

**Self-Concept, Locus of Control and School Motivation in Relation to Academic
Achievement among Secondary School Students in Northern Nigeria**

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Abstract

The academic achievement, of children and young people is an issue that concerns governments in many countries. In Nigeria, students' performance on standardised examinations has been troublingly low, especially among those from the north of the country. Previous studies on students' achievement have focused on inadequate funding, infrastructural decay, parental background factors and pedagogical issues. However, this study considers the psychological aspects of attainment, looking at the relationships between self-concept, locus of control, school motivation, academic achievement and other contextual factors (such as gender) that are likely to have an impact on students' performance in school. The aim is to identify some of the factors contributing to low performance in order to generate empirical evidence to inform policy and practice.

The study adopts a cross sectional research design with a sequential mixed method approach to data collection and analysis. Standardised questionnaires are used to measure key concepts in the first stage. The sample consists of Secondary School Students (SS1) from public schools in Kaduna State, Northern Nigeria. Semi-structured interviews are then used in the second stage to probe the factors influencing students' performance. The results indicate high, moderate, and low levels of relationships between academic achievement and the conceptual variables, and that self-concept and mother's profession are the main predictors of academic achievement.

The study recommends that education practitioners and policy makers develop intervention programmes in order to enhance students' adequate and positive perceptions of their academic abilities. These might include the use of tangible and non-tangible reward systems to reinforce academic and social accomplishments, the development of policies aimed at eradicating poverty so that families can make adequate provision for their children at home and at school. The government needs to improve school infrastructure to facilitate effective teaching and learning, and enhance the students' personality attributes.

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Dedication

I wish to dedicate this work to my mum, Aishatu Layi Ahman-Pategi who stood firmly for my education, having lost my dad at an early age and to all those children who have one way or the other lost their lives in the pursuit of education in north-eastern Nigeria and around the world. It is my hope and prayer that children do not have to suffer to be adequately educated.

Declaration

I wish to declare that this thesis or any part of it, has not been submitted, for the award of a degree in this or other institutions of learning or university.

Signature.....

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Abbreviations

AA	Academic Achievement
ABU	Ahmadu Bello University
ASC	Academic Self-Concept
DFID	Department of International Development
DHS	Demographic and Health Survey
EFA	Education for All
FGN	Federal Government of Nigeria
FME	Federal Ministry of Education
GEP	Girls' Education Programme
GCE	General Certificate in Education
GDP	Gross Domestic Product
GSC	General Self-Concept
HDI	Human Development Index
ISM	Inventory of School Motivation
JAMB	Joint Admission and Matriculation Board
JSS	Junior Secondary School
LGA	Local Government Authority
LGEA	Local Government Education Authority
MDG	Millennium Development Goals
NECO	National Examination Council
NN	Northern Nigeria
NUC	National Universities Commission
NPE	National Policy in Education
NPC	National Population Commission
NABTEB	National Business and Technical Education Board

NCCE	National Commission for Colleges of Education
NBS	National Bureau of Statistics
OA	Over Achiever
PI	Parental Involvement
PISA	Programme of International Students Assessment
REM	Reciprocal Equation Model
SDM	Skills Development Model
SEM	Self Enhancement Model
SPA	Self-Perceived Ability
SUBEB	States Universal Basic Education Boards
SC	Self-Concept
SM	School Motivation
SDQ	Self-Description Questionnaire
SSS	Senior Secondary School
SDT	Self-determination Theory
UBE	Universal Basic Education
UTME	Unified Tertiary Matriculation Examination
UPE	Universal Primary Education
UNESCO	United Nations Educational, Scientific and Cultural Organization
WAEC	West African Examination Council
WENR	World Education News Review

Chapter One

Introduction

1.1 Background of the Study

‘Prior to 1985, Nigerians were among the most literate, intellectually-inclined, respected, well-informed, well-read and well-educated people in the world and this had been so since the mid-1800s. Our education system was once the envy of the British Commonwealth and in terms of academics, Nigerian scholars took first positions wherever they went. However, as from 1985 everything changed in our country including our attitude to life, our economic situation, our sense of values, our perception of ourselves and what we stand for and our educational system. From that time, everything appeared to have gone to the dogs and from that point it was just one period of degradation and degeneration to another up until today. Nothing was more affected by this unfortunate state of affairs than our education system’.

(Fani-Kayode, 2013: 1)

‘Statistics recently released by the UN Human Development Index (HDI) ranks Nigeria 26th out of the 54 African countries and 13th out of the 16 West African countries on education. The HDI rating was based on four critical macroeconomic variables of education, literacy, life expectancy and standard of living. It also ranked Nigeria 156th out of the 187 countries that were surveyed. Again these startling revelations show clearly that the country’s educational sector is in dire need of resuscitation’.

(Oweh, 2013: 2)

As the above comments show, there is widespread concern about the falling standards of education in Nigeria. Many of these concerns were based on the persistently poor academic performance of students on standardised examinations despite numerous government policies that seek to raise standards and improve educational opportunities for all (Okobiah, 2002).

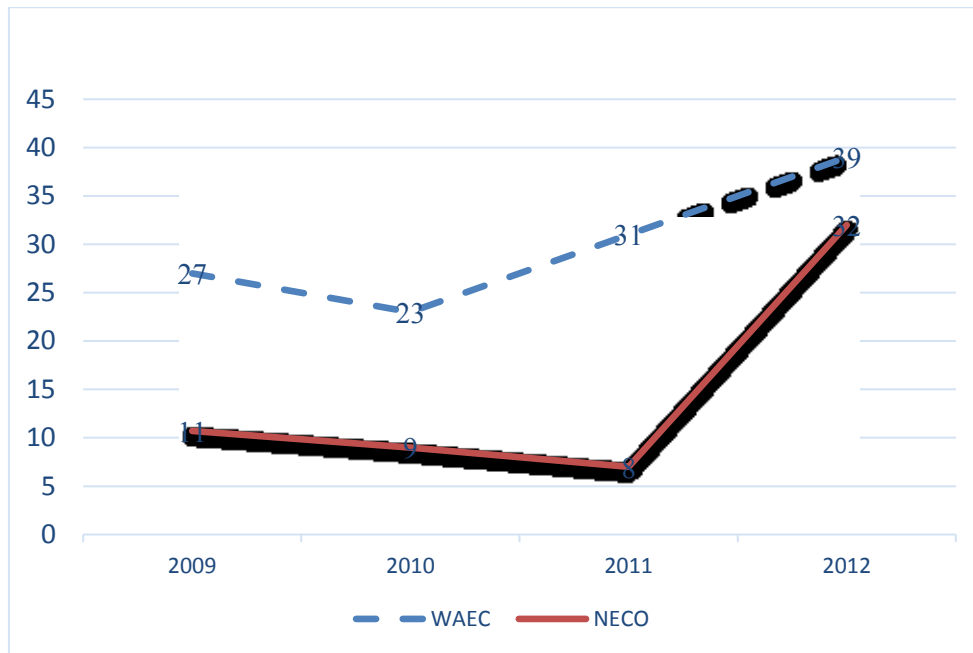
The public's rising demand for better education is heightened by dwindling efficiency, deplorable infrastructure, minimal accountability, and the fear of children not attaining higher education and valuable positive outcomes in the society such as better employment opportunities (Okebukola, 2010).

