</tr>
<tr>
<td>MAVO</td>
<td>630</td>
<td>13</td>
<td>2</td>
<td>15</td>
<td>7.66</td>
<td>0.413</td>
<td>0.413</td>
<td>-.637</td>
</tr>
<tr>
<td>PAPP</td>
<td>630</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>10.88</td>
<td>3.04</td>
<td>-0.603</td>
<td>-.532</td>
</tr>
<tr>
<td>PAVO</td>
<td>630</td>
<td>13</td>
<td>2</td>
<td>15</td>
<td>8.03</td>
<td>.277</td>
<td>.277</td>
<td>-.994</td>
</tr>
</tbody>
</table>

Note. MAPP = Mastery Approach; MAVO = Mastery Avoidance; PAPP = Performance Approach; PAVO = Performance Avoidance; Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk= Skewness; Kur=Kurtosis

As shown in Table 4.8, respondents’ scores in mastery approach and performance approach sub-scale were negatively skewed, indicating that they rated themselves highly on those sub-scales. However, respondents’ scores in mastery avoidance and performance avoidance were positively skewed indicating that most of them rated themselves lowly on those sub-scales. The kurtosis scores were below two, indicating that they were normally distributed.

4.3.2 Descriptive Analysis of Participants’ Academic Achievement Scores

The respondents mean scores in the mid-term and end of Term One exam scores 2017 were transformed into Z-score and then T-scores. Table 4.9 represents the summary of the descriptive analysis of the respondents’ academic achievement scores:
Table 4.9

Descriptive Analysis of Academic Achievement

<table>
<thead>
<tr>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>630</td>
<td>45</td>
<td>32</td>
<td>78</td>
<td>50</td>
<td>10</td>
<td>0.219</td>
<td>-.684</td>
</tr>
</tbody>
</table>

Note. Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk = Skewness; Kur = Kurtosis

From Table 4.9, the minimum academic achievement score was 32, while the maximum was 78. The findings also indicated that the scores were positively skewed, indicated that majority of the respondents had low performance perhaps because of respondents level of achievement goal orientation reflected in Table 4.7. The kurtosis score (-.684) indicated that the academic achievement scores were normally distributed. From the results, the scores had also been converted to T-scores (M = 50, SD = 10). The T-scores were used to categorize the respondents’ academic achievement scores into low, average and high. The cut-off scores for each category were as follows: 32-47 as low achievement, 48-63 as average and 64-78 as high achievement.

Further analysis was done to establish the distribution of respondents in the three categories. The findings are as shown in Table 4.10.
Table 4.10

*Participants Levels of Academic Achievement*

<table>
<thead>
<tr>
<th>Academic Achievement</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low academic achievement</td>
<td>266 (42.2)</td>
</tr>
<tr>
<td>Average academic achievement</td>
<td>306 (48.6)</td>
</tr>
<tr>
<td>High academic achievement</td>
<td>58 (9.2)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>630 (100.0)</strong></td>
</tr>
</tbody>
</table>

Table 4.10 reveals that 48.6% of the respondents had an average level of performance, 42.2% had low academic achievement level, while 9.2% only had a high academic achievement level. The results in table 4.10 are a reflection of table 4.7 and seem to give a bearing on the first objective of this study which was to determine the relationship between achievement goal orientation and academic achievement. Where majority of participants’ achievement goal orientation mean score were moderate also posted a correspondingly moderate academic achievement score.

**4.3.3 Hypothesis Testing**

To determine the relationship between achievement goal orientation and academic achievement, the following null hypothesis was tested:

H₀: There is no significant relationship between students’ achievement goal orientation and academic achievement.
To test this hypothesis, a bivariate correlation analysis was conducted using Pearson Product Moment Correlation Coefficient. The findings were as shown in Figure 4.1.

As shown in the Scatter Plot in Figure 4.1, there was evidence of a linear relationship between achievement goal orientation and academic achievement, a relationship that was weak ($R^2=16.6\%$). Higher scores of achievement goal orientation correlated with higher scores of academic achievement. It was, therefore, concluded that a Pearson Product Moment Coefficient Correlation ($r$) could be run and its significance tested. Table 4.11 shows the result of the Pearson
Product Moment Correlation Coefficient between achievement goal orientation and academic achievement.

Table 4.11

*Correlation between Achievement Goal Orientation and Academic Achievement*

<table>
<thead>
<tr>
<th>Achievement goal orientation</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.310***</td>
<td>.000</td>
<td>630</td>
</tr>
</tbody>
</table>

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

Results in Table 4.11 indicate that there was a statistically significant weak positive relationship between achievement goal orientation and academic achievement, $r(630) = .310$, $p < 0.05$. This implied that, as achievement goal orientation increased, there was a corresponding increase in academic achievement. Based on these findings, the null hypothesis was rejected and alternate hypothesis accepted.

To further test the hypothesis, the following four supplementary null hypotheses based on the four levels of achievement goal orientation were formulated:

- $H_{01.1}$ There is no significant relationship between students’ mastery approach and academic achievement.

- $H_{01.2}$ There is no significant relationship between students’ mastery avoidance and academic achievement.
\textbf{H}_{01.3} \text{ There is no significant relationship between students’ performance approach and academic achievement.}

\textbf{H}_{01.4} \text{ There is no significant relationship between students’ performance avoidance and academic achievement.}

In order to test the supplementary hypotheses, a bivariate correlation analysis was conducted using Pearson Product Moment Correlation Coefficient. The findings were as shown in Table 4.12.

Table 4.12

\textit{Correlation between Subscales of Achievement Goal Orientation and Academic Achievement}

<table>
<thead>
<tr>
<th>Academic Achievement</th>
<th>MAPP</th>
<th>MAVO</th>
<th>PAPP</th>
<th>PAVO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.175**</td>
<td>.256**</td>
<td>-.113**</td>
<td>.355**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.005</td>
<td>.000</td>
</tr>
<tr>
<td>\textit{N}</td>
<td>630</td>
<td>630</td>
<td>630</td>
<td>630</td>
</tr>
</tbody>
</table>

\textit{Note}. MAPP = Mastery Approach; MAVO = Mastery Avoidance; PAPP = Performance Approach; PAVO = Performance Avoidance

\textit{**}. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4.12, there was a significant positive relationship in the mean academic achievement score for mastery approach, mastery avoidance and performance avoidance, \(r(630) = .175, p < .05\), \(r(630) = .256, p < .05\) and \(r(630) = .355, p < .05\) respectively. Also, there was a significant negative relationship
between performance approach and academic achievement, $r (630) = -.113$, $p < .05$. Based on the findings of the results, the null hypotheses was therefore rejected and the alternative hypotheses accepted and it was concluded that different levels of achievement goal orientation were significantly related to students’ academic achievement.

### 4.3.4 Qualitative Analysis

**Mastery Approach Orientation**

Mastery goal was characterized in terms of developing ability and seeking task mastery, for a wide range of positive processes and outcomes. Mastery goals focus on developing task mastery and individuals define competence on the basis of self-referencing. Mastery-oriented students increase their competence regardless of the presence of outside observers and will perceive themselves as successful when they try hard, improve their skills or gain performance. This implies that they evaluate their progress and competencies compared to previous or task requirements (Elliot & McGregor, 2001).

**Keh** was categorized as having mastery approach. The participant chose the optional subjects because of his future career. When asked if he was satisfied with his performance he said: “above average but can do better”. He indicated that once in a while he performed poorly. Asked the reason for poor performance, he pointed out that external factors like lack of school fees which led to him being
sent home often. When asked what he did whenever he performed poorly in tests and exams, he said: “I review the paper and go back to the books and research”. Asked why he did this, he said: “to get better grades next exams”. When asked what he did when he encountered challenging content in his studies, he said he did some revision questions and took them to the teacher and also read the short notes. When asked to recall how he felt in moments of failure, he said “very low”. But he did not like to remember it anymore because it kept haunting him for fear that he would fail again.

**Mastery Avoidance Orientation**

Mastery avoidance goal focuses on incompetence relative to task requirements or an intrapersonal defined standard (Elliot & McGregor, 2001). Mastery avoidance oriented students strive to avoid making an error in assignment, not to forget what one has learned and not to lose one’s intellectual capabilities over time (Moller & Elliot, 2006).

**Gab** was categorized as mastery avoidance. He chose the optional subjects because of possible success in future career and joining the university. However, he indicated that he did not enjoy some subjects like History. Asked why when had he chosen the subject, he said: “It is a booster subject”. When asked how he felt in relation to his performance, he said: “low” Prompted further, he said that he had not achieved his target grades. Asked what could be the reason for his low
performance, he said: “lack of effort and when sent home for school fees, I lag behind”. Asked what he does in order to recover the lost time, he said: “Sometimes I just leaves gaps”. The interviewer further asked how he approached challenging content, he said “I do read but going extra mile is challenging”. Gab indicated that encouragement from his parents and motivational speakers increased his motivation for learning. When asked to recall how he felt in moments he performed below his expectation, he said he felt low and did not feel like learning. However, he affirmed that he had no choice but to work hard to avoid doing poorly in order to meet his goals. This implied internalization of external motivations for fruitful academic work.

**Performance Approach Orientation**

Performance goal was characterized in terms of demonstrating ability and seeking normative competence, is judged in respect of interpersonal standards. Performance oriented students focus on demonstrating their abilities to outside observers, outperforming others, to establish their places in a hierarchy for obtaining favourable judgments about their respective competence. Hence, social comparison and public recognition when one has outperformed others is very significant (Matos et al. 2007).

*Sah* was categorized as having performance approach orientation. This participant had selected the optional subjects because, of her dream career. When asked about
her academic performance, she replied: “feeling good”. She added: “my friends were below”. Asked if she ever did poorer than she expected in exams, she said “yes”. What could be the reason? She confessed: “lack of seriousness with what I am doing”. When asked about encountering challenging contents, she said that she sought help from the teachers. Or: “I just stay like that.” When asked about performing poorly in tests and exams: “not talk to those that defeats me, feels like can defeat them again”. When asked on career goal, she gave multiple choices and indicated instability in performance by saying: “Sometimes I perform this way others that way”. When asked to recall a moment she got marks she was unhappy with, she claimed that she cried: “I suffered socially and was not able to relate with others”. When asked if she had anything to add: she said:“ I always want to show that I am able before the teachers and classmates, I answer a lot of questions in class to show this, reach comfort zone and not work hard anymore”.

**Performance Avoidance Orientation**

Performance avoidance focuses on avoidance of normative incompetence (Elliot & McGregor, 2001), relative to one’s peers. Performance avoidance oriented students are motivated to avoid doing worse than others or to be considered less talented. They, therefore, and avoid seeking help with school work from significant others (Hall et al. (2015).

**Maggie** chose subjects because they were her “strongholds and did better in them”. Asked if she was satisfied with her performance in selected subjects she
replied “Yes” but went on to say that Biology still was below targeted grade. Asked what she felt in relation to academic performance she said “average”, but have to keep on. Asked why she performed average she claimed negative attitude towards some subjects. Also, she worked more in her favourite subjects. “You know some subjects need a lot of class participation and I am not good in speaking. I get uncomfortable when the teacher points at me to read. I fear others may laugh at me.” When asked to recall a moment she performed below expectation and how she felt, she said “low” but mentioned that the bitter memory made her to move on because she believed in herself and not in what others said. “It acted as a stepping stone to move on.” What about career goal? She wanted to pursue fashion and design but parents were against this because they wanted her to study law. The respondent was assertive on pursuing a career of her choice and become an independent woman.

Table 4.13

Qualitative Categorization of Respondent Achievement Goal Orientation

<table>
<thead>
<tr>
<th>AGO</th>
<th>Boy</th>
<th>Girl</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Approach</td>
<td>15(37.5)</td>
<td>12(30.0)</td>
<td>27(67.5)</td>
</tr>
<tr>
<td>Mastery Avoidance</td>
<td>1(2.5)</td>
<td>1(2.5)</td>
<td>2(2.5)</td>
</tr>
<tr>
<td>Performance Approach</td>
<td>2(5)</td>
<td>3(7.5)</td>
<td>5(12.5)</td>
</tr>
<tr>
<td>Performance Avoidance</td>
<td>2(5)</td>
<td>4(10)</td>
<td>6(15)</td>
</tr>
<tr>
<td>Total</td>
<td>20(50)</td>
<td>20 (50)</td>
<td>40(100)</td>
</tr>
</tbody>
</table>

*Note. AGO= Achievement Goal Orientation; ( ) indicates %*

The majority of the respondents were categorized into mastery approach (67.5%). This finding contrasted with the quantitative findings where majority of the respondents were categorized into performance approach. Interestingly, the
number of respondents categorized into mastery avoidance was the least (2.5%). These findings were consistent with the quantitative phase of the study. The rest of the participants were categorized into performance avoidance (15%) and performance approach (12.5%).

4. 3. 5 Discussion of the Results

The first objective of the study was to establish the relationship between achievement goal orientation and academic achievement. Quantitative analysis found out a significant and positive relationship between these two aspects as presented in Table 4.11. A significant correlation was found between the four sub-scales of achievement goal orientation (mastery approach, mastery avoidance, performance approach and performance avoidance) as shown in Table 4.12. The study findings indicated that mastery approach, mastery avoidance and performance avoidance had a positive and significant relationship with academic achievement. Performance approach had a significant negative relationship with academic achievements. An interesting finding in this study showed that mastery approach and mastery avoidance positively predicted academic achievement.

The findings were consistent with those of Geta (2012) among college students who reported a significant correlation between achievement goal orientation and academic achievement. The result also corroborated Sideridis and Kaplan (2011) study among university students in South Greece in that mastery goals’ positively related with academic outcomes. However, the study found a significant
relationship between performance approach and performance avoidance contrary to the Sideridis and Kaplan who found an non-significant relationship between the two levels of achievement goal orientation.

These findings also supported those of a study by Agbuga and Xiang (2008) who investigated the relationship between mastery goals, performance approach, performance avoidance and effort among Turkish students. The study reported a positive correlation between mastery goals and achievement related outcomes. However, the study reported a negative correlation between performance approach and performance avoidance with academic achievement. This was inconsistent with the findings of Agbuga and Xiang (2008) registered a non-significant correlation for performance approach and performance avoidance.

The results also corroborated the research findings of Roussel et al. (2011) who examined the link between 2 x 2 achievement goal model among students of similar age in France and found mastery approach and mastery avoidance were positive predictors and performance approach was a negative of academic related outcomes. On the contrary, this study revealed positive correlation for performance avoidance. The findings also support Diseth et al. (2012) and Hulleman and Harackiewicz (2010) empirical finding, who ascertained a significant negative relation between performance goals and academic achievement. This finding is also consistent with Diseth and Samdal (2014) who
reported that mastery approach and performance avoidance positively predicted school performance.