Although the debate about falling standards is common to many countries (e.g., Pakistan, Ethiopia, the United Kingdom, and the United States), reports by international organisations such as the United Nation's Human Development Index (HDI; UN 2013) place Nigeria at the top of the list of countries with the highest number of children that are out of school (approximately 10.5 million). After Nigeria, Pakistan is identified as having 5 million children out of school, followed by Ethiopia with 1 million children. Based on the HDI's results, Nigeria alone accounts for 47% of the global 'out-of-school' population, which makes the country's situation extremely troubling, as this rate does not include school drop-outs.

Public outcry over the declining state of education in Nigeria is most prominent following the annual release of the Senior School Certificate Examination (SSCE) results (Federal Ministry of Education: FME, 2012). Academic achievement (AA) at the end of secondary school is measured by performance on examinations organised by the two national examination bodies, the West African Examination Council (WAEC) and the National Examination Council (NECO). The criterion-reference score required of students in each subject is C6 (minimum) to A1 (maximum) in at least five subjects, including English and mathematics. Earning the required minimum of five credits with grades between C6 and A1 is significant because it is one of the requirements for admission to the tertiary institutions in the country and is necessary for obtaining good employment.

The annual announcement and analysis of the results by the media generate significant public dissatisfaction, as evidenced by the comments made by Fani-Kayode a former minister of culture and tourism, and also aviation and Oweh presented at the beginning of this chapter. The results released by the WAEC and NECO for the four-year period between 2009 and 2012 reveal the failure trend, as shown in Figure 1.1 below.

Figure 1.1 Percentage of candidates who obtained five credits or more from 2009 to 2012 in SSCE WAEC and NECO examinations

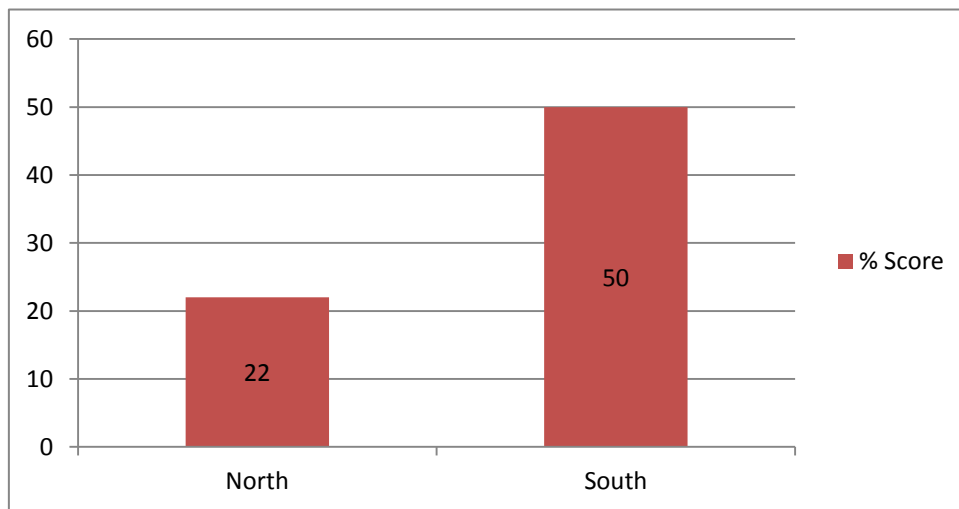


Scale: 0 – 100

(FME, 2012: 18)

Although the 2012 results showed slightly better performance, with 39% of students passing the WAEC and 32 % for NECO examinations, there remains a large disparity between the performance of students from the northern and southern states of Nigeria in these examinations. A closer examination of the 2012 WAEC result for instance, shows that collectively, 50% of students from the southern states had at least five credits compared with 22% from the northern states (Figures 1.2 reveals this disparity).

Figure 1.2 Comparison between candidates from the North and South in 2012 WAEC results

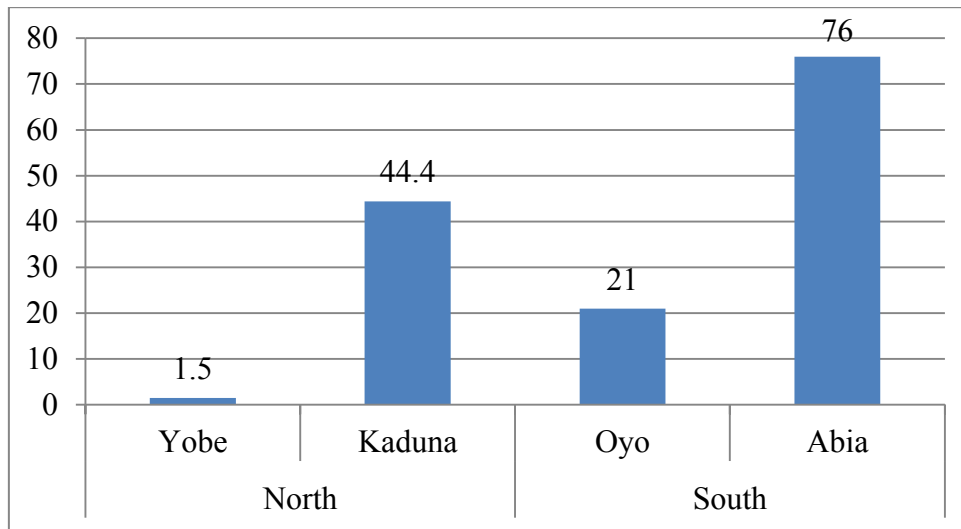


Scale: 0 – 100

(WAEC, 2012)

These percentages (Figure 1.2) show that the improvement recorded in 2012 was from the southern students, while that of northern students remains low, as less than 75% of the northern candidates failed. In 2014, the WAEC result indicates less than 10% of candidates from 10 states out of the 19 northern states had the required credit, while the 5 highest achieving state were the southern states (Azuakola, 2014). Figure 1.3 compares the 2012 WAEC results for the highest and lowest performing states. In the north, Yobe state achieved the lowest rate of 1.5% of students who earned five or more credits, while Kaduna State had 44.4%. In the south, Oyo had 21% and Abia had 76%, the highest overall rate. This shows that the southern students are high achievers when compared to low performance of northern students in standardised examinations.

Figure 1.3 Comparison of lowest and highest attainment based on 2012 WAEC results between northern and southern states in Nigeria



Scale: 0 – 100

(WAEC, 2012)

The context for this present study comes from low AA of senior secondary school students from Northern Nigeria (NN). This has raised serious concerns among stakeholders in the region such as parents, teachers, school administrators, policy makers, and the government (Ndagi, 2013; Maikudi, 2013). Low academic achievement (AA) among students in the north has made them unable to gain access to the higher education that is crucial for development. In 2005, only 19% of candidates from the northern region had access to tertiary institutions compared with 81% from the south (Agboola & Ofoegbola, 2010). The high level of poverty in the northern region may be the genesis of the low educational attainment of the people from the region compared to the southern region of the country. This therefore, requires urgent attention in order to tackle the low AA of children and young people from the northern region.

The failure rate among the northern students in examinations influenced the need for this study. The rationale being that the schools in the two regions run the same curriculum and face similar school condition as it is the government that finance public schools in the country. This suggests that northern students have similar capability like the southern students to achieve higher in examinations. This study thereby focuses on investigating leading factors constituting hindrance to AA of the NN students in secondary school, focusing on the personality and psychological aspects of AA. The reason is to see if

utilisation of the personality factors can assist in improving AA, rather than wait for the government to improve infrastructure and increase funding to schools.