Based on the above discussion, it could be concluded that achievement goal orientation facilitated students’ academic achievement. According to Ames and Archer (1999, as cited in Stevenson, 2011) mastery oriented students displayed more adaptive motivational patterns like use of effort strategies and belief that effort and success were related. The finding seemed to indicate that performance approach was maladaptive and therefore seeking to outperform others was detrimental to achievement and was related to negative effect (Sideridis, 2011). Moreover, maladaptive emotional responses associated with normative component of performance approach goals such as anxiety and shame could explain the negative relationship with performance (Hulleman & Harackiewicz, 2010). The performance oriented students focused on social comparison, ability attributions for performance, normative feedback and perceived their ability as low when they experienced failure. These results relate to Elliot and McGregor (2001) theoretical framework that performance approach students would be highly anxious to protect their self-worth, competence in order to avoid negative evaluation.

The positive relationship between mastery avoidance, performance avoidance and academic achievement was of particular interest because majority of the studies had found negative outcomes. One possible explanation for this interesting result was that students did revise their goal after negative feedback or they simply
began to pursue multiple goals (Senko et al. (2011). The study findings seem to suggest that not all avoidance goals should be considered harmful as indicated by mastery and performance avoidance goal but could be important regulatory mechanisms in achievement settings for self enhancement. This is supported by Franklin (2000, as cited in Mwangi, 2015) who asserted that people’s internal (personal) factors acted as protection to help individuals stabilize and persevere during misfortunes. The protective factors seem to enable students to explore other adaptive behaviours without seeing them as a threat to their competence.

In the qualitative finding, more boys were categorized as having mastery approach than girls. However, there were more girls categorized as having performance approach and performance avoidance. But no gender differences were revealed in mastery avoidance. The gender differences in the qualitative data supported those reported in the quantitative phase of the study that males may be more connected with their individual achievement goal than female. This may be in terms of the home and schooling conditions, female students were operating in an intellectual threatening environment that hinder development of personal factors such as achievement goals than males.
4.4 Relationship between Students’ Perceived Competence and Academic Achievement

Objective two sought to establish the relationship between perceived competence and academic achievement. The scale had 16 items measured on a 5-point rating scale (1 = strongly agree to 5 = strongly disagree). The mean scores obtained from the Form Three mid-term and end of Term One exam 2017 were used to represent the academic achievement levels.

4.4.1 Descriptive Analysis of Respondents Perceived Competence

The minimum possible score was 16 (1x16) and the maximum possible score was 80 (16x5). Scores between 16 to 48 represented entity perceived competence, while scores between 49 to 80 represented flexible perceived competence. The descriptive analysis is as shown in Table 4.13:

Table 4.14

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPC</td>
<td>217</td>
<td>30</td>
<td>48</td>
<td>44.83</td>
<td>2.937</td>
<td>-1.451</td>
<td>3.120</td>
</tr>
<tr>
<td>FPC</td>
<td>414</td>
<td>49</td>
<td>67</td>
<td>54.35</td>
<td>3.896</td>
<td>0.696</td>
<td>0.049</td>
</tr>
</tbody>
</table>

*Note. Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk = Skewness; Kur = Kurtosis; EPC = Entity Perceived Competence; FPC = Flexible Perceived Competence*
The data in Table 4.14 shows that the minimum and maximum scores for perceived competence sub scale were 30 and 67. This was against the minimum possible score which was 16 and 80 respectively. The minimum score attained for flexible perceived competence was 49 and the maximum score was 67, while the minimum score attained for entity perceived competence was 30 and the maximum score was 48. The mean for flexible perceived competence and entity perceived competence were 54.35 ($SD= 3.896$) and 44.83 ($SD= 2.937$) respectively.

The obtained scores for entity perceived competence were negatively skewed indicating that the respondents rated themselves highly on scale, while those for flexible perceived competence were positively skewed indicating that they rated themselves lowly on that scale. The kurtosis scores on the entity perceived competence was 3.120, indicating that the scores were not normally distributed. This meant that the scores clustered around the mean, implying a leptokurtic distribution. The flexible perceived competence scores were normally distributed as indicated by the kurtosis score of 0.049. The distribution of these scores indicates that majority of the participants had a flexible perceived competence.

The researcher become interested in finding out how flexible and entity perceived competence related with academic achievement.

**4.4.2 Hypothesis Testing**

To determine the relationship between perceived competence and academic achievement, the following hypothesis was developed:
H₀₂: There is no significant relationship between students’ perceived competence and academic achievement.

Statistical test: Pearson’s Product Moment Correlation Co-efficient.

To further test the null hypothesis, the following two supplementary hypotheses were formulated:

H₀₂.₁: There is no significant relationship between students’ flexible perceived competence and academic achievement.

H₀₂.₂: There is no significant relationship between students’ entity perceived competence and academic achievement.

To test this hypothesis, a bivariate correlation analysis was conducted using Pearson Product Moment Correlation Coefficient. The findings were as shown in Figure 4.2
As shown in the Scatter Plot in Figure 4.2, there was evidence of a negative linear relationship between perceived competence and academic achievement, a relationship that was weak ($R^2=2.8\%$). Higher scores of perceived competence correlated with lower scores of academic achievement. It was therefore concluded that a Pearson Product Moment Coefficient Correlation ($r$) could be run and its significance tested. Table 4.15 shows the result between perceived competence and academic achievement.
Table 4.15

*Correlation between Perceived Competence and Academic Achievement*

<table>
<thead>
<tr>
<th></th>
<th>Academic achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td></td>
</tr>
<tr>
<td>EPC Correlation Coefficient</td>
<td>-.036</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.600</td>
</tr>
<tr>
<td>N</td>
<td>217</td>
</tr>
<tr>
<td>FPC Correlation Coefficient</td>
<td>-.192**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>414</td>
</tr>
</tbody>
</table>

*Note.* EPC = Entity Perceived Competence; FPC = Flexible Perceived Competence**. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4.15, there was a significant negative relationship between flexible perceived competence and academic achievement, \( r (414) = -.192, p < .01 \). This implied that increase in flexible perceived competence was associated with a decrease in academic achievement. However, there was insignificant relationship between entity perceived competence and academic achievement, \( r (217) = -.036, p > .05 \). From the findings, the null hypothesis on flexible perceived competence was rejected and the alternate hypothesis accepted. But the null hypothesis on entity perceived competence was accepted.
4.4.3 Qualitative analysis

Flexible Perceived Competence

Flexible perceived competence focuses on individual’s beliefs about ability as malleable or incremental. Flexible perceived competence students’ beliefs that ability can improve with effort and learning (Dweck, 1999).

Eva indicated that she chose the optional subjects because she was good at them and “they were interesting”. When asked if she was satisfied with her performance, “she said yes” but went on to say: “I need to put effort in Sciences, haven’t reached the target grades”. A question on what she did when she performed poorly in exams, she replied:

“I make decisions and create more time for revision”. Prompted further, she said: “I get keen when the teacher is teaching and give extra time and effort in failed subject”. When asked what she did whenever she encountered challenging content, she said that she tried more practice in order to do better in the difficult subject. When asked to recall a moment she performed below expectations and how she felt, she said that she was encouraged because she could fix up the mistakes. Asked whether her memory was still active, she said “Yes” Asked why, she replied: “my parents were disappointed but their words are motivating factors even today”. This indicates a believe that intelligence with effort increases hence flexible. This also supports Dweck’s theoretical perspective, that students’ who
view their intelligence as flexible activates more positive processes and will persist, often engage and put effort when faced with failure.

**Entity Perceived Competence**

Entity perceived competence belief focuses on individual’s beliefs about ability as fixed or unchangeable. Entity perceived competence students’ belief that ability cannot be improved with effort and learning (Dweck, 1999).

Ashy chose her optional subjects because of her future career and also because she understood them better. However she indicated that she was not performing to her expectation, saying: “Physics bad news” and she added: “Math’s is always a challenge”. Asked what could be the reason for her poor performance she replied: “I work hard, think very hard, always gets the same grades yet taught well”. Prompted further, the participant said that she revised few subjects that were easy and avoided subjects like Math’s. Asked what she did in times of challenging content or failure in exams, she said that she went through the questions again or asked fellow students or the teacher. Ashy indicated that when she performed below expectations, she sometimes felt like she did not want to be in school. She further said: “I feel like school was never met for me”. However, the participant confessed that she had to put in more effort in order to meet her academic goals. When asked if she had anything else to add, she lamented: “I
think my poor grades are just out of my low potential, I do not have the ability to answer hard questions”.

Table 4.16

<table>
<thead>
<tr>
<th>Perceived Competence</th>
<th>Boy</th>
<th>Girl</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible Perceived Competence</td>
<td>8(20)</td>
<td>9(22.5)</td>
<td>17(42.5)</td>
</tr>
<tr>
<td>Entity Perceived Competence</td>
<td>12(30)</td>
<td>11(27.5)</td>
<td>23(57.5)</td>
</tr>
<tr>
<td>Total</td>
<td>20(50)</td>
<td>20 (50)</td>
<td>40(100)</td>
</tr>
</tbody>
</table>

*Note. ( ) indicate %*

To categorize the participants’ perceived competence, their choices of description of perceived competence were analyzed as presented in Table 4.16. Majority (57.5%) of the respondents in the qualitative study were categorized as having entity perceived competence. However, more girls were categorized as flexible perceived competence while boys showed more entity perceived competence than girls.

**4.4.4 Discussion of the Results**

The quantitative and qualitative analyses gave a bearing on the second objective of the study which was to find out the relationship between perceived competence and academic achievement. A negative and significant relationship was found between the two as Table 4.15 shows. This finding meant that the two domains of
perceived competence had a correspondingly low academic achievement. The qualitative finding concerning more participants as having entity perceived competence contrasted with the quantitative findings where the majority of participants were in flexible perceived competence. This inconsistency might be because the qualitative phase of the study used a smaller sample.

These results were consistent with those of Blake (2015) who found out a negative relationship between the learner perception of intelligence and academic achievement. The results also supported a study by Shen (2003) who analyzed the effects of self perception on students’ Mathematics and Science achievement within Boston 8th grade students. The results revealed a negative correlation between self perception and academic achievement. They were also in line with those arrived at by Lucangeli and Scrugg (2003) in a sample of 180 Italian middle school students in which the six subscales of perceived competence negatively correlated with academic achievement. The study was corroborated by McGregor (2004) and Li et al. (2017) who found a significant correlation between academic achievement and perceived competence.

However, the findings are contrary to those of Paykachat et al. (2013) who explored the relationship between perceived academic competence and academic help seeking behaviour. The results were also inconsistent with those reported in
the study by Yoon, et al. (2011) among statistics University students in South West United States. A three way interaction effect showed that perceived competence related positively with academic achievement.

Overall, the qualitative finding supports Dweck’s theoretical perspective, that students’ who view their intelligence as flexible activates more positive processes and will persist, often engage and put effort when faced with failure. However, entity students’ activates more negative processes and embrace tasks that are assured of success and at less risk of failure. In addition, this perspective draws from social-cognitive framework that student approaches to feedback play a key role in the cognitive processes which follow performance in the situation of success or failure (Dweck, 1999). When environmental structures focus on social comparison, normative feedback or ability of learners are more likely to make viable attributions for performance.

Based on the above discussion, it can be concluded that the type of perceived competence that a learner has influence their academic achievement scores. However, it is worth noting that in as much as perceived competence negatively related with academic achievement there are other factors that also influence academic achievement. These include not limited to achievement goal and effort. A learner despite having any type of perceived competence and oriented to specific achievement goal, need effort to maintain and enhance their academic achievement. When failure occurs, students may attribute outcomes to low ability
resulting into their developing self-serving biases in academic domain in which success and failure become irrelevant. Additionally, students invest their perceived competence in some other domains than academic domain.

4.5 School Type Differences in Students’ Achievement Goal Orientation

The third objective sought to find out differences in students’ achievement goal orientation due to type of school attended.

4.5.1 Descriptive Analysis of Achievement Goal Orientation Based on School Type

Descriptive analysis of respondents’ goal orientation based on school type differences is shown in Table 4.17
Table 4.17

*Descriptive Analysis for Achievement Goal Orientation*

<table>
<thead>
<tr>
<th>TOS Sub-Scale</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB MAPP</td>
<td>164</td>
<td>11</td>
<td>4</td>
<td>15</td>
<td>10.18</td>
<td>2.914</td>
<td>-.959</td>
<td>.377</td>
</tr>
<tr>
<td>MAVO</td>
<td>164</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>8.62</td>
<td>2.855</td>
<td>-1.028</td>
<td>.377</td>
</tr>
<tr>
<td>PAPP</td>
<td>164</td>
<td>11</td>
<td>4</td>
<td>15</td>
<td>9.74</td>
<td>2.932</td>
<td>-.878</td>
<td>.377</td>
</tr>
<tr>
<td>PAVO</td>
<td>164</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>9.79</td>
<td>3.001</td>
<td>-.890</td>
<td>.377</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>164</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB MAPP</td>
<td>119</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td>10.59</td>
<td>3.153</td>
<td>-.056</td>
<td>.440</td>
</tr>
<tr>
<td>MAVO</td>
<td>119</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td>7.89</td>
<td>2.881</td>
<td>-.293</td>
<td>.440</td>
</tr>
<tr>
<td>PAPP</td>
<td>119</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td>10.61</td>
<td>3.312</td>
<td>-.076</td>
<td>.440</td>
</tr>
<tr>
<td>PAVO</td>
<td>119</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td>8.32</td>
<td>3.579</td>
<td>-.927</td>
<td>.440</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO-EB MAPP</td>
<td>19</td>
<td>11</td>
<td>3</td>
<td>14</td>
<td>9.42</td>
<td>3.805</td>
<td>-1.525</td>
<td>1.014</td>
</tr>
<tr>
<td>MAVO</td>
<td>19</td>
<td>10</td>
<td>3</td>
<td>13</td>
<td>7.68</td>
<td>2.730</td>
<td>.223</td>
<td>1.014</td>
</tr>
<tr>
<td>PAPP</td>
<td>19</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>11.37</td>
<td>3.655</td>
<td>-.429</td>
<td>1.014</td>
</tr>
<tr>
<td>PAVO</td>
<td>19</td>
<td>11</td>
<td>3</td>
<td>14</td>
<td>7.58</td>
<td>3.548</td>
<td>-.977</td>
<td>1.014</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO-ED MAPP</td>
<td>327</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>10.56</td>
<td>2.838</td>
<td>-.450</td>
<td>.269</td>
</tr>
<tr>
<td>MAVO</td>
<td>327</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>7.05</td>
<td>2.440</td>
<td>-.299</td>
<td>.269</td>
</tr>
<tr>
<td>PAPP</td>
<td>327</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>11.50</td>
<td>2.857</td>
<td>-.003</td>
<td>.269</td>
</tr>
<tr>
<td>PAVO</td>
<td>327</td>
<td>13</td>
<td>2</td>
<td>15</td>
<td>7.03</td>
<td>2.946</td>
<td>-.564</td>
<td>.269</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>327</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* MAPP = Mastery Approach; MAVO = Mastery Avoidance; PAPP = Performance Approach; PAVO = Performance Avoidance; BB = Boys Boarding; GB = Girls Boarding; CO-EB = Co-educational Boarding; CO-ED = Co-educational Day; N = Mean; SD = Standard Deviation; SK = Skewness; KUR = Kurtosis
From Table 4.17, Girls Boarding School had the highest mean score for mastery approach, 10.59 ($SD = 3.153$), followed by Co-educational Day School, 10.56 ($SD = 2.838$), Boys’ Boarding School 10.18($SD = 2.914$) and Co-educational Boarding School had 9.42($SD =3.805$). The Co-educational Day School had the highest mean score for performance approach, 11.50($SD = 2.857$), followed by Co-educational Boarding School, 11.37($SD = 3.655$), Girls’ Boarding School 10.61 ($SD= 3.312$) and Boys’ Boarding School 9.74($SD = 2.74$).