Perceptual psychologists (such as Carl Rogers, Albert Bandura, and Urie Bronfenbrenner) maintain that people's behaviours and activities are contingent on their perceptions, beliefs, and motivations, which are used to form their own realities. Understanding people's behavioural outcomes therefore depends on their interpretation of experiences based on their perceptions, beliefs, and motivations (Obilor, 2012). Bronfenbrenner (2005) in his ecological systems theory of child development prioritises the individual in the development of a person's potential before other factors such as the environment and social factors. Therefore exploring people's perceptions (beliefs and motivations) could provide insights into some of the leading factors that can be used to solve most of problems or difficulties in their life (Rogers, 1951). This is because Rogers (1951) belief that individuals are the preeminent experts of themselves and that their behaviours and outcomes are predicated on how they perceive their situation. In other words, to understand and appreciate students' persistently poor performance, attention needs to be given to their perceptions, beliefs, and motivation in relation to their school engagement and academic outcomes.

Thus, based on the long standing concern over educational progress in the country, this study therefore is interested in how this poor attainment is related to the student' self-concept (SC), locus of control (LOC) and school motivation (SM), particularly in the north of the country where educational attainment is lower. This is to provide the basis for understanding some of the major factors leading to low performance of students from that part of the country. The next section presents some of the reasons for the educational gap between the north and the south of Nigeria.

1.2 Explaining the educational disparity between northern and southern Nigeria

Based on the poor academic performance of students from Northern Nigeria (NN), this section discusses some of the reasons that have contributed to the educational disparity between the northern and southern states. It begins with a brief overview of the late introduction of Western education to the northern part of the country, its association with Christianity as well as the effects of indirect rule and the introduction of the Universal Basic Education (UBE) in the south.

The educational disparity between the regions started with its introduction into the country in the mid-19th century. The Christian missionaries who brought Western education began in the southern region which was their entry point that was also used by the Europeans during the era of the slave trade and the colonisation period (Mkpa, 2000). The Wesleyan Christian missionaries was the first to arrive in 1842 at Badagry (a coastal town) and then the United Church of Scotland at Calabar in 1847. Others included the American Southern Baptist Convention, Quo-Iboe Mission, Basel Mission and the Catholic Missions. As more arrived one after the other, they expanded missionary activities to prominent towns along the coast, all of which were in the southern region, like Abeokuta, Onitsa, Owerri, and Asaba. The colonial administration did not extend to the northern region until the beginning of the 20th century and missionary activities were largely confined to the areas of the country under colonial rule.

Religion was another major factor that delayed the introduction and spread of western education in the north. This was attributed to the missionaries' evangelism agenda which brought the need to educate converts so that they could read the Bible in English and other indigenous languages. It enabled the new converts to be trained as catechists, clergymen and local school masters, to convert and educate more people (Fabunmi, 2005). The missionaries found it easier in the south because the people had varied religious creed and humanitarian aid by the missionaries appealed to the people and lured them to embrace Christianity (Lugard, 1965; Mkpa, 2000). After some time the schools became more organised and the curriculum extended beyond reading, writing, arithmetic and religion to home economics, health science and social studies (Imam, 2012). Some of the graduates from the schools began to gain employment in the colonial administration as clerks (Okobiah, 2002). This led to a shift in the focus of education from the purely religious to the administrative, as a means of earning livelihood. For the colonial government, it was less expensive to employ Nigerians than Europeans for same work.

However in the north it was a different situation when the Europeans conquered in 1903. The northerners were mostly Muslims, governed by a Sultan through Emirs and there existed high number of Islamic schools (Imam, 2012). With the local administration in existence, the colonial government introduced the system of indirect rule in which existing traditional and Islamic educational systems were not tempered with nor were efforts made to improve them. They ruled through the Emirs and had no direct contact with the people, unlike in the south where they mingled freely with the people (Mkpa, 2000). The Emirs and the people saw

western education as an attempt to convert the people in to Christianity and therefore strongly oppose it. The British co-education policy was not appealing to them, since it was a society where gender segregation was the norm. Moreover, the colonial government was not so interested to enforce the introduction of western education since it did not affect their administrative and economic activities (Fabunmi, 2005). They found it less expensive in the running of their administration, especially in the area of tax collection from the people. This attitude in favour of protecting and conserving tradition and religion helped to account for the gap in the level of educational development between the north and the south (Martins, 2005).

Consequently, the missionary activities were relegated to non-Muslim areas in the north in order to maintain peace and security for the British rule (Abdulkadir, 2011). This was the situation until the colonial government saw the need to have indigenous support staff and the growing need for effective communication among the people in the region. At this point they started to encourage the missionaries to implement educational activities throughout the whole country under their supervision (Fabunmi, 2005). Later laws and regulations for the running and supervision of schools were enacted from the 1920s onwards. In the north, the early schools were the pilot schools established in the palaces of Emirs and chiefs for their children in order to ensure that the pupils were not converted to Christianity. At the early stage, only boys were allowed to attend the schools until the 1930s before the first girls' school was established (Maikudi, 2013). The delay was due to people's fear that their girls would not marry early as they would spend more years studying. Eventually, by the time Western education became acceptable to the north, the south had made considerable progress ahead of the north (Okobiah, 2002).

The introduction of free Universal Primary Education (UPE) in the south-western region in 1955 and south-east in 1959 also widened the educational gap between the regions. At this time, it was estimated that 82% of primary schools and 93% of secondary schools in the country were in the south (Ibrahim, 2013). It was only in 1976 that the Federal government extended UPE to the entire country. Schooling then became compulsory for every child in the country. This led to the massive enrolment of pupils in primary and secondary schools in the 1960's and tertiary institutions in the 1970s in the southern region ahead of the northern region (Fabunmi, 2005). The effect was so massive that by 1960, primary school enrolment in the North was 282,849 compared to 2,629,770 in the southern region (Okobiah, 2002). Olibie et al. (2013:11) report that in 1970, the Federal commissioner lamented on the enrolment imbalance between the two regions:

‘For every child in a primary school in the northern states there are 4 in the southern states; for every boy or girl in a secondary school in the North there are 5 in the South; and for every student in a post-secondary institution in the North there are 6 in the South... out of 14,468 students enrolled in all the universities in 1970, students from the South, constituted more than 75.6% of the total population’.

Regarding gender, statistics from the Nigerian Universities Commission (NUC, 2009) revealed that in the 1999/2000 school year, 10.7% of male students from the north were attending universities compared to 48.8% from the south, while 14.8% of females from the north were attending compared to 36.4% from the south. Overall 14.8% of university students at the time came from the north while 85.2% came from the south.

To this day, the educational imbalance between the north and the south has not only continued to exist, but has increased despite the policies put in place by the government (Okobiah, 2002). UNESCO (2013) highlights this level of disparity between the regions indicating that despite poor educational indicators nationally, the northern part is in great need of assistance. This educational disparity that is yet to be bridged is evident in the level of education in the country. The problem now is not the number of schools that exist but the high number of children that are out of school and the high rate of failure in school examination, which needs urgent resolution. The aim of this section is to provide an overview of low educational attainment among northern students from the early times when western education was introduced, which cannot be possible without comparing the educational development of the two regions. The study however focuses on the identification of factors influencing educational attainment of the northern students. The focus is not to compare the performance of students between the two regions. Also see Chapter 2 which provides the general context of the Nigerian Educational system. The ensuing section provides the statement of the problem.