Boys’ Boarding School had the highest mean score for mastery avoidance and performance avoidance 8.62 ($SD =2.855$) and 9.79($SD= 3.001$) while Co-educational Day School had the lowest 7.05($SD = 2.440$) and 7.03($SD =2.946$) respectively. Respondent scores on mastery avoidance from Co-educational Boarding School were positively skewed, indicating low performance on that sub scale. Scores on the other sub scales in all the schools were negatively skewed, indicating a high performance on those sub scales. All the scores for skewness and Kurtosis were less than 3. This implied that achievement goal orientation data were normally distributed across the school types. Based on the above results the researcher went ahead to test if there were differences in students’ achievement goal orientation due to type of school attended.
4.5.2 Hypothesis Testing

To determine whether there were differences in students’ achievement goal orientation due to school types, the following null hypothesis was formulated:

$H_{03}$: There are no significant differences in students’ achievement goal orientation due to type of school attended.

The following supplementary hypotheses were further derived from the hypothesis:

$H_{03.1}$: There are no significant differences in students’ mastery approach due to type of school attended.

$H_{03.2}$: There are no significant differences in students’ mastery avoidance due to type of school attended.

$H_{03.3}$: There are no significant differences in students’ performance approach due to type of school attended.

$H_{03.4}$: There are no significant differences in students’ performance avoidance due to type of school attended.

To test these supplementary hypotheses, a one way multivariate analysis of variance (MANOVA) test was conducted. This test was suitable since there was more than one dependent variable being measured against the different groups in the independent variable. The findings are shown in the subsequent Tables:
Table 4.18

*Box's Test of Equality of Covariance Matrices for Type of School*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Box's M</td>
<td>79.238</td>
</tr>
<tr>
<td>F</td>
<td>2.546</td>
</tr>
<tr>
<td>df1</td>
<td>30</td>
</tr>
<tr>
<td>df2</td>
<td>15752.590</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Note.* a= Design: intercept+ type of school

From Table 4.18, homogeneity of variance-covariances matrices was violated, as assessed by Box's test of equality of covariance matrices (*p*<.001).

From Table 4.19, the assumption of homogeneity of variances was violated for mastery approach, mastery avoidance and performance avoidance sub-scales, as assessed by Levene's Test of Homogeneity of Variance (*p*<.05). However, for the performance approach sub-scale, there was homogeneity of variances (*p*>0.05) as assessed by Levene’s test of equality of variances. This meant that the distribution of achievement goal orientation scores, across the types of school were equal and were sufficient for the purpose of conducting a multivariate analysis of variance.
Table 4.19

Levene's Test of Equality of Error Variance for School Type

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPP</td>
<td>3.154</td>
<td>3</td>
<td>625</td>
<td>.024</td>
</tr>
<tr>
<td>MAVO</td>
<td>4.533</td>
<td>3</td>
<td>625</td>
<td>.004</td>
</tr>
<tr>
<td>PAPP</td>
<td>2.193</td>
<td>3</td>
<td>625</td>
<td>.088</td>
</tr>
<tr>
<td>PAVO</td>
<td>3.973</td>
<td>3</td>
<td>625</td>
<td>.008</td>
</tr>
</tbody>
</table>

Note. a. Design: Intercept + School type

MAPP= Mastery approach; MAVO= Mastery avoidance; PAPP= Performance approach; PAVO= Performance avoidance

As shown in Table 4.20, students in Girls Boarding School, Co-educational Boarding School and Co-educational Day School scored higher in their performance approach (\( M = 10.61, SD = 3.312 \); \( M = 11.37, SD = 3.655 \) and \( M = 11.50, SD = 2.857 \), respectively) than the other achievement goal orientation sub-scales. However, students in Boys Boarding scored higher on mastery approach (\( M = 10.18, SD = 2.914 \)) than on the other sub-scales. But Co-educational Day had the lowest mean scores in mastery approach and performance avoidance, 7.05 (\( SD = 2.44 \)) and 7.03 (\( SD = 2.946 \)) respectively. The results in Table 4.20 are a reflection of Table 4.12 that seem to give a bearing of the differences in students’ achievement goal orientation due to type of school attended.
Table 4.20

Descriptive Statistics of Achievement Goal Orientation Grouped by Types of School

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys boarding</td>
<td>10.18</td>
<td>2.914</td>
<td>164</td>
</tr>
<tr>
<td>Girls boarding</td>
<td>10.59</td>
<td>3.153</td>
<td>119</td>
</tr>
<tr>
<td>Co-educational boarding</td>
<td>9.42</td>
<td>3.805</td>
<td>19</td>
</tr>
<tr>
<td>Co-educational day</td>
<td>10.56</td>
<td>2.838</td>
<td>327</td>
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Note. MAPP= Mastery approach; MAVO= Mastery avoidance; PAP = Performance approach; PAVO= Performance avoidance

The students in Girls Boarding School, Co-educational Boarding School and Co-educational Day School scored higher in their performance approach, which negatively related with academic achievement. This could explain the persistence
poor performance in the Sub-County. On the other hand, Boys Boarding School had the highest mean score for performance avoidance which positively related with academic achievement. This could explain the reason for relatively better academic achievement in Boys Boarding School.

Table 4.21

*Multivariate Tests for Type of School*

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*Note.* TOS = Type of School  
  a. Design: Intercept + Type of school  
  b. Exact statistic  
  c. The statistic is an upper bound on $F$ that yields a lower bound on the significance level.
From Table 4.21, there was a statistically significant difference between the types of schools on the combined dependent variables, $F(12, 1872) = 10.334, p < .0005$; Pillai’s $V = .186$; partial $\eta^2 = .062$. Pillai's Trace was reported considering that there were unequal sample sizes and the Box's Test of Equality of Covariance was statistically significant.

Based on the above findings, the multivariate test was followed up with individual univariate one-way ANOVA for each dependent variable. This helped in determining whether the mean differences in achievement goal orientation revealed were significant across the four types of schools. The findings were as shown in Table 4.22.

As shown in Table 4.22, follow-up univariate ANOVAs showed that the mastery avoidance scores ($F(3, 625) = 13.208, p < .0005$; partial $\eta^2 = .06$), performance approach scores ($F(3, 625) = 12.986, p < .0005$; partial $\eta^2 = .059$) and performance avoidance scores ($F(3, 625) = 29.281, p < .0005$; partial $\eta^2 = .123$) were statistically, significantly different between the students from different schools, using a Bonferroni adjusted $\alpha$ level of .025. However the mastery approach scores ($F(3, 625) = 12.608, p = .228$; partial $\eta^2 = .007$) were not statistically significant between students from different schools.
Table 4.2

Tests of Between-Subjects Effects

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Note. MAPP = Mastery Approach; MAVO = Mastery Avoidance; PAPP = Performance Approach; PAVO = Performance Avoidance; SS = Sum of Squares; MS = Mean Squares

a. R Squared = .007 (Adjusted R Squared = .002)
b. R Squared = .060 (Adjusted R Squared = .055)
c. R Squared = .059 (Adjusted R Squared = .054)
d. R Squared = .123 (Adjusted R Squared = .119)
Based on these findings, the three supplementary null hypotheses on mastery avoidance, performance approach and performance avoidance were thus rejected and the alternate hypotheses accepted. However, the supplementary null hypothesis on mastery approach was accepted. Post hoc pair wise comparison employing Tukey HSD test, where the homogeneity of variances were met and Games-Howell test and where the homogeneity of variances were violated, were done to determine where the differences lie. The findings are shown in Table 4.23.

Games-Howell test showed that for mastery avoidance, students from Boys’ and Girls’ Boarding School had, statistically, significantly higher scores than students from Co-educational Day Schools by 1.57 and 0.84 respectively, (p < .0005).
Table 4.23

Post Hoc Analyses

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Note. BB = Boys Boarding; GB = Girls Boarding; Co-EB = Co-Educational Boarding; Co-ED = Co-Educational Day; MD; Mean Difference; SE = Standard Error; LB = Lower Bound; UB = Upper Bound; CL = Confidence Interval; TOS = Type of School
Based on observed means.
The error term is Mean Square (Error) = 9.656.
* The mean difference is significant at the .05 level.

For performance approach, Tukey HSD test showed that students from Co-educational Day Schools had statistically significant higher scores than students from Boys’ Boarding Schools and Girls’ Boarding Schools by 1.75 and 0.89 respectively, \( p < .0005 \). For performance avoidance, Games-Howell test showed that students from Boys’ Boarding Schools had statistically significant higher scores than students in Girls’ Boarding Schools and Co-educational Day Schools by 1.47 and 2.76 respectively, \( p < .0005 \).

4.5.3 Discussion of the findings
The study hypothesized that there was no significant difference in students’ achievement goal orientation due to type of school attended. From the multivariate tests’ results, there were significant differences in achievement goal orientation due to type of school. The results indicated that mastery avoidance, performance approach, performance avoidance had statistically significant differences while no significant differences were registered for mastery approach based on participants type of school. In addition, Boys’ and Girls’ Boarding Schools had significantly higher scores for mastery avoidance than students from
Co-educational Day Schools. However, Co-educational Day Schools had significantly higher scores for performance approach than Boys’ Boarding Schools and Girls’ Boarding Schools, while Boys Boarding Schools had significant higher scores for performance avoidance than students in Girls Boarding Schools and Co-educational Day Schools. Notably, there were no significant differences reported in the Co-educational Boarding Schools across all the levels of achievement goal orientation.

The findings of a significant difference between the type of school and achievement goal orientation corroborates the finding of Ireri (2015) who explored the interaction of school type and achievement goal orientation among Form Three students in Embu County, Kenya. In Girls Only Boarding School, approach achievement goal orientation significantly predicted academic achievement while avoidance achievement goal orientation significantly predicted academic achievement in Boys Only Boarding Schools. The quantitative finding also supports Mutweleli (2014) who reported a significant interaction effect between type of school and personal factors like academic motivation and level of self-regulated learning. However, the two variables did not significantly predict academic achievement in Girls’ Boarding Schools.
The results implied that the type of school improved predictive weight when included among factors which influence students’ academic achievement. These findings are similar to those of Flum and Kaplan (2010, as cited in Ireri, 2015) that school is a vital setting for the development of students’ achievement goals. It is likely that the differences in and within school may be an important factor contributing to variance in students’ academic achievement. The results in Table 4.21 indicate that the mean difference was not in favour of students from Co-educational Boarding. This seemed to show that the learning experiences in Co-educational Boarding did not sufficiently encourage the development and use of achievement goal orientation, a central factor in predicting academic achievement.

Although the results in the present study may not adequately explain the reasons for variance in achievement goal orientation, it nevertheless sheds some light on the facts that type of school attended may influence academic outcomes. This is because some factors within the various types of schools such as school environment may come into play to influence achievement goal orientation linking to theoretical perspective of Elliot and McGregor (2001).

4.6 School Type Differences in Students’ Perceived Competence

The fourth objective sought to find out the school type differences in perceived competence.
4.6.1 Descriptive Analysis of Students’ Perceived Competence Based on School Type Differences

Descriptive analysis of respondents’ perceived competence based on school type differences is shown in Table 4.24.

Table 4.24

*Descriptive Analysis for Perceived Competence as Per School Types*

<table>
<thead>
<tr>
<th>TOS</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Sk</th>
<th>Kur</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB</td>
<td>EPC</td>
<td>78</td>
<td>37</td>
<td>48</td>
<td>45.12</td>
<td>2.486</td>
<td>-.911</td>
</tr>
<tr>
<td></td>
<td>FPC</td>
<td>86</td>
<td>49</td>
<td>63</td>
<td>53.38</td>
<td>3.598</td>
<td>.761</td>
</tr>
<tr>
<td></td>
<td>Valid N (listwise)</td>
<td>164</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GB</td>
<td>EPC</td>
<td>27</td>
<td>30</td>
<td>48</td>
<td>44.63</td>
<td>4.049</td>
<td>-2.581</td>
</tr>
<tr>
<td></td>
<td>FPC</td>
<td>92</td>
<td>49</td>
<td>67</td>
<td>54.09</td>
<td>3.669</td>
<td>1.048</td>
</tr>
<tr>
<td></td>
<td>Valid N (listwise)</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COEB</td>
<td>EPC</td>
<td>6</td>
<td>42</td>
<td>48</td>
<td>45.33</td>
<td>2.160</td>
<td>-.463</td>
</tr>
<tr>
<td></td>
<td>FPC</td>
<td>13</td>
<td>49</td>
<td>62</td>
<td>53.23</td>
<td>4.512</td>
<td>1.025</td>
</tr>
<tr>
<td></td>
<td>Valid N (listwise)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COED</td>
<td>EPC</td>
<td>105</td>
<td>37</td>
<td>48</td>
<td>44.61</td>
<td>2.963</td>
<td>-.863</td>
</tr>
<tr>
<td></td>
<td>FPC</td>
<td>222</td>
<td>49</td>
<td>67</td>
<td>54.93</td>
<td>3.976</td>
<td>.552</td>
</tr>
<tr>
<td></td>
<td>Valid N (listwise)</td>
<td>327</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* EPC = Entity Perceived Competence; FPC = Flexible Perceived Competence; BB = Boys Boarding; GB = Girls Boarding; COEB = Co-educational Boarding; COED = Co-educational day; Max = Maximum; Min = Minimum; M = Mean; SD = Standard Deviation; Sk = Skeweness; Kur = Kurtosis; TOS = Type of school.
From Table 4.24, Co-educational Day Schools had the highest mean score for flexible perceived competence, 54.93 (3.976), while Co-educational Boarding School had the lowest mean score, 53.23 (4.512). Respondent scores on flexible perceived competence from Girls Boarding, Co-educational Boarding and Co-educational Day, were positively skewed, indicating a few of the participants reported low performance on flexible perceived competence. Kurtosis score for Girls’ Boarding in entity perceived competence was 7.324, an indication that the scores were not normally distributed.

4.6.2 Hypothesis Testing

To determine whether there were significant school type differences in students’ perceived competence, the following null hypothesis was formulated:

$H_{04}$: There are no significant differences in students’ perceived competence due to the type of school attended.

Since students’ perceived competence had two levels, the following two supplementary hypotheses were formulated:

$H_{04.1}$: There are no significant differences in students’ entity perceived competence due to the type of school attended.

$H_{04.2}$: There are no significant differences in students’ flexible perceived competence due to the type of school attended.
To test the first supplementary hypothesis, one way ANOVA compared the means of the different school types in the entity perceived competence sub-scale. Prior to running the one way Anova, the assumptions of homogeneity of variances was tested. The findings were as shown in Table 4.25.

Table 4.25

*Test of Homogeneity of Variances*

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.298</td>
<td>3</td>
<td>212</td>
<td>.276</td>
</tr>
</tbody>
</table>

As shown in Table 4.25, the assumption of homogeneity of variances was met as assessed by Levene's Test of Homogeneity of Variance ($p>.05$). This meant that the distribution of entity perceived competence scores, across the types of school were equal and were sufficient for the purpose of conducting a one way analysis of variance.

The findings on one way ANOVA are presented in the subsequent Tables:
Table 4.26

Descriptives Statistics of Entity Perceived Competence Grouped by School Type

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Min</td>
</tr>
<tr>
<td>BB</td>
<td>78</td>
<td>45.12</td>
<td>2.486</td>
<td>.282</td>
<td>44.55</td>
</tr>
<tr>
<td>GB</td>
<td>27</td>
<td>44.63</td>
<td>4.049</td>
<td>.779</td>
<td>43.03</td>
</tr>
<tr>
<td>COEB</td>
<td>6</td>
<td>45.33</td>
<td>2.160</td>
<td>.882</td>
<td>43.07</td>
</tr>
<tr>
<td>COED</td>
<td>105</td>
<td>44.61</td>
<td>2.963</td>
<td>.289</td>
<td>44.04</td>
</tr>
<tr>
<td>Total</td>
<td>216</td>
<td>44.81</td>
<td>2.935</td>
<td>.200</td>
<td>44.42</td>
</tr>
</tbody>
</table>

*Note.* BB = Boys Boarding; GB = Girls Boarding; COEB = Co-educational Boarding; COED = Co-educational Day; M = Mean; SD = Standard Deviation; SE = Standard Error; CI = Confidence Interval; LB = Lower Bound; UB = Upper Bound; Min = Minimum; Max = Maximum

From Table 4.26, the entity perceived competence scores increased from Girls Boarding ($M = 44.63, SD = 4.049$), Co-educational Day ($M = 44.61, SD = 2.963$), to Boys’ Boarding ($M = 45.12, SD = 2.486$) to Co-educational Boarding ($M = 45.33, SD = 2.160$) in that order. From Table 4.25, a one-way ANOVA was conducted to determine whether entity perceived competence scores were different for groups from different school types. Participants were classified into four groups: Boys Boarding School ($n = 78$), Girls’ Boarding school ($n = 27$), Co-educational Boarding School ($n = 6$) and Co-educational Day School ($n = 105$).
Table 4.27

*One Way ANOVA for Mean Differences in Entity Perceived Competence*

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>14.011</td>
<td>3</td>
<td>4.670</td>
<td>.539</td>
<td>.656</td>
</tr>
<tr>
<td>Within Groups</td>
<td>1838.582</td>
<td>212</td>
<td>8.673</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1852.593</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* SS = Sum of the Squares; MS = Mean Square

Data was normally distributed for each group, as indicated by kurtosis scores, apart from the scores from Girls’ Boarding Schools (7.324); and there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances (*p* = .276). The differences between these school types were not statistically significant, *F* (3,212) = 0.539, *p* = .656. Based on these findings, therefore, the first supplementary null hypothesis was accepted.

To test the second supplementary hypothesis, one way ANOVA compared the means of the different school types in the flexible perceived competence subscale. Prior to running the one-way ANOVA, the assumptions of homogeneity of variances was tested. The findings are shown in Table 4.28:
As shown in Table 4.28, the assumption of homogeneity of variances was met as assessed by Levene's Test of Homogeneity of Variance ($p>0.05$). This meant that the distribution of perceived competence scores, across the types of school were equal and were sufficient for the purpose of conducting a one way analysis of variance.

The findings on one way ANOVA are presented in the subsequent Tables.
Table 4.29

*Descriptives Statistics of Flexible Perceived Competence Grouped by School Type*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>95% C I</th>
<th>LB</th>
<th>UB</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB</td>
<td>86</td>
<td>53.38</td>
<td>3.598</td>
<td>.388</td>
<td>52.61</td>
<td>54.16</td>
<td>49</td>
<td>63</td>
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</tr>
<tr>
<td>GB</td>
<td>92</td>
<td>54.09</td>
<td>3.669</td>
<td>.383</td>
<td>53.33</td>
<td>54.85</td>
<td>49</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>CO-EB</td>
<td>13</td>
<td>53.23</td>
<td>4.512</td>
<td>1.251</td>
<td>50.50</td>
<td>55.96</td>
<td>49</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>CO-ED</td>
<td>222</td>
<td>54.93</td>
<td>3.976</td>
<td>.267</td>
<td>54.40</td>
<td>55.45</td>
<td>49</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>413</td>
<td>54.37</td>
<td>3.892</td>
<td>.191</td>
<td>53.99</td>
<td>54.74</td>
<td>49</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* BB = Boys Boarding; GB = Girls Boarding; CO-EB = Co-educational Boarding; CO-ED = Co-educational Day; M = Mean; SD = Standard Deviation; SE = Standard Error; CI = Confidence Interval; LB = Lower Bound; UB = Upper Bound; Min = Minimum; Max = Maximum

From Table 4.29, the flexible perceived competence scores increased from Co-educational Boarding school ($M = 53.23, SD = 4.512$), to Boys’ Boarding school ($M = 53.38, SD = 3.598$), to Girls’ Boarding school ($M = 54.09, SD = 3.669$) to Co-educational Day school ($M = 54.93, SD = 3.976$) in that order.

Table 4.30

*One Way ANOVA for Mean Differences in Flexible Perceived Competence*

<table>
<thead>
<tr>
<th></th>
<th>$SS$</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>176.996</td>
<td>3</td>
<td>58.999</td>
<td>3.980</td>
<td>.008</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6062.796</td>
<td>409</td>
<td>14.823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6239.792</td>
<td>412</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* SS = Sum of Squares
From Table 4.30, a one-way ANOVA was conducted to determine whether flexible perceived competence scores were different for groups from different school types. Participants were classified into four groups: Boys’ Boarding School (n = 86), Girls’ Boarding School (n = 92), Co-educational Boarding school (n = 13) and Co-educational Day Schools (n = 222). Data was normally distributed for each group, as indicated by kurtosis scores; and there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances (p = .359). The differences between these school types were statistically significant, F (3,409) = 3.980, p<.05. Based on these findings, therefore, the second supplementary null hypothesis was rejected and the alternative hypothesis accepted.

From the findings which showed a statistically significant difference between the school types and flexible perceived competence, a post hoc analysis was conducted using Tukey HSD to determine whether there were differences in flexible perceived competence, given the different types of schools. The results are presented in Table 4.31:

Tukey HSD test showed that students from Co-educational Day Schools had, statistically, significantly higher mean difference on the flexible perceived competence for Co-educational Day Schools to Boys’ Boarding School (1.544,
95% CI [0.28, 2.81]), p<.05. However, the other mean differences within the school types were not statistically significant.

Table 4.31

Post HOC Analyses

<table>
<thead>
<tr>
<th>(I) TOS</th>
<th>(J) TOS</th>
<th>M D (I-J)</th>
<th>S E</th>
<th>Sig.</th>
<th>95% C I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukey</td>
<td>BB</td>
<td>GB</td>
<td>-.703</td>
<td>.577</td>
<td>.616</td>
</tr>
<tr>
<td>HSD</td>
<td>CO-EB</td>
<td>.153</td>
<td>1.146</td>
<td>.999</td>
<td>-2.80</td>
</tr>
<tr>
<td></td>
<td>CO-ED</td>
<td>-1.544*</td>
<td>.489</td>
<td>.009</td>
<td>-2.81</td>
</tr>
<tr>
<td></td>
<td>GB</td>
<td>BB</td>
<td>.703</td>
<td>.577</td>
<td>.616</td>
</tr>
<tr>
<td></td>
<td>CO-EB</td>
<td>.856</td>
<td>1.141</td>
<td>.876</td>
<td>-2.09</td>
</tr>
<tr>
<td></td>
<td>CO-ED</td>
<td>-.841</td>
<td>.477</td>
<td>.293</td>
<td>-2.07</td>
</tr>
<tr>
<td></td>
<td>CO-EB</td>
<td>BB</td>
<td>-.153</td>
<td>1.146</td>
<td>.999</td>
</tr>
<tr>
<td></td>
<td>GB</td>
<td>-.856</td>
<td>1.141</td>
<td>.876</td>
<td>-3.80</td>
</tr>
<tr>
<td></td>
<td>CO-ED</td>
<td>-1.697</td>
<td>1.099</td>
<td>.412</td>
<td>-4.53</td>
</tr>
<tr>
<td></td>
<td>CO-ED</td>
<td>BB</td>
<td>1.544*</td>
<td>.489</td>
<td>.009</td>
</tr>
<tr>
<td></td>
<td>GB</td>
<td>.841</td>
<td>.477</td>
<td>.293</td>
<td>-.39</td>
</tr>
<tr>
<td></td>
<td>COEB</td>
<td>1.697</td>
<td>1.099</td>
<td>.412</td>
<td>-1.14</td>
</tr>
</tbody>
</table>

Note. BB = Boys Boarding; GB = Girls Boarding; CO-EB = Co-educational Boarding; CO-ED = Co-educational Day; TOS = Type of School; MD = Mean Difference; SE = Standard Error; LB = Lower Bound; UB = Upper Bound; CI = Confidence Interval

*. The mean difference is significant at the 0.05 level.

4.6.3 Discussion of the Results

The fourth hypothesis sought to find out differences in students’ perceived competence due to type of school attended. From the one way ANOVA results, there were no significant difference in students’ entity perceived competence due to type of school attended while flexible perceived competence had a statistically
significant difference. In addition, the difference was in favour of students from Co-educational Day Schools and Boys Boarding School. However, the mean differences in flexible perceived competence among learners from Girls Boarding Schools and Co-educational Boarding Schools were not statistically significant.

The study generally supported the finding by Frenette and Chan (2015) in a longitudinal study with student participants in Canada. Their students’ characteristics (high or low ability) had a significant positive relationship with type of school. The results also aligned with those reported in a study by Otanga (2016) that type of school had a statistically significant main effect on self-esteem which was an important aspect of perceived competence. The findings further supported Mwangi (2015) empirical findings which indicated a significant mean difference in academic resilience, an important personal factor and type of school. Interestingly, Girls Boarding had the highest mean difference while Boys’ Boarding had the lowest mean difference, a finding contrary to the context of the study.

The findings supported those of Shapka and Keating (2003) who conducted a longitudinal study to explore the benefits of girls only classroom instruction in Math’s and Science in public girls and co-educational classes in Ontario, Canada. The study’s result revealed a positive significant relationship for boys and girls when taught together. But the findings were inconsistent with those of the study
for it indicated a negative significant relationship between perceived competence in girls taught in their own classes. It was also contrary to that of Awori(2010) who found out that girls’ with hearing impairments in boarding facilities had high perceived ability in specific academic functioning than mixed day secondary schools. The discrepancies in the results may be due to disability.

4.7 Prediction Model of Academic Achievement from Achievement Goal Orientation and Perceived Competence

The fifth objective of the study sought to establish the predictive model of academic achievement from achievement goal orientation and perceived competence. To achieve this objective, the following null hypothesis was formulated for testing:

H_05: There is no significant prediction model of academic achievement from achievement goal orientation and perceived competence.

The following two supplementary hypotheses were formulated to further achieve the objective:

H_{05.1}: There is no significant predictive model of academic achievement from achievement goal orientation.

H_{05.2}: There is no significant predictive model of academic achievement from perceived competence.

To test the supplementary hypotheses, two sets of standard multiple regressions were conducted to predict students’ academic achievement. The first analysis
included the four sub-scales of achievement goal orientation, while the second analysis included the two sub scales of students’ perceived competence.

4.7.1 Prediction Model of Academic Achievement from Achievement Goal Orientation

The first analysis sought to test the first supplementary hypothesis that:

\[ H_{05.1} \]: There is no significant prediction model of academic achievement from achievement goal orientation.

The findings were as highlighted in the subsequent Tables.

Table 4.32

Correlations among the Study Variables

<table>
<thead>
<tr>
<th></th>
<th>AA</th>
<th>MAPP</th>
<th>MAVO</th>
<th>PAPP</th>
<th>PAVO</th>
<th>FPC</th>
<th>EPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson</td>
<td>1.000</td>
<td>.175</td>
<td>.256</td>
<td>-.113</td>
<td>.355</td>
<td>.174</td>
<td>.294</td>
</tr>
<tr>
<td>Correlation</td>
<td>.175</td>
<td>1.000</td>
<td>.014</td>
<td>.154</td>
<td>.064</td>
<td>.269</td>
<td>.194</td>
</tr>
<tr>
<td>MAVO</td>
<td>.256</td>
<td>.014</td>
<td>1.000</td>
<td>-.050</td>
<td>.359</td>
<td>.023</td>
<td>.243</td>
</tr>
<tr>
<td>PAPP</td>
<td>-.113</td>
<td>.154</td>
<td>-.050</td>
<td>1.000</td>
<td>-.141</td>
<td>.216</td>
<td>.092</td>
</tr>
<tr>
<td>PAVO</td>
<td>.355</td>
<td>.064</td>
<td>.359</td>
<td>-.141</td>
<td>1.000</td>
<td>.059</td>
<td>.231</td>
</tr>
<tr>
<td>FPC</td>
<td>.174</td>
<td>.269</td>
<td>.023</td>
<td>.216</td>
<td>.059</td>
<td>1.000</td>
<td>.500</td>
</tr>
<tr>
<td>EPC</td>
<td>.294</td>
<td>.194</td>
<td>.243</td>
<td>.092</td>
<td>.231</td>
<td>.500</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*Note.* MAPP = Mastery Approach; MAV = Mastery Avoidance; PAPP=Performance Approach; PAVO = Performance Avoidance; FPC= Flexible Perceived Competence; EPC = Entity Perceived Competence; AA=Academic Achievement
As shown in Table 4.32, the correlations between the variables ranged from weak to moderate negative and positive relationships and thus multicollinearity was not implied between the independent variables. This meant that academic achievement can be predicted from the study variables without adversely affecting the regression estimates. Based on this, the researcher conducted a multiple regression analysis.