1.3 Statement of the problem

As discussed previously, many factors influenced educational imbalance between the north and the south, and most of them include historical antecedent, religious reasons, and political

factors. Out of all of the factors discussed, the persistently low AA among students in the north makes the gap difficult to close. This section contains the statement of the problem in order to comprehend fully the disparity and thus to explore some of the potential areas of focus that have led to this study, which explores the relationships between the concepts (SC, LOC, SM) and the academic achievement (AA) of the students in Northern Nigeria (NN).

Many studies (Pinxten et al., 2015; Marsh, et al., 2015; Yeung & McInerney, 2007) have explored these concepts and reported that people with positive SC, internal LOC, and high SM are more effective, confident, resilient and have higher academic success than others. Most of the studies have shown empirically that these concepts are important factors in AA and are mutually interdependent. However, these studies have all been carried out in western countries such as Australia, the United Kingdom, Germany and the United States, which differ culturally from Nigeria. For instance, Wach et al's. (2015) study, explored 'self-perceived abilities and fear of failure' in relation to school achievement among secondary school students in Germany. Also Cassidy (2011) examined LOC and AA of university students in the UK and Long et al.s' (2007) study was on academic motivation of adolescents in America.

Nevertheless, considerable research interest in Nigeria has been generated on topics relating to exploration of these concepts in relation to student performance (Oyekuru & Ibegbun, 2014; Obilor, 2012; Ajai et al., 2012; Tella, 2007). There is agreement among these researchers that these and other variables facilitate desirable educational outcomes. There is, however, a variation in their focus. For example, Ajayi et al. (2012) examined the influence of SC and academic motivation on students' attitudes to mathematics. Their findings revealed that students with positive attitudes towards maths persevere more, had higher SC, and a better score. Likewise, Obilor (2012) explores the interaction between SC and AA, using the English, Maths, and general achievement scores of senior secondary school students in Port Harcourt in southern Nigeria through the administration of a self-descriptive questionnaire (SDQ III).

Although these studies report a significant relationship between each of the concepts that they explored with students' achievement, the studies have methodological inadequacies. For instance, the SDQ III used in Obilor's study was developed by Marsh (1992) to measure self-concept in adults and not adolescents. This is similar to Onyekuru and Ibegbun (2014), who report a weak and even negative relationship among test anxiety, LOC, and student performance using Pearson correlation to analyse the data. More so, regression analysis could also have been used to determine the proportion of variation of AA based on variations on test

anxiety and LOC. This should have presented a better insight in to the relationships among the concept by indicating quantification of collective and individual contributions of the concepts, in addition to predicting the sample's future AA. In the case of Ogunmakin and Akomolafe (2013) study, who used multiple regression analysis, found that academic self-efficacy and LOC jointly predicted the AA of students with 36% variance, which is low. This means that there are more factors responsible for the students' performances which were not captured in the study. Nevertheless, Obilor (2013) recommended replicating these studies in other parts of the country to help resolve prevalent educational problems.

However, as laudable as the studies on SC, LOC and SM are in Nigeria, they are limited to the southern parts of the country, where there is higher educational attainment. There have so far been few studies carried out in the northern region with regard to the psychological determinants of AA, which form the basis of this current study, in identifying factors constituting to low AA among the students. One of the main pieces of research undertaken in this area was Masqud's (1983) study, which investigated LOC as a predictor of AA for final year students in Kano. In the study, Brookover's SC scale is used to measure self-esteem, which brings items validity into question. His argument of validity of the instrument was more on the translation of the items from English to Hausa language, than on the content of what was measured. Another study by Balarebe (1989) is a comparative study among Nigerian, British, and Hungarian students' motivation and educational achievement. However, most of these studies examined SC, LOC and SM separately, and none of the studies could satisfactorily explain persistent variations in AA among the northern students.

Therefore, this study combines these three concepts through a mixed method approach to data collection and analysis, to generate substantial empirical evidence which could explain variations in AA among students from the north. The interactions between SC, LOC, SM, and AA are yet to be explored in a single study in Nigeria. Also all of the previous studies utilised only a quantitative approach to data collection and as the method of data analysis, not qualitative or mixed methods, which this study employs. Notably, differences in AA between the north and south mean that the contributions of these three factors may not be the same in each case, because the south has witnessed better AA over the years.

Consequently, this study sets out to examine the relationships between each of these factors with AA among first year secondary school students (SS1) in Kaduna state in the northern part of Nigeria. In addition, the study explores other social and demographic factors that have been

found in previous studies to provide fundamental insight into students' educational attainments. The aim is to assess the influence of these factors on students in NN in order to generate empirical evidence necessary to inform policy and practice that can be used to raise academic standards in Nigeria. To achieve this, the following research questions are posed to guide the study.

1.4 Research questions

1. What is the relationship between self-concept and academic achievement among secondary school students?
2. What is the relationship between locus of control and academic achievement among secondary school students?
3. What is the relationship between school motivation and academic achievement among secondary school students?
4. Which of the conceptual variables (SC, LOC & SM) has the strongest impact on students' academic achievement?
5. What are the influences of background factors (gender, ethnicity, and socioeconomic status) on the academic achievement of students?

1.5 Conceptual framework

In order to answer the research questions, a conceptual framework is developed to guide the direction of the study that will lead to an understanding of the relationships between the identified variables. The conceptual variables used in this study (SC, LOC & SM) comprise the independent variables, also known as the explanatory variables, while AA is the dependent or the outcome variable. This means that the independent variables provide explanations used for the changes in dependent variable. In the case of this study, the changes in the three independent variables and the background factors are be used to provide explanations for variations in the students' AA.

Self-concept (SC) refers to an individual's perception and evaluation of themselves, usually formed through experiences and interactions with the environment and other people (Shavelson, et al., 1976). It is comprised of various aspects of an individual's life, including social, physical, academic, and emotional areas. As a multidimensional construct, Shavelson et al. (1976) broadly categorise it into academic and non-academic facets of the general self-concept at the apex of the hierarchy. This study draws heavily on Marsh's (1985) theoretical perspectives of academic model of SC, specifically the maths and English SC. Marsh (1996) suggests that specific aspects of academic SC correlate more highly with its corresponding AA, and therefore studies in academic SC should focus on performance in academic area. Areepattamannil and Freeman (2008) in their study among Canadian students in secondary schools, maintain that academic SC and other affective factors have the potential to directly influence each new learning situation by the regular classroom teacher. As a result, they should be enhanced because they constitute significant influence in AA (Coetzee, 2011). Hence, this study considers maths and English SC in relation to achievement in these subjects. These subjects are the focus because they are compulsory subjects in all schools across Nigeria. Thus, the study considers the students' perception and evaluation of their performance in these subjects. Their perceptions are then correlated with their scores in the subjects, which represent their academic achievement used in this study.

The second concept is locus of control (LOC), which refers to whether people attribute their successes and failures to internal or external factors as well as the extent to which people perceive themselves to be in control of the activities or events that influence their lives (William et al., 2013). The expression was coined by Rotter (1966) an American educational psychologist, as a way of explaining social learning theory as an approach to behavioural change through reinforcement. Rotter considered it as an individual's tendency to view outcome as contingent upon their own efforts (skills, abilities) or on factors outside their control. He posited that an individual's likelihood of success depends on the extent to which they see themselves as in control over or able to influence events around them. People with internal LOC internalise the outcomes of their actions when they fail or succeed at something, as they see it as predicated on their own efforts. They have the tendency to change strategies and persist amidst difficulty until they succeed. On the other hand, people with external LOC tend to blame their outcomes on factors such as luck, fate, chance, and other people. The fact that they believe that they lack control over events in their lives means that they may not want to try other strategies or persist with the activity and consequently, they may quit trying.