Table 4.33

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.421</td>
<td>.177</td>
<td>.172</td>
<td>9.102</td>
<td>1.039</td>
</tr>
</tbody>
</table>

Note. a. Predictors: (Constant), PAVO, MAPP, PAPP, MAVO
b. Dependent Variable: Academic achievement

As shown in Table 4.33, the independent variable explained 17.2% of the variation in dependent variable as indicated by the adjusted R square value. This result indicated that achievement goal orientation predicts academic achievement. It also suggested that some other factors explained the rest of variance in students’ academic achievement.
From Table 4.34, performance avoidance, mastery approach, performance approach and mastery avoidance, statistically, significantly predicted academic achievement, $F(4, 625) = 33.564, p < .0005$. A multiple regression was run to predict academic achievement from mastery approach, mastery avoidance, performance approach and performance avoidance. The assumptions of linear, independence of errors, unusual points and normality of residuals were met. These variables, statistically, significantly predicted academic achievement, $F(4, 625) = 33.564, p < .0005$, adj. $R^2 = .172$. All four variables added, statistically, significantly to the prediction, $p < .05$. 

### Table 4.34

**ANOVA for Differences in Academic achievement Across the Levels of Achievement Goal Orientation**

<table>
<thead>
<tr>
<th>Model</th>
<th>$SS$</th>
<th>$df$</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>11122.267</td>
<td>4</td>
<td>2780.567</td>
<td>33.564</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>51777.733</td>
<td>625</td>
<td>82.844</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>62900.000</td>
<td>629</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Academic achievement

b. Predictors: (Constant), performance avoidance, mastery approach, performance approach, mastery avoidance

A multiple regression was run to predict academic achievement from mastery approach, mastery avoidance, performance approach and performance avoidance. The assumptions of linear, independence of errors, unusual points and normality of residuals were met. These variables, statistically, significantly predicted academic achievement, $F(4, 625) = 33.564, p < .0005$. A multiple regression was run to predict academic achievement from mastery approach, mastery avoidance, performance approach and performance avoidance. The assumptions of linear, independence of errors, unusual points and normality of residuals were met. These variables, statistically, significantly predicted academic achievement, $F(4, 625) = 33.564, p < .0005$, adj. $R^2 = .172$. All four variables added, statistically, significantly to the prediction, $p < .05$. 

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Table 4.35

*Multiple Regression Results for Predicting Academic Achievement from Achievement Goal Orientation*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Std. co-eff</th>
<th>95.0% C I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>SE</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>36.313</td>
<td>2.142</td>
<td>.169</td>
</tr>
<tr>
<td>MAPP</td>
<td>.576</td>
<td>.126</td>
<td>4.589</td>
</tr>
<tr>
<td>MAVO</td>
<td>.550</td>
<td>.143</td>
<td>3.840</td>
</tr>
<tr>
<td>PAPP</td>
<td>-.303</td>
<td>.122</td>
<td>-.092</td>
</tr>
<tr>
<td>PAVO</td>
<td>.842</td>
<td>.119</td>
<td>.278</td>
</tr>
</tbody>
</table>

*Note.* MAPP = Mastery approach; MAVO = Mastery avoidance; PAPP = Performance approach; PAVO = Performance avoidance; LB = Lower Bound UB = Upper Bound; CI = Confidence Interval; SE = Standard Error

The resultant equation for predicting academic achievement from achievement goal orientation was:

\[
\hat{Y} = 36.313 + 0.576(MAPP) + 0.55(MAVO) - 0.303(PAPP) + 0.842(PAVO)
\]

Where: \( \hat{Y} \) = predicted academic achievement; MAPP = Mastery approach; MAVO = Mastery avoidance; PAPP = Performance approach; PAVO = Performance avoidance.
Based on the results in Table 4.35, performance avoidance appears to offer better predictive value than that contributed by mastery approach, mastery avoidance and performance approach. These results show that students’ with performance approach are more likely to have low academic achievement. The first supplementary hypothesis was rejected and the alternate hypothesis accepted.

### 4.7.2 Prediction Model of Academic Achievement from Perceived Competence

**Competence**

The second analysis sought to test the supplementary hypothesis that:

\[ H_{0.5.2}: \text{There is no significant prediction model of academic achievement from perceived competence.} \]

The findings are highlighted in the subsequent Tables:

Table 4.36

*Model Summary for Perceived competence on Academic Achievement*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>R Square Adjusted</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.284^a</td>
<td>.081</td>
<td>.078</td>
<td>9.602</td>
<td>1.296</td>
</tr>
</tbody>
</table>

*Note.* a. Predictors: (Constant), Entity Perceived Competence, Flexible Perceived Competence  
b. Dependent Variable: Academic achievement

As shown in Table 4.36, the independent variables explained 7.8% of the variation in dependent variable as indicated by the adjusted R square value. This
results’ indicated that perceived competence predicts academic achievement. It also suggested that some other factors explained the rest of variance in students’ academic achievement.

Table 4.37

ANOVA for Differences in Perceived Competence by Academic Achievement

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2</td>
<td>2544.787</td>
<td>27.600</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>627</td>
<td>92.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>629</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. a. Dependent Variable: Academic achievement   
b. Predictors: (Constant), entity perceived competence, flexible perceived competence

From Table 4.37, flexible perceived competence and entity perceived competence, statistically, significantly predicted academic achievement, $F (2, 627) = 27.6, p < .05.$
Table 4.38

Multiple Regression for Predicting Academic Achievement from Perceived Competence

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% C I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S E</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>57.402</td>
<td>3.691</td>
<td>15.460</td>
</tr>
<tr>
<td>FPC</td>
<td>.097</td>
<td>.093</td>
<td>.046</td>
</tr>
<tr>
<td>EPC</td>
<td>-.409</td>
<td>.070</td>
<td>-.259</td>
</tr>
</tbody>
</table>

Note. EPC = Entity Perceived Competence; FPC = Flexible Perceived Competence; SE = Standard Error; LB = Lower Bound; UB = Upper Bound; CL = Confidence Interval

A multiple regression was run to predict academic achievement from students’ flexible perceived competence and entity perceived competence. The assumptions of linear, independence of errors, unusual points and normality of residuals were met. These variables, statistically, significantly predicted academic achievement, $F (2, 627) = 92.02, p< .05$, adj. $R^2 = .081$. Entity perceived competence added, statistically, significantly to the prediction, $p< .05$, while flexible perceived competence did not statistically add to the model, $p=.302$. 

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The resultant equation for predicting academic achievement from perceived competence was:

\[ \hat{Y} = 57.402 + 0.097(FPC) - 0.409(EP\text{C}) \]

Where: \( \hat{Y} \) = predicted academic achievement; \( FPC \) = Flexible perceived competence; \( EP\text{C} \) = Entity perceived competence.

These results suggest that flexible perceived competence and entity perceived competence together predict academic achievement. However, while flexible perceived competence positively predict academic achievement, entity perceived competence negatively correlated with academic achievement. The findings in Table 4.38 and in the regression model seem to validate the work of Dweck (1999) that students who hold entity perceived competence are more likely to indicate maladaptive behaviour and cognitive outcomes and mostly results in low academic achievement. The second supplementary hypothesis was rejected and the alternate hypothesis accepted.

Based on the findings of the standard multiple regression, the researcher conducted a stepwise multiple regression to establish whether the four types of achievement goal orientation and the two types of perceived competence were all necessary for predicting academic achievement. The findings of the regression are shown in the subsequent Tables.
Table 4.39

Model Summary of the Study Variables

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Sq</th>
<th>Adjusted R Sq</th>
<th>SE of the Est</th>
<th>R Sq Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.355a</td>
<td>.126</td>
<td>.125</td>
<td>9.356</td>
<td>.126</td>
<td>90.631</td>
<td>1</td>
<td>628</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.411b</td>
<td>.169</td>
<td>.166</td>
<td>9.131</td>
<td>.043</td>
<td>32.271</td>
<td>1</td>
<td>627</td>
<td>.000</td>
</tr>
<tr>
<td>3</td>
<td>.427c</td>
<td>.182</td>
<td>.178</td>
<td>9.065</td>
<td>.013</td>
<td>10.199</td>
<td>1</td>
<td>626</td>
<td>.001</td>
</tr>
<tr>
<td>4</td>
<td>.442d</td>
<td>.196</td>
<td>.190</td>
<td>8.998</td>
<td>.013</td>
<td>10.325</td>
<td>1</td>
<td>625</td>
<td>.001</td>
</tr>
<tr>
<td>5</td>
<td>.455e</td>
<td>.207</td>
<td>.200</td>
<td>8.943</td>
<td>.011</td>
<td>8.722</td>
<td>1</td>
<td>624</td>
<td>.003</td>
</tr>
</tbody>
</table>

Note. SE = Standard Error; Sq = Square; Est = Estimate
a. Predictors: (Constant), Performance avoidance
b. Predictors: (Constant), Performance avoidance, Entity perceived competence
c. Predictors: (Constant), Performance avoidance, Entity perceived competence, Mastery approach
d. Predictors: (Constant), Performance avoidance, Entity perceived competence, Mastery approach, Performance approach
e. Predictors: (Constant), Performance avoidance, Entity perceived competence, Mastery approach, Performance approach, Mastery avoidance
f. Dependent Variable: Academic Achievement

As shown in Table 4.39, the resultant prediction model included five of the six predictors and was reached in five steps with no variables removed. As presented in Table 4.40 and 4.41, at step 1 of the analysis, performance avoidance was entered into the regression equation and it was, statistically, significantly related to students’ academic achievement (F (1, 628) = 90.631, p<.05. The coefficient of determination was $R^2=0.126$ indicating approximately 12.6% of the variance of students’ academic achievement could be accounted for by performance avoidance.
Table 4.40

**ANOVA for Differences in Study Variables by Academic Achievement**

<table>
<thead>
<tr>
<th>Model</th>
<th>Regression</th>
<th>Residual</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7932.706</td>
<td>54967.294</td>
<td>62900.000</td>
</tr>
<tr>
<td>2</td>
<td>10623.355</td>
<td>52276.645</td>
<td>62900.000</td>
</tr>
<tr>
<td>3</td>
<td>11461.439</td>
<td>51438.561</td>
<td>62900.000</td>
</tr>
<tr>
<td>4</td>
<td>12297.361</td>
<td>50602.639</td>
<td>62900.000</td>
</tr>
<tr>
<td>5</td>
<td>12994.945</td>
<td>49905.055</td>
<td>62900.000</td>
</tr>
</tbody>
</table>

**Note:**

a. Dependent Variable: Academic Achievement  
b. Predictors: (Constant), Performance Avoidance, Entity Perceived Competence  
c. Predictors: (Constant), Performance Avoidance, Entity Perceived Competence, Mastery Approach  
d. Predictors: (Constant), Performance Avoidance, Entity Perceived Competence, Mastery Approach, Performance Approach  
e. Predictors: (Constant), Performance Avoidance, Entity Perceived Competence, Mastery Approach, Performance Approach, Mastery Avoidance  
f. Dependent Variable: Academic Achievement
At step 2 of the analysis, entity perceived competence entered into the regression equation. Its linear combination with performance avoidance was, statistically, significantly related to students’ academic achievement (F (2, 627) = 63.708, p<.05. The coefficient of determination was $R^2 = .169$ indicating approximately 16.9% of the variance of students’ academic achievement could be accounted for jointly by performance avoidance and negative perceived competence. At step 3 of the analysis, mastery approach entered into the regression equation. Its linear combination with performance avoidance and entity perceived competence was, statistically, significantly related to students’ academic achievement (F (3, 626) = 46.495, p<.05. The coefficient of determination was $R^2 = .182$ indicating approximately 18.2% of the variance in students’ academic achievement could be accounted for by the three independent variables. At step 4 of the analysis, performance approach entered into the regression equation. Its linear combination with performance avoidance, entity perceived competence and mastery approach was, statistically, significantly related to students’ academic achievement (F (4, 625) = 37.972, p<.05. The coefficient of determination was $R^2 = .196$ indicating approximately 19.6% of the variance in students’ academic achievement could be accounted for by the four independent variables. At step 5 of the analysis, mastery avoidance entered into the regression equation. Its linear combination with performance avoidance, entity perceived competence, mastery approach and performance approach was, statistically,
significantly related to students’ academic achievement (F (5, 624) = 32.497, p < .05. The coefficient of determination was R² = .207 indicating approximately 20.7% of the variance in students’ academic achievement could be accounted for by the five independent variables.

Of the five predictors in the model, performance avoidance received the strongest predictive weight (β = .246), followed by entity perceived competence (β = -.185), mastery approach (β = .140), performance approach (β = -.118) and lastly mastery avoidance (β = .115). The Beta values further indicated that performance avoidance, mastery approach and mastery avoidance contributed positively to the prediction of academic achievement, while entity perceived competence and performance approach contributed negatively to the prediction.

Therefore, the most robust regression equation for predicting students’ academic achievement from achievement goal orientation and perceived competence was:

\[ \hat{Y} = 47.011 + 0.742(\text{PAVO}) - 0.291(\text{EPC}) + 0.472(\text{MAPP}) - 0.386(\text{PAPP}) + 0.42(\text{MAVO}) \]  

Where \( \hat{Y} \) = predicted academic achievement score; PAVO = performance avoidance; EPC = entity perceived competence; MAPP = mastery approach; PAPP = performance approach; MAVO = mastery avoidance.
Table 4.41

*Stepwise Multiple Regression Analysis Coefficients Predicting Academic Achievement*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Std. Co</th>
<th>95.0% C I for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S E</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>41.409</td>
<td>.976</td>
</tr>
<tr>
<td></td>
<td>PAVO</td>
<td>1.072</td>
<td>.113</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>50.497</td>
<td>1.862</td>
</tr>
<tr>
<td></td>
<td>PAVO</td>
<td>.927</td>
<td>.113</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>-.334</td>
<td>.059</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>45.730</td>
<td>2.376</td>
</tr>
<tr>
<td></td>
<td>PAVO</td>
<td>.914</td>
<td>.112</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>-.303</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td>MAPP</td>
<td>.396</td>
<td>.124</td>
</tr>
<tr>
<td>4</td>
<td>(Constant)</td>
<td>50.115</td>
<td>2.725</td>
</tr>
<tr>
<td></td>
<td>PAVO</td>
<td>.857</td>
<td>.113</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>-.321</td>
<td>.059</td>
</tr>
<tr>
<td></td>
<td>MAPP</td>
<td>.463</td>
<td>.125</td>
</tr>
<tr>
<td></td>
<td>PAPP</td>
<td>-.386</td>
<td>.120</td>
</tr>
<tr>
<td>5</td>
<td>(Constant)</td>
<td>47.011</td>
<td>2.905</td>
</tr>
<tr>
<td></td>
<td>PAVO</td>
<td>.742</td>
<td>.119</td>
</tr>
<tr>
<td></td>
<td>EPC</td>
<td>-.291</td>
<td>.060</td>
</tr>
<tr>
<td></td>
<td>MAPP</td>
<td>.472</td>
<td>.124</td>
</tr>
<tr>
<td></td>
<td>PAPP</td>
<td>-.386</td>
<td>.120</td>
</tr>
<tr>
<td></td>
<td>MAVO</td>
<td>.420</td>
<td>.142</td>
</tr>
</tbody>
</table>

*Note.* PAVO = Performance Avoidance; EPC = Entity Perceived Competence; MAPP = Mastery Approach, PAPP = Performance Approach; MAVO = Mastery Avoidance
a. Dependent Variable; Academic Achievement
The equation (5) indicated that students’ academic achievement increased by 0.246, 0.14 and 0.115 for each standard deviation of performance avoidance, mastery approach and mastery avoidance respectively, and it reduced by 0.185 and 0.118 for each standard deviation of entity perceived competence and performance approach.

4.7.3 Qualitative analyses

Achievement Goal Orientation

Achievement goal orientation refers to the purpose or reason an individual students’ engage in an academic learning task (Elliot & McGregor, 2001). In achievement goal theory, these goals guide students' behavior and cognition as they engage in an academic task. Students' goal orientation has been linked to different patterns of learning (Stevenson, 2011).

Zuh was asked why he chose the subjects in form three he replied: “They are easy to master and love the teacher”. When asked to rate himself in relation to performance, he said: “Ok”. Upon being asked whether he ever did poorer than he expected in exams, he quickly replied: “Yes”. When prompted further as to what could be the reason, he said: “I put effort but sometimes avoid some contents”. When asked what he did when he performed poorly in tests or exams, he said: “I hide it and feel discouraged”. Prompted why does he hides the work: “Not to get embarrassed and not to lower his self-esteem”. This response seems to imply a
student can pursue multiple goals that is mastery and performance orientation. Upon being asked what he felt about himself as a student when he performed below expectations, he replied: “I felt like giving up in life, commit suicide and not come back to school”. When asked if the memory is still active, he said: “Yes, i fear failing the exams since my parents are harsh”. When asked how he felt about himself in school in relation to performance, he said: “useless” and added “good for nothing”. He would have wanted to be a doctor but was performing poorly in subjects like Chemistry and Biology. He also emphasized that no one wished to be defeated but always wanted to be the best. Furthermore, “I try to please my parents, forcing me to sometimes steal exams”. Zuh responses seem to support Elliot and McGregor theory that different achievement goals are linked to different patterns and processes of learning.

**Perceived competence**

Perceived competence refers to students’ individual belief about ability to accomplish an academic task successfully or efficiently (Dweck, 1999). In achievement relevant settings perceived competence provides an evaluation that energizes or directs behavior. It also moderates individual goal adoption (Cury et. al.2006).

**Kama** was categorized as having performance avoidance. When asked why he chose the optional subjects, he said: “My future career relies on these subjects. I
want to be an entrepreneur. That is why I chose business studies”. The participant indicated that he was satisfied with his performance but, “there is a need to improve”. When asked if there were times he did poorer than he expected, he said: “not that much, once”. And what did he do whenever he encountered challenging content in his studies? He responded that he took time to consult the teacher and went further to say: “I put effort in doing much more”. Asked why he preferred teacher and not fellow students, he said: “I do not want my friends to see me as a bother or stupid”. When asked to recall a moment he performed below his anticipation, he replied that he felt low, but the memory was no longer active, because: “Now I pass and I am a few steps in getting the highest grade”. Kama affirmed that he was hopeful he would do better because they had started a study group to discuss Sciences. Prompted further, he said: “You know we are many in class and I am not good in language to ask a question in class I prefer discussion groups”.

The above verbatim transcription seems to give a reflection to research objectives and theoretical framework. It also provided rich data on how the variables related to one another. The qualitative data were used to categorize the respondents into achievement goal orientation and perceived competence as presented in Table 4.42.
Table 4.42

Distribution of Perceived Competence across the Qualitative Achievement Goal Orientation

<table>
<thead>
<tr>
<th>AGO</th>
<th>FPC</th>
<th>EPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery approach</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Mastery avoidance</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Performance approach</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Performance avoidance</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>23</td>
</tr>
</tbody>
</table>

Note. AGO= Achievement Goal Orientation; FPC = Flexible perceived competence; EPC = Entity perceived competence

Those respondents categorized as having mastery approach selected entity perceived competence more than flexible perceived competence. But respondents categorized as having performance approach selected flexible perceived competence more than entity perceived competence. In addition, no differences were observed in the distribution of perceived competence across mastery avoidance and performance avoidance. These finding gives credibility to the correlation between achievement goal orientation and perceived competence reported in the quantitative phase of the study (See Table 4.32).
4.7.4 Discussion of the Results

The researcher hypothesized that achievement goal orientation and perceived competence had no significant predictive model on academic achievement. From the multiple regression findings, achievement goal orientation and perceived competence revealed significant predictive values. The quantitative analyses indicated that achievement goal orientation had the strongest significant predictive weight on academic achievement. The Beta values further indicated that performance avoidance, mastery approach and mastery avoidance had significant positive results while entity perceived competence and performance approach contributed negatively to the prediction. But, positive perceived competence was insignificant.

The superior predictive value of achievement goal orientation supported achievement goal perspective that, it is one of the most important factors’ in explaining students’ academic achievement. As discussed in the literature review student oriented to differential domains of achievement goal activates more positive processes and consequences than negative. However, this study and previous studies find consensus in the finding that maladaptive behaviour and outcomes are likely predicted by entity belief and performance goals.

The findings supports Cock and Watt (2004) who found out that perceived competence and achievement goal orientation was predictive of academic
achievement score but mastery goals were moderate in strength. These findings were consistent with those of Walker (2011) among Mid- West United States high school students, that mastery goals and performance goals were related to academic achievement. The findings also supported Gonida et al. (2006) and Gonzalez- pienda et al. (2002) who established that cognitive affective had predictive value on adolescents’ academic behaviour and outcomes.

The study generally concurred with results revealed by Yeung et al. (2014) among secondary school students in Western Sydney who exhibited a predictive value for motivational factors and academic achievement. However, their study found out that perceived competence was a stronger predictor than mastery goal orientation. This displayed a negative predictive weight, a finding contrary to current study’s results.

In line with Ferla and Valcke (2010), who found out that a high level of self perceived competence had both negative and positive effects on students’ academic achievement, this study identified more or less similar statistical relationship. The Structural Equation Model (SEM) indicated that indirect positive predictive weight was mediated by adoption of mastery goals. This implied that when learning tasks were challenging, sustained effort could develop mastery orientation and subsequently better academic achievement. Notably, multiple regression analysis indicated that achievement goal orientation and
perceived competence explained the 20.7% of the variance in students’ academic achievement, higher than 13.9% of the variance reported in the earlier study. The contrast in the study findings could be attributable to the differences in the sample size, cultural and situational context (Ireri, 2015).

In general, students reflecting high self-perceived competence were more likely to adopt mastery or performance goals and achieve better academic results. However, the current study also implied that high self–perceived competence could turn into overconfidence and, if not accompanied by mastery achievement goal, students could became less persistent and therefore get poorer grades (Ferla & Valcke, 2010).

The differences in the equations for predicting academic achievement from achievement goal orientation and perceived competence were notable. The predictive value for predicting academic achievement from achievement goal orientation explained 17.2% of the variance in students’ academic achievement. But the value for predicting academic achievement from perceived competence only explained 7.8% of the variance in students’ academic achievement. However, together, the predictor variables in a model explained 20.7% of the variance in students’ academic achievement. This finding implied that achievement goal orientation and perceived competence together were predictive of students’ academic achievement. It also implied that some other factors
accounted for the rest of variance in the students’ academic achievement. The findings were in agreement with the view that within the realm of educational psychology, achievement goal orientation represented an important tenet for conceptualizing students’ academic achievement (Matos et al. 2007).

Notably, combined predictive model of achievement goal orientation and perceived competence indicated that performance avoidance had the highest positive value. Interestingly, performance approach had a negative predictive value. The finding corroborates that of Magno (2017) in which were flexible beliefs were significantly predicted by performance approach and mastery approach while entity belief predicted performance approach and performance avoidance.

In general, performance approach has been linked to mild anxiety, surface level learning strategies which focus on rote memorization, undermine collaborative learning encourage, exam cheating and more use of self – handicapping strategies (Geta, 2012; Hulleman et al., 2010; Murdock & Anderman, 2006; Poortvliet et al., 2007 & Wawire, 2010). The performance oriented students believe that their intelligence is fixed and unchangeable so they embrace tasks where they are assured of success and less risk of failure and, consequently, negative predictive value with academic achievement.
The study’s findings concur with those of Chen and Wong (2015) and Matos et al. (2007) which indicated that mastery goals were related to adaptive educational outcomes, irrespective of mastery orientation. Students could, therefore, benefit from the positive consequences of pursuing mastery goals. Furthermore, the findings in relation to mastery orientation and academic achievement brought to understanding that academic outcomes were efforts related and that poor performance for mastery oriented students was less threatening but associated with effort related factors.

The key emergent themes and sub-themes which arose from interviewees responses were analyzed and discussed in relation to achievement goal orientation and perceived competence. This provided rich elaboration on how the variables under consideration related to academic achievement.

**Theme 1: Subject Selection**

From the qualitative analyses the first theme was the participants’ subject selection. The respondents indicated the motivational dispositions reflective of differential pattern of processes and outcomes linked to achievement goals. From theory, need for achievement and fear of failure were such important processes. This finding explains the superior predictive value of achievement goal orientation reported from quantitative results. Overall, majority of the students’ chose subjects because of their bearing on their individual future careers and
achievement. However, some of the respondents’ chose subjects because they believed that these were easy to grasp and perhaps requires less attention to warrant fear of failure.

However, most of respondents indicated that they were guided either by respective Dean of Studies, parents or motivational speakers in subject selections. But nearly half of the respondents seemed to imply that they were never guided. This demonstrated the influences of significant others as sources of students’ academic goals and perceptions. Notably, majority of respondents discussed subject choices with their parents. Qualitative findings confirmed that parents apparently exerted some degree of influence on adolescents’ perceptions of competence with regard to difficulty and importance of achievement tasks.

**Theme 2: Relevant Achievement Processes**

The interviewees responded to several questions about their individual academic performance, reasons for and how they respond to failure in tests and exams. Majority of the respondents indicated that their performance was poor or unsatisfactory. Moreover most students who were categorized as ‘mastery approach’ confessed that due to less practice and lack of effort they sometimes performed poorer than expected. The qualitative findings which link success with effort seem to support quantitative results that mastery goals was positively related to academic achievement(Chen & Wong, 2015). But, some students
blamed their low ability, negative attitude towards the subjects or the teachers and general ignorance as their reasons for poor performances. This demonstrated the perception of success or failure as outcome-dependent particularly when and students engage in academic tasks as a means to an end. The qualitative findings which link failure with low ability seem to explain quantitative results that perceived competence was negatively related to academic achievement (Ferla & Valcke, 2010).

In terms of responding to failure, mastery-oriented students indicated that they put in more effort by doing more revisions, confirming from references and seeking help. That is, if students were evaluating competence according to intrapersonal standards (Elliot & McGregor, 2001). Some students indicated that failure was accompanied by negative affective and motivational processes such as crying, withdrawal from peers, general disregard of or disengagement from given subjects, or even in extreme cases suicidal tendencies. Others engaged in exam malpractices such as cheating. The finding reaffirmed quantitative results and Murdock & Anderman (2006) assertion that achievement setting focusing in normative standard, maladaptive behavior and cognitive outcomes were inevitable.

C. Perceived Class/ School Environment

The learning contexts complement motivational dispositions of achievement goals. In classroom settings which are perceived as engaging or interesting,
students are drawn into the learning processes. The respondents highlighted the differences in school environmental structures and learning strategies which could be utilized to maximize students’ outcomes. Majority of students reported discussion groups/peer teaching and organized contests/symposium as the most preferred methods of learning since they were collaborative.

From the quantitative analyses, such an approach could explain the reported positive correlation between mastery goals and performance avoidance with regard to academic achievement. According to De Castella and Byrne (2015) performance avoidant students may benefit more from having peer performance and participation in teaching competitions which could improve motivation towards learning. Notably, the Boys Boarding mentioned mentorship programmes/ motivational speakers as helpful in acquiring further knowledge regarding career educational requirements. The qualitative findings seem to agree with Ireri (2015) assertion that school is a vital setting for development of students’ personal factors. It is therefore likely that differences between and within school attended may be an important factor contributing to variance in students’ academic achievement.

4.8 Exploratory Analysis

Based on the findings and the research objectives, the researcher further conducted exploratory analyses on how respondents’ gender and age interacted
with the relationship between achievement goal orientation, perceived competence and academic achievement and also with the gender and age differences in achievement goal orientation and perceived competence.

4.8.1 Interaction of Gender, Age, Achievement Goal Orientation, Perceived Competence and Academic Achievement

This study further explored how respondents’ gender and age interacted with achievement goal orientation, perceived competence and academic achievement. The results are presented in the subsequent tables.

From Table 4.43, males had an average achievement goal orientation mean of 37.09 (SD = 6.437), while females had 36.74 (SD = 36.74), both being at the moderate level. For perceived competence, males had mean score of 50.44 (SD = 5.712), while females had 51.96 (SD = 5.782), indicating that averagely both males and females had positive perceived competence.
Table 4.43

*Descriptive Statistics for Achievement Goal Orientation, Perceived Competence by Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>AG O</th>
<th>PC</th>
<th>Valid N (listwise)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>n</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td></td>
<td>362</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>362</td>
<td>37</td>
<td>67</td>
</tr>
<tr>
<td>Female</td>
<td>n</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td></td>
<td>267</td>
<td>12</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>267</td>
<td>30</td>
<td>67</td>
</tr>
</tbody>
</table>

Note. AGO = Achievement Goal Orientation; PC = Perceived Competence; Min = Minimum; Max = Maximum; M = Mean; SD = Standard Deviation; Sk = Skeweness; Kur = Kurtosis

Gender differences on the relationship between achievement goal orientation and perceived competence and academic achievement is shown in Table 4.44. There was statistically significant positive relationship between academic achievement and achievement goal orientation for both males and females, r (362) = .314, p < .01 and r (266) = .305, p < .01. There was also statistically significant negative relationship between academic achievement and perceived competence for both males and female respondents, r (362) = -.181, p < .01 and r (266) = -.15, p < .05.
Table 4.44

*Relationship Between Study Variables and Participants’ Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Academic</th>
<th>AGO</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Academic</td>
<td>Pearson Correlation</td>
<td>.314**</td>
</tr>
<tr>
<td></td>
<td>Achievemnt</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>362</td>
</tr>
<tr>
<td>Females</td>
<td>Academic</td>
<td>Pearson Correlation</td>
<td>.305**</td>
</tr>
<tr>
<td></td>
<td>Achievemnt</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>266</td>
</tr>
</tbody>
</table>

*Note. AGO = Achievement Goal Orientation; PC = Perceived Competence  
**. Correlation is significant at the 0.01 level (2-tailed).  
*. Correlation is significant at the 0.05 level (2-tailed).*

The results show that more male students reported higher achievement goal orientation and perceived competence than females. The findings clearly indicate that among male and female achievement goal orientation was important factor in academic setting.
As shown in Table 4.45, there was statistically significant positive relationship between academic achievement and achievement goal orientation for students aged 16, 17 and 19 years, $r (184) = 0.438$, $p<.01$, $r (298) = 0.306$, $p<.01$ and $r (18) = 0.471$, $p < .05$ respectively. There was also statistically significant negative relationship between academic achievement and perceived competence for respondents aged 16 and 17 years, $r (184) = -0.153$, $p<.05$ and $r (298) = -0.211$, $p<.01$.
The results indicate that age and the study variable were correlated. The older the participants, the more goal oriented they were. As age increases students become stronger psychologically enabling them to handle academic challenges.