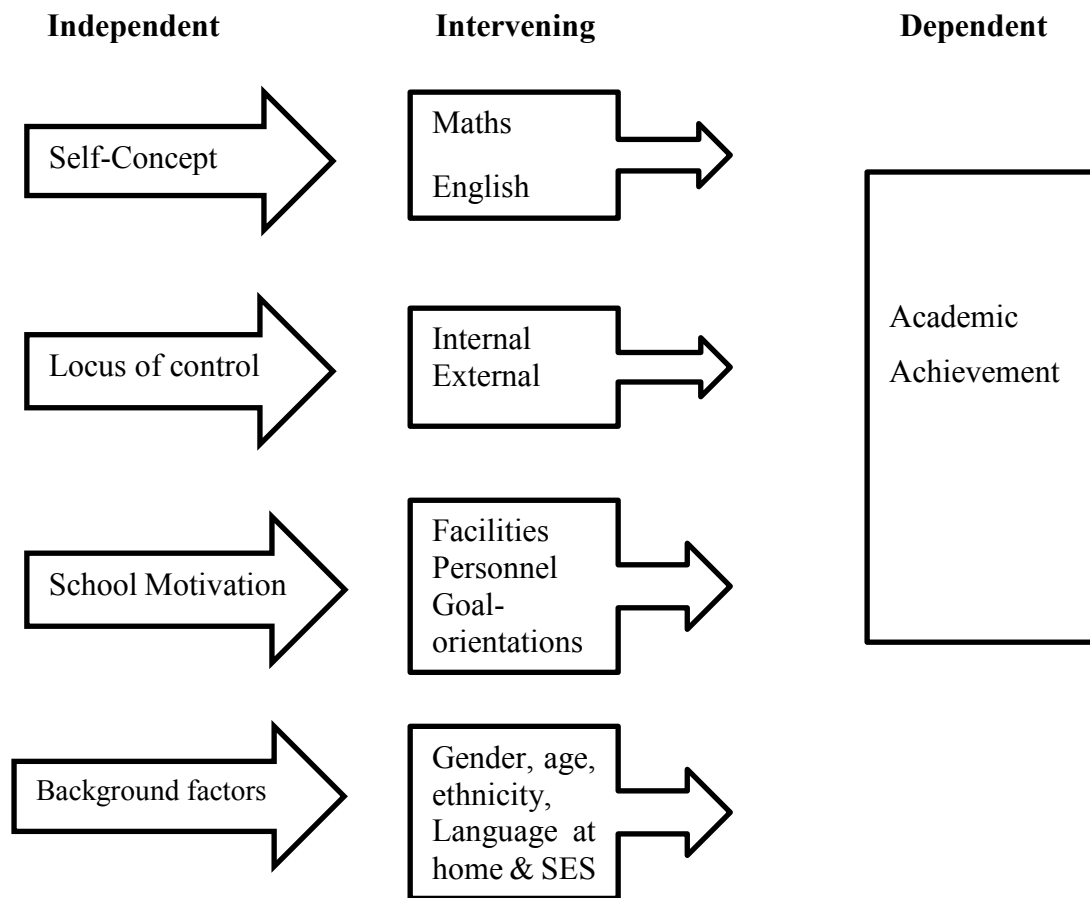
Weiner's (1988) attribution theory about LOC explains that certain groups are more internal than external. Internality is more common among adults than children, among people in Western societies than collectivist societies, and in leaders rather than followers (Gleitman et al. 2011). This study focuses on the students' perceptions of their LOC, whether internal or external in relation to their AA.

The third major concept explored in this study is school motivation (SM), which is the interest that students have in participating and engaging in school (Tella, 2012). This constitutes aspects of the school that drive the students to engage in intellectual challenges to achieve more without external force or expectations (Wentzel & Wigfield, 1998). Since various aspects of the school and schooling combine together to form SM, the study singles out the school environment and facilities, the interpersonal relationships of the students with their peers and teachers, and their goal orientations. This study therefore explores how these areas contribute to high or low school motivation among the students in relation to their academic attainments.

The fourth area is the students' background factors. These include their age, gender, ethnicity, language at home and parents' SES. These are important because they are the factors that show main characteristics of the study's sample which should present a preview of the general population of students in northern Nigeria. Exploration of these factors are to confirm some of the established views of the students' characteristics in relation to their AA in school. It may help to identify some of the aspects that are enablers or barriers to performance. Irrespective of the type of study carried out, background factors are widely considered in survey to provide information on the sample.

Figure 1.4 below depicts the conceptual framework for this study showing the concepts and aspects of the concepts that are explored. The data are collected on these concepts in two phase sequence through the survey and subsequently through the interview with some of the students that participated in the survey. Survey will help to operationalise the concepts in characterising the students, followed by association of the concepts with AA to determine their impacts on the students' AA. The interview will help to highlight and clarify some of the key findings of the survey. This is to have a broader perspective on the factors constituting hindrance to the AA of secondary school students in Northern Nigeria (NN).

Figure 1.4 Conceptual framework illustrating the variables



Source: Author's own construction

1.6 Scope/Delimitation

The scope of this study is based on the relationships between the conceptual factors (SC, LOC, and SM) and the background factors (age, gender, ethnicity, SES), and AA among SS1 students in NN. As stated in the introduction, NN is chosen because of the low AA record of students in standardised examinations in this region. The investigation is limited to Kaduna State, which is one of the areas in the north with low AA. This area is chosen because it is representative of the northern region demographically, it is the most central state in the north, and for pragmatic reasons related to cost and security (see Figure 1.5). A sequential mixed method approach is used for data collection and analysis. This involves the administration of questionnaires and a preliminary analysis before carrying out interviews with selected students. In the first phase, the participants consist of 1,227 randomly selected SS students in their first year from 15 public schools in the three educational zones of the

state. The selected schools included rural, urban, single gender and mixed gender schools with low and high educational achievement overall. The second phase involved interviewing 20 students who were identified as either overachievers (9) or underachievers (11) based on their extreme residual values in the AA model. The interview sought to ascertain the major factors that underpin their AA in school. The findings are limited to NN.

Figure 1.5 Map of Nigeria showing the Research site



Source: Developed for this study by Mosa Al-Riyimi (2016), Department of Geography University of Leicester. This map is not an authority on administration and international boundaries.

1.7 Significance of the Study

The main aim of this study is to identify some of the most significant factors hindering the students' AA and to generate empirical findings that can be used to enhance the academic performance of secondary school students in Northern NN. As stated in the introduction, the issue of poor performance is of concern to parents, teachers, the government, and various organisations in Nigeria, particularly in the northern region of the country. As such, the study focuses on establishing the relationships between self-concept, locus of control, school motivation, and academic achievement in order to identify some of the problem areas. The study explores discussions, suggestions, and recommendations from the literature regarding

the effect of each of these concepts on students' academic performance. These effects are detailed using theories and practices related to the concepts. It is hoped that the findings will offer significant insight into the various groups of students on each of these concepts to facilitate a comparison of those with enhanced performance and those with low levels of AA.