### 4.8.2 Differences between Achievement Goal Orientation and Perceived Competence by Gender

Independent samples’ T-test findings on gender differences in achievement goal orientation are presented in Tables 4.46 and 4.47.

Table 4.46

*Descriptive Statistics for Gender Differences in Achievement Goal Orientation*

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>362</td>
<td>37.09</td>
<td>6.437</td>
<td>.338</td>
</tr>
<tr>
<td>Female</td>
<td>267</td>
<td>36.74</td>
<td>7.090</td>
<td>.434</td>
</tr>
</tbody>
</table>

*Note. AGO = Achievement Goal Orientation*

As shown in Table 4.46, there were 362 male and 267 female participants. Male achievement goal orientation score ($M = 37.09$, $SD = 6.437$) was higher than female achievement goal orientation score ($M = 36.74$, $SD = 7.090$). The findings seem to suggest that males may be more connected with their individual goal and engaging more in adaptive behaviour than female.
Table 4.47

*Independent Samples T-test Results for Gender Differences in Achievement Goal Orientation*

<table>
<thead>
<tr>
<th>Levene's Test</th>
<th>95% CI</th>
<th>F</th>
<th>Sig.</th>
<th>T</th>
<th>df</th>
<th>Sig.</th>
<th>MDS E</th>
<th>LL</th>
<th>UL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.063</td>
<td>.802</td>
<td>.657</td>
<td>627</td>
<td>.512</td>
<td>.356</td>
<td>.542</td>
<td>-.709</td>
<td>1.421</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.647</td>
<td>540.54</td>
<td>.518</td>
<td>.356</td>
<td>.550</td>
<td>-.725</td>
<td>1.437</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* AGO = Achievement Goal Orientation; MD = Mean difference; SE = Standard error of the difference; LL = Lower Limit; UL = Upper Limit

The findings in Table 4.47 show that an independent-samples t-test was run to determine if there were differences in achievement goal orientation between males and females, and if there was homogeneity of variances, as assessed by Levene's test for equality of variances (p = .802). Consequently, the difference in achievement goal orientation between males and females was not statistically significant, $M = 0.54$, 95% CI [-.709, 1.421], $t (627) = 0.657$, $p = .512$.

### 4.8.3 Differences between Perceived Competence by Gender

Independent samples’ T-test findings on gender differences in perceived competence are presented on Tables 4.48 and 4.49:
Table 4.48

*Descriptive Statistics for Gender Differences in Perceived Competence*

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>362</td>
<td>50.44</td>
<td>5.712</td>
<td>.300</td>
</tr>
<tr>
<td>Female</td>
<td>267</td>
<td>51.96</td>
<td>5.782</td>
<td>.354</td>
</tr>
</tbody>
</table>

*Note*. PC = Perceived Competence

As shown in Table 4.48, there were 362 male and 267 female participants. Female perceived competence score ($M = 51.96$, $SD = 5.782$) was higher than male perceived competence score ($M = 50.44$, $SD = 5.712$).

Table 4.49

*Independent Samples T-test Results for Gender Differences in Perceived Competence*

<table>
<thead>
<tr>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>Sig. $t$</td>
</tr>
<tr>
<td>PC</td>
<td>Equal variances assumed</td>
<td>.174</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-3.283</td>
<td>569.381</td>
</tr>
</tbody>
</table>

*Note*. PC: Perceived Competence; MD: Mean Difference; SE: Standard Error; CI: Confidence Interval
The findings in Table 4.49 indicate that an independent-samples’ t-test was run to determine if there were differences in perceived competence between males and females, there was homogeneity of variances, as assessed by Levene's test for equality of variances \( (p = .677) \), there was a statistically significant difference in perceived competence between males and females, \( M = -1.523, 95\% \text{ CI } [-2.433, - .614], t \) (627) = -3.289, \( p = .001 \).

Table 4.50

*Descriptive Statistics by Age*

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>A G O 15 years</td>
<td>36.04</td>
<td>6.342</td>
<td>24</td>
</tr>
<tr>
<td>16 years</td>
<td>37.26</td>
<td>6.954</td>
<td>185</td>
</tr>
<tr>
<td>17 years</td>
<td>37.28</td>
<td>6.628</td>
<td>298</td>
</tr>
<tr>
<td>18 years</td>
<td>35.57</td>
<td>6.687</td>
<td>96</td>
</tr>
<tr>
<td>19 years</td>
<td>36.89</td>
<td>6.850</td>
<td>18</td>
</tr>
<tr>
<td>20 years</td>
<td>37.00</td>
<td>2.828</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>36.95</td>
<td>6.731</td>
<td>623</td>
</tr>
<tr>
<td>PC 15 years</td>
<td>51.96</td>
<td>5.521</td>
<td>24</td>
</tr>
<tr>
<td>16 years</td>
<td>50.62</td>
<td>5.646</td>
<td>185</td>
</tr>
<tr>
<td>17 years</td>
<td>51.05</td>
<td>5.815</td>
<td>298</td>
</tr>
<tr>
<td>18 years</td>
<td>51.38</td>
<td>5.831</td>
<td>96</td>
</tr>
<tr>
<td>19 years</td>
<td>53.72</td>
<td>6.994</td>
<td>18</td>
</tr>
<tr>
<td>20 years</td>
<td>48.50</td>
<td>3.536</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>51.08</td>
<td>5.795</td>
<td>623</td>
</tr>
</tbody>
</table>

From Table 4.50, respondents aged 17 years had a high mean score in achievement goal orientation, \( M = 37.28, SD = 6.628 \), while respondents aged 19 years had a high mean score in perceived competence \( M = 53.72, SD = 6.994 \).
### Table 4.51

**Multivariate Tests by Age**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
<th>F</th>
<th>Hypo df</th>
<th>Error Df</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>.921</td>
<td>3581.258&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>616.000</td>
<td>.000</td>
<td>.921</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
<td>.079</td>
<td>3581.258&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>616.000</td>
<td>.000</td>
<td>.921</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>11.627</td>
<td>3581.258&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>616.000</td>
<td>.000</td>
<td>.921</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>11.627</td>
<td>3581.258&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>616.000</td>
<td>.000</td>
<td>.921</td>
</tr>
<tr>
<td>Age</td>
<td>.018</td>
<td>1.129</td>
<td>10.000</td>
<td>1234.000</td>
<td>.336</td>
<td>.009</td>
</tr>
<tr>
<td>Wilks' Lambda</td>
<td>.982</td>
<td>1.128&lt;sup&gt;b&lt;/sup&gt;</td>
<td>10.000</td>
<td>1232.000</td>
<td>.337</td>
<td>.009</td>
</tr>
<tr>
<td>Hotelling's Trace</td>
<td>.018</td>
<td>1.126</td>
<td>10.000</td>
<td>1230.000</td>
<td>.338</td>
<td>.009</td>
</tr>
<tr>
<td>Roy's Largest Root</td>
<td>.012</td>
<td>1.452&lt;sup&gt;c&lt;/sup&gt;</td>
<td>5.000</td>
<td>617.000</td>
<td>.204</td>
<td>.012</td>
</tr>
</tbody>
</table>

**Note.**  
a. Design: Intercept + Age  
b. Exact statistic  
c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Results in Table 4.51, indicate that there were no significant differences between age and the study variables, $F(10, 1232) = 1.128$, $p=0.337$; Wilks' $\Lambda = .982$; partial $\eta^2 = .009$.

### 4.8.4 Discussion of Results

The results show that there was a significant mean difference between gender on the combined predictor variables. However, one way ANOVA revealed that achievement goal orientation was not statistically different between males and females. This finding contradicts research by Ireri (2015) which accounted for a significant interactive effect between gender and achievement goal orientation.
The results indicated that both achievement goal orientation and perceived competence were stronger predictors of academic achievement for males than for females. It was further found that achievement goal orientation had significant positive relationship on both gender for academic achievement while perceived competence had negative relationship. The results implied that predictor variables projected academic achievement differently among male and female. It is therefore probable that, school and society orient different gender differently.

The results in Table 4.45 revealed a positive relationship between academic achievement and achievement goal orientation. But a negative relationship between academic achievement and perceived competence for ages 16 and 17 was registered. Students’ who had gone through the formal education system in Kenya were projected to be around 16-17 years of age by the time they reached form three (Mutweleli, 2014). Hence, participants who found themselves to be in form three and within the expected age range indicated a statistically significant relationship between achievement goal orientation and perceived competence. However, the highest significant positive relationship was noted at age 19 for achievement goal orientation.

This could be explained by the fact that, as students matured they appear more fostered towards avoidance orientations. This could be because their desire to learn was more to avoid doing badly, improve their abilities, meet career goals
and for success in joining tertiary education. Thus, older students were more likely to internalize external motivation (Ryan and Deci, 2000) to avoid demonstrating incompetence relative to their own goals or those of their peers. Although insignificant, the relationship between the participants aged 15 on perceived competence and academic achievement was positive. These results related to the Dweck (1999) theoretical tenet that self perception became more discriminative with age and perceived competence decreased in the academic domain while social comparison gradually increased (Tubic&Dordic,2015).
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is divided into four sections. The first section summarizes the major findings of the study. The second section deals with the implications of the findings, the third section, present the conclusions of the study. In the fourth section, recommendations for policy and further research are given.

5.2 Summary

The main goal of this study was to investigate extent to which achievement goal orientation and perceived competence predict academic achievement of form three students in Kiambu County. It also explored differences in students’ achievement goal orientation and perceived competence due to type of school attended. In the exploratory part of analysis, the study evaluated gender and age differences in goal orientation, perceived competence and academic achievement. The predictive model for academic success from achievement goal orientation and perceived competence were also investigated.

The first objective of the study was to determine the relationship between achievement goal orientation and academic achievement. A significant and positive relationship was found between achievement goal orientation and academic achievement. The study findings revealed that of the four sub-scales of
achievement goal orientation only performance approach had a significant negative relationship with academic achievements. Mastery approach, mastery avoidance and performance avoidance had a positive and significant relationship with academic achievement.

In line with the second objective, the study investigated the relationship between perceived competence and academic achievement. A negative weak linear relationship was found between perceived competence and academic achievement. Flexible perceived competence had weak negative significant correlations with academic achievement. Academic achievement negatively correlated with entity perceived competence, though not statistically significant.

The third objective of this study sought to identify differences in students’ achievement goal orientation due to type of school attended. The study found out a statistically significant difference between types of schools and achievement goal orientation. Further analysis revealed that among the four types of achievement goal orientation, that is, mastery approach, mastery avoidance, performance approach and performance avoidance, it was only the mastery approach which showed no significant differences based on participants’ type of school. Moreover, post hoc analyses indicated that Boys’ and Girls’ Boarding Schools had higher scores for mastery avoidance, Co-educational Day Schools had higher scores for performance approach while Boys Boarding School had higher scores for performance avoidance. There were no significant differences
shown in the Co-educational Boarding School students across all the levels of achievement goal orientation.

The fourth objective of the study sought to identify differences in students’ perceived competence due to type of school attended. The results revealed no significant difference between entity perceived competence with the school type while flexible perceived competence had a statistically significant difference. However, the difference was in favour of students from Co-educational Day Schools and Boys Boarding School. The mean differences in flexible perceived competence among learners from Girls’ Boarding School and Co-educational Boarding School were not statistically significant.

The fifth objective of the study was to establish the predictive model of academic achievement from achievement goal orientation and perceived competence. Given the two major predictor variables in the study, that is, achievement goal orientation and perceived competence, a significant predictive equation was found. In the last equation, academic achievement was predicted from the four levels of achievement goal orientation and entity perceived competence with performance avoidance emerging as the better predictor of students’ academic achievement.

Qualitative data showed that more boys held mastery approach and entity perceived competence than girls. Qualitative findings also indicated motivational
dispositions reflective of processes and outcomes linked to achievement goals. It also indicated that significant others act as sources of students’ academic goals and perceptions. Findings show that success and effort were related and students’ attribution of failure to low ability. Additionally, failure was accompanied by negative affective and motivational processes. Finally, learning environment complement achievement goals and discussion group/peer learning was the most preferred method of learning.

In the exploratory section of the study, a significant mean difference between gender, achievement goal orientation and perceived competence was found. Further analysis revealed that achievement goal orientation had significant positive relationship on both gender for academic achievement while perceived competence had significant negative relationship. However, the differences between the ages on the achievement goal orientation and perceived competence were not statistically significant.

5.3 Conclusions

This study presented empirical evidence on academic achievement among secondary school students. Framed from Elliot and McGregor’s goal orientation theory and Dweck’s intelligence theory, the study takes a step towards an understanding of correlates of academic achievement among secondary school students in Kenya.
The first objective of the study was to establish the relationship between achievement goal orientation and academic achievement. The results in Table 4.11 confirmed the hypothesized relationship between achievement goal orientation and academic achievement. When the four sub-scales of achievement goal orientation were analyzed, it was found that performance avoidance had the highest predictive value while mastery avoidance had the least predictive value on academic achievement. Given the four sub-scales of achievement goal orientation, it was found out that achievement goal orientation could account for variances in students’ academic achievement. While performance approach is maladaptive in achievement setting, mastery approach, mastery avoidance and performance avoidance were adaptive. From the qualitative analysis, it is important to note that students with avoidance orientation preferred group learning. This seems to explain why performance avoidance had the best predictive value.

The second objective of the study was to find out the relationship between students’ perceived competence and academic achievement. The results in Table 4.14 indicated that both flexible and entity perceived competence had a negative aspect in predicting academic achievement. This may seems to indicate that perceived competence cannot be treated as separate entity but as a mutually
dependent factor. Therefore, to improve achievement performance, educators should enhance secondary students’ sense of competence when offering psycho-educational help along other personal factors.

The third and fifth objectives of the study sought to find out differences in students’ achievement goal orientation and perceived competence due to type of school attended. The study results in Tables 4.19 and 4.29 showed that type of school is one of the factors that could account for differences in students’ achievement goal orientation, perceived competence and academic achievement. This point’s to the role of specific school environments in the development of students’ achievement goals, perceptions and prediction of academic achievement. Furthermore, the differences’ were more in Co-educational Day Schools, which seem to indicate inequalities in school structures and strategies. This could explain the rather poor performances among Co-educational Day Schools. In addition, there could be some factors within one school that could be promoting development of personal factors, while some factors in other schools could be hindering development of the same.

The fifth objective of the study was to establish the predictive model of academic achievement from students’ achievement goal orientation and perceived competence. The results presented in Table 4.39 gives, evidence of the predictive weight of achievement goal orientation and perceived competence in predicting
academic achievement. It could, therefore, be argued that achievement goal orientation, together with perceived competence, have an influence on academic achievement. However, performance approach had a negative aspect in the learning model.

This seems to suggest the detriment of normative evaluation, although interpersonal norms act as forms of performance feedback in Kenya’s education system. Moreover, the two types of perceived competence yielded negatively to the model since they seem to utilize scholastic self theory items. It could, therefore, be proposed that adolescents’ perceived competence should have multidimensional approach by including other domains such as social, athletics, physical, behavioural conduct, close quality friendships, global self-worth as suggested by Harter, (2012). Findings seem to suggest that there could be some factors within the learner that may be interfering with development of achievement goal orientation and perceived competence. This may be impacting negatively on the academic achievement.

5.4 Recommendations

Based on this study’s findings, the following recommendations for policy and further research were made:
5.4.1 Policy Recommendations

i. The first objective of the study was to determine the relationship between students’ achievement goal orientation and academic achievement. The study findings revealed that there was a positive significant relationship between the two variables. It is therefore, recommended that secondary school curriculum facilitate the development of personal psychological factors such as achievement goal orientation in learners’ to enhance students’ academic achievement.

ii. The second objective of the study was to find out the relationship between students’ perceived competence and academic achievement. Students’ perceived competence were found to be negatively and significantly related to academic achievement. The Kenya Institute of Curriculum Development, under the Ministry of Education, should strive to develop alternative methods of evaluation. This is because the domains upon which individuals base their competencies are diverse and not solely on academic achievement.

iii. The third objective of the study was to find out if there were differences in students’ achievement goal orientation due to type of school attended. Performance approach had negative relationship with academic achievement but showed higher scores among students from Co-educational Day Schools. Psychological experts could help weak students to undergo cognitive restructuring. This would assist them to acquire the
capacity to use more of intrapersonal standards than normative standards in performance assessment. In addition, if criterion referenced assessment practices were used there could be less overlap between the impacts of performance cues on the development of students’ competence perceptions.

iv. The fourth objective of the study was to find out if there were differences in students’ perceived competence due to type of school attended. The differences in students’ perceived competence due to type of school attended were found. The differences were more in favour of learners from co-educational day schools and Boy’s boarding school. The ministry of education should address differences between and within type of school and eradicate the inequalities.

v. The last objective of the study was to establish the prediction model of academic achievement from students’ achievement goal orientation and perceived competence. The study found out that performance avoidance has the highest predictive value on academic achievement relative to other achievement goal orientation domains and perceived competence. From the qualitative findings, performance avoidance preferred collaborative learning. Thus, parents and teachers should encourage group-based assessment tasks, peer teaching and group discussions. Such practices could foster learning environments where students’ achievements are valued and encouraged. Parents should be involved in encouraging their
children to set realistic goals which enhance their individual abilities, enjoyment and which increase mastery goals for learning.

5.4.2 Recommendations for Further Research

i. The student sample in this study comprised of only form three students’ from Kiambu County. To enhance the understanding of academic achievement in Kenyan education system, future studies may be conducted with samples drawn from other counties in Kenya across primary schools, colleges and universities. This will present a better picture in Kenyan students’ achievement goal orientation and perceived competence.

ii. Future studies could consider experimental methods to study academic achievement. In addition, researchers could also adopt longitudinal designs in order to track developmental changes in achievement goals and perceived competence over time among a cohort of students. Both approaches would help to address the issue of causality among variables.
REFERENCES


Gatundu South Sub-County Education Office. (2016). *Secondary school enrolment data 2016, Gatundu South Sub County.* Author.


APPENDICES

APPENDIXA: Informed Consent Form

Dear Participants,

I am a student undertaking a Doctor of Philosophy Degree in Educational Psychology at Kenyatta University. I am conducting a research on Selected Predictors of Academic Achievement among Form Three students in secondary schools. I kindly request your to respond to the questionnaire items as honestly as possible. The responses you give will be treated with ultimate confidentiality. Your genuine responses will go a long way to increase knowledge on improvement of academic outcomes.

Please if you agree to participate, sign at the end of this letter.

Thank you

Maria Ng’ang’a

Department of Educational Psychology,
School of Education,
Kenyatta University.

I agree to participate. Signature …………………………………………………
APPENDIX B: Students’ Questionnaire

Introduction

This study is a research on predictors of Academic Achievement among Form Three students in secondary schools. Your responses shall be treated with confidentiality for the purposes of research. Your responses will go a long way to increase knowledge on improvement of academic outcome.

Your co-operation is highly appreciated.

SECTION A: Demographic Information

a) Code number______________

b) Please tick (✔️) your gender    Male    Female

c) How old are you? ___________ Years

d) Type of school: Boys Boarding    Girls Boarding
Co-educational    Boarding    Co-educational Day

e) What is your residential status?
   A boarder    A day scholar
Please read the following statements and place a tick (√) against the answer that suits you most. There are no right or wrong answers but just opinions.

**SECTION B: Achievement goal orientation**

<table>
<thead>
<tr>
<th>Mastery Approach</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<tbody>
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<td>1) My aim is to completely master the material taught in Form Three.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2) I am trying to understand the form three content as thoroughly as possible.</td>
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</tr>
<tr>
<td>3) My goal is to learn as much as possible in form three.</td>
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<table>
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<th>Unsure</th>
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<tbody>
<tr>
<td>4) My goal is to avoid learning less than I possibly could in form three.</td>
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<td></td>
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</tr>
<tr>
<td>5) I am striving to avoid an incomplete understanding of the form three content.</td>
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<tr>
<td>6) My aim is to avoid learning less than it is possible to learn in form three.</td>
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<td></td>
<td></td>
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<tbody>
<tr>
<td>7) My aim is to perform well than other students in form three.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8) I am striving to do well compared to others in exams.</td>
<td></td>
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<tr>
<td>9) My goal is to get better grades than my classmates.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Performance Avoidance</td>
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<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
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</tr>
<tr>
<td>10) My aim is to avoid doing worse than other students in my class.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11) I am working hard to avoid performing poorer than other students in the class.</td>
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<tr>
<td>12) My goal is to avoid getting a poor position compared to others in form three.</td>
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**SECTIONS C**

<table>
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<th>Entity Perceived Competence</th>
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<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>1) I will always have the same grades, no matter how hard I try.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) My grades is something I cannot change very much.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3) Even when I am taught new things, my grades remains the same.</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>4) I am not sure and wonder if my ability is as good as other students in class.</td>
<td></td>
<td></td>
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<tr>
<td>5) I am pretty slow in finishing my school work.</td>
<td></td>
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<tr>
<td>6) Sometimes I worry about how I can do very well at class work.</td>
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<tr>
<td>7) Sometimes I have problem getting correct answers in exams.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) I sometimes feel like I do not have enough intelligent to handle some school work.</td>
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<td>Unsure</td>
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<td>-------------------------------</td>
<td>-------------------</td>
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<td>--------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>9) If I work hard I could get better grades in form three.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) As a student my intelligence increases by learning more</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) As I learn new things my grades gets better.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12) I feel like I am just as good as other students in my form three.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13) I can do my school work very quickly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14) I do very well at class work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15) I almost always can get correct answers in exams.</td>
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<tr>
<td>16) I feel that I am pretty intelligent.</td>
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<td></td>
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</table>

Thank you for your co-operation.
APPENDIX C: Pro Forma Summary of Students’ Examination Results

Participant’s code number…………………………

Gender  Male  Female

Type of school: Boys Boarding  Girls Boarding

Co-educational Boarding  Co-educational Day

Student’s Academic Achievement in Form Three Examinations

<table>
<thead>
<tr>
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<tr>
<td>End of Term One 2017</td>
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</table>
Appendix D: Interview Schedule

Part I: Interview Consent Form

I agree to participate in an interview conducted by Madam Maria Ng’ang’a. I understand the research purpose is towards completion of her PhD in Education. My participation is voluntary and there are no financial or other benefits. I may withdraw my participation without any implications in my academic outcome. I also understand and consent that audio taping, notes taking and dialogue will be done. A pseudonym will be used and the researcher will not identify me by real name when reporting extracts from the interview. I understand that the information obtained from the interview will be kept secure and accessible to Madam Maria Ng’ang’a only.

Name …………………………..Signature ……………..Date……/…./2017

Code Number……………………

Gender       Male    Female

Type of school: Boys Boarding    Girls Boarding
          Co-educational Boarding Co-educational Day
Part 11: Semi - Structured Interview Schedule

1. Except the compulsory subjects, what subjects did you select in Form Three?
2. Why did you select those subjects?
3. Are you performing to your satisfaction in your exams in the selected subjects?
4. Were you guided before your subject selection…Yes/ No. If yes, by who?
5. What are your feelings of yourself as a student in relation to your academic performance?
6. Do you ever do poorly than you expected in your exams in Form Three?
7. When it happens what could be the reasons? (Ability, effort, external factors)
8. When you do poorly in tests or exams, what do you do? Why?
9. When you encounter challenging content in your studies, what do you do?
10. What career(s) do you intend to get into after completing your education?

Achievement Goal Orientation

1. Recall a moment at school when your performance was below anticipations or got marks you were unhappy with.
   A. What did you feel about yourself as a student?
   B. Is the memory still active to you as a student? Why?
   C. How does the memory make you feel about yourself in school?
2. Which of the following statement best describes you in all academic activities in school?

A. I am very keen and I like new content in form three class. Many of the school subjects are interesting. Getting a good grade makes me feel good but mastering content is more important.

B. I feel better when I get better grades then my classmates, in order to show my abilities. As long as I get good grades I think understanding the content is not very important.

C. I feel the new material in Form Three is not very interesting.

Sometimes when I encounter difficult questions in exams or assignment I avoid them, leave gaps or avoid to attempt.

D. I think it is important to avoid looking stupid. Therefore, I worry, avoid answering questions in class and I worry when I make mistakes.

I do not want my classmates to think of me that I don’t understand the content taught.

Perceived Competence

1. Remember your performance or marks you received in Form Three exams. What type of student are you most like:

A. Do well at class work? Yes / No

B. Do not do very well at classwork? Yes/ No

2. Which of the following statement best describes how you view yourself while in form three?
A. I am doing well at school work, even when a subject is challenging
   I am able to get out the answers, finish my school work quickly
   and I feel confident that I have enough intelligent to handle
   difficult subjects.

B. Sometimes I worry about how I can do well in my schoolwork,
   even when I am taught new things and topics my grades remains
   the same in exams. I have problem getting correct answers in
   difficult subjects and feel like I do not have enough intelligent to
   handle some challenging subjects.

   Thank you for your co-operation.
## APPENDIX E: Kiambu County KCSE Analysis

<table>
<thead>
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<th>Grade</th>
<th>A</th>
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<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
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<th>D-</th>
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<tr>
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<table>
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<th>B</th>
<th>B-</th>
<th>C+</th>
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Source: Kiambu County Director Education Office
APPENDIX F: Gatundu Sub-County KCSE Analysis

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Source: Gatundu Sub –County Education office
APPENDIX G: Research Permit

THIS IS TO CERTIFY THAT:
MS. MARIA WACERA NGANGA
of KENYATTA UNIVERSITY, 310-1030
Gatundu, has been permitted to conduct
research in Kiambu County

on the topic: SELECTED PREDICTORS OF
ACADEMIC ACHIEVEMENT AMONG FORM
THREE STUDENTS IN KIAMBU
COUNTY, KENYA

for the period ending:
27th March, 2018

Applicant's Signature

Permit No: NACOSTI/P/17/52297/16291
Date Of Issue: 28th March, 2017
Fee Received: Ksh 2000

CONDITIONS
1. You must report to the County Commissioner and
the County Education Officer of the area before
embarking on your research. Failure to do that
may lead to the cancellation of your permit.
2. Government Officer will not be interviewed
without prior appointment.
3. No questionnaire will be used unless it has been
approved.
4. Excavation, filming and collection of biological
specimens are subject to further permission from
the relevant Government Ministries.
5. You are required to submit at least two(2) hard
copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to
modify the conditions of this permit including
its cancellation without notice.

Director General
National Commission for Science,
Technology & Innovation

REPUBLIC OF KENYA

National Commission for Science,
Technology and Innovation
RESEARCH CLEARANCE
PERMIT

Serial No. A 13543
CONDITIONS: see back page
APPENDIX H: Research Authorization

Maria Wacera Nganga
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Selected predictors of academic achievement among form three students in Kiambu County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Kiambu County for the period ending 27th March, 2018.

You are advised to report to the County Commissioner and the County Director of Education, Kiambu County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.
APPENDIX I: Authority to Conduct Research in Kiambu County

MINISTRY OF EDUCATION
State Department of Education

Telephone: Kiambu (office) 020-2044686
FAX NO. 020-2990948
Email: directeducationkiambu@yahoo.com

When replying please quote

KBU/CDE/HR/4/VOL.II/ (241)

Maria Wacera Nganga
Kenyatta University
P.O. Box 43844-00100
NAIROBI

COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P. O. Box 2300
KIAMBU

18th April 2017

RE: RESEARCH AUTHORIZATION


The above named has been authorized to carry out research on “Selected predictors of academic achievement among form three student in Kiambu County” for a period ending 27th March, 2018.

Please accord her the necessary assistance.

SUSAN KIBIRA
For: COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
APPENDIX J: Authority to Conduct Research in Gatundu Sub-County

REPUBLIC OF KENYA  
MINISTRY OF EDUCATION

Telephone Gatundu 74001  
When replying please quote

REF: GTD/EDU/DEO/203  
DATE: 3RD May 2017

Principals of secondary schools  
GATUNDU SOUTH

RE: RESEARCH AUTHORIZATION: MARIA WACHERA NG’NG’A

The above mentioned person is a P.HD candidate at Kenyatta University currently carrying out her research.

She has been authorized by the CDE vide letter KBU/CDE/HR/4/Vol. II(241) hereby attached to carry out her research.

Please accord her all necessary assistance.

Joseph M. Karanja  
SUB-COUNTY DIRECTOR OF EDUCATION  
GATUNDU SUB-COUNTY
APPENDIX K: Map of Kiambu County