The study is expected to be of benefit to teachers who are directly involved with the students and who are responsible for developing effective practices for teaching and learning in order to improve AA. It should furnish them with an adequate understanding and appreciation of these concepts, which vary amongst students based on their personalities. This could help teachers determine appropriate tasks for the particular groups of students based on the concepts and in their interactions both inside and outside of the classroom. The school motivation data should be of primary interest to school administrators, as this information could help them ascertain and remedy some of the possible areas that cause low academic performance. Some of these may include infrastructural development, which would improve the quality of life in the schools, and the provision of effective learning environments vital for high achievement.

The findings should be beneficial to parents as a guide to understanding their children's AA and to providing better support for them at home, especially by promoting the effectiveness of the concepts in pursuit of school progress. These factors have all been associated with the educational, behavioural, and emotional adjustment of students in school (O'Mera & Marsh, 2006). Thus, the results could also be of interest to school counsellors and psychologists, who can use them to diagnose the reasons for students' successes and failures, and develop adequate and appropriate interventions for their students as necessary.

Furthermore, the results of the study will provide government policy makers and practitioners with valid empirical evidence to help resolve low academic performance and issues of social justice in relation to children's right to access quality education across the country. The results will yield information that may be useful in the formulation, regulation, and implementation of policies and practices that would support schools' efforts to improve AA not only in the northern region but in other areas of the country where low performance is prevalent. The findings should indicate the potential areas of focus for urgent attention and those that may require long term planning and development. Others who may also benefit from the findings are scholars who are undertaking research on the variables in this study, as it will provide them with useful information on their effects among students in NN.

1.8 Thesis Structure

The aim of this study is to generate empirical data to inform policy and practice in improving AA amongst secondary school students in NN. Data are collected on 14 variables. The variables are grouped into two, namely the demographic information of the participants and those that measure the conceptual variables of SC, LOC, SM and AA. Other sources of data include the views of the students, obtained through interviews, and the observations that were made of the schools during visits.

The thesis is organised into 11 chapters. The introduction establishes the context and rationale for the study. The background of the study is presented, along with the reasons for the educational disparity between the north and the south of Nigeria, the problem statement, the research questions and the conceptual framework. This is followed by the scope and delimitation of the study, its significance, and the thesis structure. In order to highlight the background of the study, chapter 2 discusses the Nigerian education system. The focus is on the educational policies, structure, management, and administration, measurement of AA at the secondary school level and the major crises in the education sector.

Chapter 3 presents review on some of the demographic factor of students in view of previous studies. The aim of this is to review the literature on some of the important factors explored by earlier studies as important determinants of students' performance in school both in Nigeria and in other parts of the world. The areas of focus are the socioeconomic status (SES), which includes parental education, occupation and level of income. Other areas include gender parity in education and ethnicity as a major factor in AA in Nigeria. Chapter 4 reviews the literature on the conceptual variables used in the study. These include SC, LOC and SM in relation to AA. Chapter 5 presents the methodology that is adopted in order to carry out the study. This chapter starts with the philosophical stance, then describes the study design, the development of the instruments, the pilot study, the sampling strategy, and the method of data collection and analysis.

Chapter 6 is the first empirical chapter and it presents a univariate analysis of the data to provide a description of the respondents and their schools. Each of the schools from which students were sampled is briefly described. This is followed by the distribution of the students' responses to questions on the background factors from the schools and the presentation of the distributions of the conceptual variables. Chapter 7 presents the bivariate analysis of the

relationships between the variables. Furthermore, it indicates the mean differences between the various groups of students and the effect sizes. The first part presents the results pertaining to the relationships between the background factors and AA and the conceptual variables. The second part shows the results concerning the association between AA and the conceptual variables (SC, LOC and SM).

Chapter 8 describes in detail the process of constructing the regression model of students' AA. The model results include the combined contribution of the variables and their individual coefficients. The identification of the achievement groups and the profiles of the groups are presented. Chapter 9 discusses the results of the interview data through three major themes: aspiration, significant others, and the condition of the schools. Chapter 10 is a discussion of the findings based on of the research questions and enumerates their implications for the Nigerian educational system. Finally, chapter 11 comprises the conclusion and recommendations. The study's empirical, theoretical and methodological contributions are highlighted here. Also, this chapter presents the limitations, recommendations for policy and practice, and suggestions for further research. This is followed by the appendixes and references.

Chapter Two

The Nigerian Education System

2.1 Introduction

This chapter presents the Nigerian education system with a view to determining its significance to this study. As discussed in the preceding chapter, that the Federal Ministry of Education plays a dominant role in regulating the education sector. The responsibility is divided among federal, state and local governments. While the federal government is directly involved with tertiary education, the state and local governments are primarily responsible for secondary and primary education respectively. The chapter begins with a review of various relevant educational policies, followed by a description of the 6-3-3-4 structure of the educational system and then the management as well as the measurement of academic achievement (AA) through standardised examinations. The chapter concludes with an examination of the main contemporary concerns about the state of education in the country and the key challenges that face this sector.

2.2 Nigerian educational policy

The geographical area known as Nigeria today was previously a conglomerate of local communities, referred to as protectorates by the British colonial masters. For ease of administration, these were divided into the Northern and Southern Protectorates and it was not until 1914 that they were amalgamated and the name Nigeria was given. During the early period when missionaries introduced Western-style education, the colonial government did not assist or intervene. They saw it as an avenue by which the missionaries propagated Christianity, while they were entrenched in administrative and commercial activities in the colony. This was the trend until the graduates of the mission schools became literate and were perceived as capable of performing certain administrative work such as clerical and office assistance, and the government started to employ them, in offices and as domestic servants (Fabunmi, 2005).

Eventually, the government needed more staff who are educated, to cope with the expansion of their colonial activities. At the same time, the number of Europeans living in the colony had dwindled as most of them succumbed to malaria, which in turn deterred further immigration

to the colony (Mkpa, 2000). This heightened the government's interest in and collaboration with the missionaries on educational activities in the colony. In 1872, it was giving £30 each to three missionary groups and in 1877, this amount increased to £200, which continued annually (Fabunmi, 2005). However, having recognised the importance of education in furthering the goals of colonialism and not being content with people who could only read and write the British administration decided to promulgate laws to upgrade and improve educational standards from purely religious and literacy constrictions.

Consequently, the first educational legislation was enacted by the colonial government in 1882 for all British West African territories, which included Lagos, Ghana, Gambia and Sierra Leone. This was to harmonise the educational curricula of the missions in all the British colonies of West Africa. More money was given to build additional classrooms and salaries were paid to teachers. The aim was to produce a class of labourers, interpreters and youth who could help the farmers to improve the cash crop yields, as these products were needed as raw materials for European industries (Mkpa, 2000). In 1886, Lagos was separated from the Gold Coast (present day Ghana), and following that in 1887, another education ordinance was enacted. The ordinance stipulated the award of a scholarship to pupils as an incentive for them to attend schools and the organisation of standardised examinations, teacher certification and the introduction of the secondary level of education (Mkpa, 2000). This became the first educational ordinance in Nigeria and the basis upon which other policies were developed.

From then until 1960, when the country gained independence, ten educational ordinances were formulated, each making a unique contribution to the country's educational development. For instance, the third educational ordinance in 1916 was enacted after the amalgamation of the two protectorates into one country in 1914. This paved the way for the government to increase funding for schools and to control education while providing regular supervision. Lord Lugard, then the head of the British colonial government, commented that it had become an acute necessity for the Northern Province to supply its own clerical and artisan staff from the resources of its own population (Aliu, 1997). Hence, the scheme of government education was framed around this objective, and as such, the missionaries' activities were relegated to the non-Muslim dominated areas in the region such as Benue, Kogi, Zuru and Wusasa provinces. As a result, most schools in the North were established by the colonial government and only a few by the missionaries. The ordinances led to the introduction of school inspector to ensure that uniform standards were maintained throughout the two regions. The system of indirect rule in the north informed this ordinance. This was a system of administration used by the

British colonial government rule through traditional leaders in the community. This policy of administration was more successful in the north because it recognised the existing traditional political structure and the Islamic system of education. This contributed in the restriction of the spread of Western education and Christianity in the region.

Furthermore, another Education Ordinance was enacted in 1925, informed by the recommendations of the Phelps-Stoke Commission, which was set up to investigate the activities of the schools to see if they were meeting the needs of the people in the colony. This policy was the beginning of the maintenance of a standard of quality education in the country. It contained adherence to the establishment of schools through the Board of Education, emphasised female education, religious and moral instruction, a minimum teacher salary scale and the teaching of local languages in schools (Fabunmi, 2005). The ordinance aimed to ameliorate the challenges caused by the expansion of schools due to the demand for education from the population.

The 1925 ordinance remained in effect till 1948, when Sir Sidney Philipson called for the review of earlier ordinances and grants-in-aid, provided to support the schools. This resulted in the decentralisation of educational administration, which led to the creation of four regional boards: Lagos, the West, the East and the North. Each of these regions had its own House of Assembly, which afforded greater autonomy over public life, including education. For example, in 1955, the Western region introduced Universal Primary Education (UPE); in 1956, it was introduced in the Eastern region and later in the North in 1976. Prior to that in 1952, the 1948 ordinance was amended and also, in the same year, the West African sub-region set up the West African Examination Council (WAEC), to conduct examinations and award certificates to qualified candidates, similar to examination authorities in the United Kingdom.

In 1959, the Sir Eric Ashby Commission was set up to identify the high-level future manpower needs of the country (Aliu, 1997). The Commission's report prescribed education as a tool for national economic expansion and individual social emancipation. It recommended the establishment of four federal universities, (later increased to five), namely, the University of Nigeria, Nsukka (1960), Ahmadu Bello University, Zaria (1962), the University of Ife, Ile-Ife (1962), the University of Lagos, Lagos (1962) and the University of Ibadan, which was first established as University College, Ibadan in 1948. These five universities are referred to as the first generation universities.

With the attainment of independence in 1960, Nigeria sought to change its national policy on education, primarily because the education ordinances reflected the goals of the colonial administrators and not the aspirations of an independent nation. Thus, the government convened a series of National Curriculum Conferences between 1969 and 1973 which sought to address dissatisfaction with the existing educational system. As pre-independence educational policies was perceived to be irrelevant to national needs. Consequently, a National Policy on Education (NPE) was first published in 1977 and reflected the country's educational philosophy and goals in terms of its relevance to the needs of the individual and society while reflecting the realities of modern globalisation (Uwaifo & Uddin, 2009). The policy holds that educational activities are intended for the maximum development and fulfilment of the learner. In order to achieve the goals and objectives of this new policy, the government divided education into three levels: primary, secondary and tertiary in a system known as the 6-5-4. This was superseded by the 6-3-3-4 system in 1982, which is explained in more detail below. However, over the years the policy document has undergone a series of minor reforms, all with the view of improving educational standards in the country.

2.3 Nigeria's 6-3-3-4 system

The 6-3-3-4 designation for the country's education system represents the six years pupils are required to spend in primary school, three years in Junior Secondary School (JSS), followed by another three years in Senior Secondary School and four years of tertiary education. This system existed from 1982 to 2009. This policy that replaced the 6-5-4 system (6 years of primary school, 5 years of secondary school and 4 years of tertiary education) that was implemented immediately after independence. The new system was 'geared towards self-realization, better human relationship, individual and national efficacy, effective citizenship, national consciousness, unity as well as towards social, cultural, economic, political, scientific and technological progress' (NPE, 2004:7). These goals proved however unattainable, as many schools lacked adequate funding for infrastructure and facilities, the lack of which affect the performance of students (Uwaifo & Uddin, 2009). The 6-3-3-4 scheme was designed to inject functionality into the Nigerian educational system, by 'producing graduates who would be able to use their hands, heads and hearts (the 3Hs of education)' (Vanguard, 2012: 5). While it was perceived as a laudable programme that was capable of ushering in an educational revolution in Nigeria, the system was not successful in spurring the technological development

of the nation. Its failure was linked to poor implementation but not lack of qualified staff members or infrastructure (Uwaifo & Uddin, 2009).

Consequently, in 2009 the government replaced the 6-3-3-4 structure with the 9-3-4 system. This comprises 9 years of free and compulsory basic education, including 6 years of primary and 3 years of junior secondary schooling, followed by another 3 years of senior secondary school (SSS), and 4 years of tertiary education. The 9 years of compulsory schooling was aimed at reducing the rate of dropping out after primary school, thereby making the transition to secondary school easier and providing the opportunity for early professional career development (FME, 2005). It was envisaged that if children started school at age 6, the 9 years would provide them with apprenticeships by the time they reached age 15.

Laudably, this policy was incorporated into the United Nations' Millennium Development Goals which were intended to achieve the goal of EFA, Education for All, by the year 2015 (UN.org, 2014). The aim was to separate the students for basic certificates and steer them into different academic programmes after the JSS level. At this point, 60% of the students were to be guided to proceed to SSS education, 20% to technical and vocational colleges, 10% to vocational centres, and the remaining 10% to apprenticeship programmes (NPE, 2004; FME, 2005). Meanwhile, those that had acquired the necessary academic qualifications at the end of senior secondary school would proceed to a further 4 years of tertiary education (Okobiah, 2002). The participants in this study are all among the 60% that went onto SSS. At this level, the students are assigned to one of two subject concentrations, the sciences, or arts-based subjects, depending on their future career paths.

This new system is not without its challenges, as it remains unpopular among the population (Uwaifo & Uddin, 2009). One argument against it is that there is no clarity in the structure, especially when students are to proceed to a different level, as they remain in the same schools rather than being sent to other schools. Also, certificates are not awarded as expected upon completion of the JSS level, and most parents prefer their children to transition directly to prestigious senior secondary schools meant for only 60% of the student population (Chukuma, 2013). The students simply proceed to the senior level in the same school, when some should have progressed to vocational education, as the policy demands (Ibid). Nevertheless, the number of years spent in school is still as envisioned in the 9-3-4 system.

In addition to the complexities associated with the implementation of the 9-3-4 structure, the federal government of Nigeria announced an additional one year of pre-primary education.

Thus replacing the 6-3-3-4 policy with a 1-6-3-3-4 policy, this was to take effect in 2014. This appears to be an additional complication in a system that has been described vague (World Education News Review, WENR 2013). Also, as the pre-primary policy has been operative in private schools since 1977 (NPE, 2004), questions exist as to its practicality in public schools and whether the government is going to build new schools or incorporate new students in to existing nursery schools. All of these points need further clarification because it is not enough to make policy statements without providing substantive provision to support it.

Thus, in an attempt to find solutions to low academic performance in schools and to enhance the quality of education, the Federal Government of Nigeria has engaged in continuous changes in educational policies without due consideration of their implications nor an appropriate implementation strategy. The policies should help to address existing gaps in education rather than develop new ones which rather compound the problems. This context forms the basis of this study. While this area requires further empirical investigation, the primary focus of this study is on the students and the psychological factors that can enhance their performances irrespective of the lack of clarity of government educational policies and their implementation.

2.4 Measuring academic achievement at the secondary school level in Nigeria

In this section, the different government agencies that are responsible for the administration, evaluation and conduct of examinations are discussed. It is argued that with different boards involved in the management of examinations in Nigerian schools, there are problematic overlaps in their duties. It is suggested that rather than constitute diverse boards with unnecessary and overlapping duties, the Nigerian Government should focus on programmes to undertake the reorientation of educational values and to overcome the challenge of corruption in the educational system (Udey, et al. 2009).

There are different boards involved in the management and administration of school examinations at various levels. At the tertiary level, for instance, there is the National Universities Commission (NUC), the National Board for Technical Education (NBTE) and the National Commission for Colleges of Education (NCCE). These organisations are responsible for the supervision and regulation of universities, polytechnic institutions and colleges of education, respectively. Secondary schools are supervised by the State Universal Basic Education Boards (SUBEB), while primary schools are mainly managed by Local

Government Education Authorities (LGEAs). With regard to examinations, the major examination bodies include WAEC and NECO, which conduct examinations for secondary schools, NABTEB for technical colleges, and the NTI for the national certificate in education for primary school teachers (NCE). All of the different bodies are statutorily empowered for quality assurance at a number of parallel designations (Okebukola, 2010).

Furthermore, the boards are responsible for the award of certificates to students who pass examinations successfully. At the end of six years in primary school, pupils who pass the Common Entrance Examination are awarded the First School Leaving Certificate (FSLC), which is needed to transition to Junior Secondary School (JSS). The Basic Examination Certificate Examination (BECE) is awarded at the end of Junior Secondary School, while the Senior Secondary School Certificate (SSCE) is given upon completion of this level. Finally, Bachelor's degrees are awarded to university graduates. Overall, measures of academic achievement comprise a series of continuous assessments and standardized examinations (FME, 2005). The implementation of continuous assessment has been criticised for various reasons, including its lack of uniformity in schools throughout the federation (Afemikhe, 2007).

Specifically, at the secondary level, the West Africa Examination Council (WAEC), the National Examination Council (NECO), the National Technical and Business Certificate Examinations (NABTEB) and National Teachers' Institute (NTI) are the four national examination bodies responsible for administering and scoring the various examinations. WAEC and NECO administer both the junior and the senior secondary school examinations. Some schools participate in both examinations, while others prefer to conduct only one of the two at the SSS level because both certificates are rated equally and they carry the same weight as qualifications to enter higher institutions. Similarly, while NABTEB handles the technical colleges, NTI administers the examination for a teachers' certificate at colleges of education. In all examinations, candidates are expected to earn five credits, which must include English and mathematics along with three other subjects; this constitutes the minimum academic prerequisite for continuation onto further studies (Okebukola, 2010). The five credits are also the outcomes that are used to judge performance in schools.

Consequently, in addition to the above certificates, the Unified Tertiary Matriculation Examination (UTME) is a further requirement for those seeking admission to institutions at the tertiary level, which include Universities, Polytechnic schools and Colleges of Education.

Beginning in 2010, most tertiary institutions started conducting post-UTME entrance examinations in order to solve the problem of multiple admissions, and to ensure quality and the readiness of new entrants to face future academic challenges (Kolawole et al., 2011). This means that students need to sit for at least three exams in order to gain entry into a tertiary institution after the SSS level. Based on this, Chukuma (2013) argues that the proliferation of various examinations that students are subjected to should indicate improved standards, but it rather seems that students are failing to meet the set standards due to their low performance. Nwagwu (2002) argues that since standards are measures of AA, students' results should be curved based on the quality of the education that they have received. Similarly, Afemikhe (2007: 3) suggested that standards should be based on UNESCO's proclamation of 'input, process and outcome factors'. These are procedural suggestions for institutions to ascertain students' AA.

The antecedent of missionary ownership, later transferred to regional governments, led the federal government to take control of the sectors for quality assurance in order to guarantee equal opportunities for educational growth in the country. However, the constitution of many agencies in the FME has not led to the needed improvement in the sector. For instance, there are 21 boards which are grouped into 4 areas according to their functions. The first group comprises those serving as supervisory and regulatory agencies; the second group is responsible for research, development and training. While responsibility for conducting examinations, measurement and evaluation falls to the third group, the fourth group is given the tasks of managing languages assessment, training and development (FME, 2005). In addition to the various agencies of the FME, there is the National Council on Education (NCE), which is composed of the Minister of Education and all state commissioners. The NCE is the highest education policy formation body. It works in conjunction with the Joint Consultative Committee on Education (JCCE) and the legislative committees in the Senate and Houses of Assembly at both the federal and state levels. The JCCE comprises professionals and specialists in different subject areas, such as curriculum development.

The multifarious divisions of management and administrative arms in maintaining quality standards in the educational sector do not translate into quality performance by the students in the schools. Rather, the system is widely viewed as being plagued with problems as large numbers of students continue to fail in standardised examinations. Most of the problems are not necessarily caused by management problems but could be due to other factors, such as

the often unnecessary continuous expansion and overlapping of functions. The next section describes some of the challenges in the educational sector.

2.5 Crises and challenges in the Nigerian education system

Over the years, the Nigerian education system has witnessed a series of transformations and expansions as explained above. In spite of the various initiatives especially during the post-independence era, the sector has faced numerous setbacks, such as dwindling infrastructure. Most the problems are linked to management, facilities and personnel (Adamolekun, 2013). Nwagwu (1997) identified over-crowding, inadequately trained teachers and poor facilities as the biggest problems in the schools. The primary level for instance suffers mainly from high enrolment rates and unqualified teachers, while the secondary level is beset with poor performance and the university level with declining standards (Adamolekun, 2013).

In view of the above, this section examines the capacity deficit relative to enrolment, infrastructural deficiencies, and inadequate funding, as the greatest challenges in the Nigerian education system. This perhaps supports the argument that the efforts by the government to improve the standard of education are usually been misdirected. This suggests that without a complete re-orientation of values and policies focused on the maintenance of school facilities, the standard of education in Nigeria will continue to decline.

Despite the issue overcrowding, most scholars and a few international observers (UNESCO, 2013; DFID, 2012) agree that one of the major areas of crisis is the low enrolment rate in primary schools. As the most populous African nation with an estimated population growth rate of 2.3%, Nigeria has the lowest primary school enrolment rate compared to other African countries, such as Ghana. In 2010, countries like Togo, Angola, Sierra Leone and Zambia achieved a 100% gross school enrolment rate compared to Nigerian's 85% (World Bank, 2013). The corollary to this is that Nigeria has the highest number of children that are out of school in the world.

Expounding on UNESCO's 2013 report, which estimated that 10.5 million Nigerian children were not attending formal schools, Abdulquadir (2013) stated that 7 million of them were 'Almajiri' children from Northern Nigeria. This is arguably one of the key factors contributing to the low rates of enrolment. The term Almajiri designates children (normally from rural areas) who are sent to Islamic boarding schools in city centres to learn Islamic studies under

the tutelage of Islamic scholars. Most of these children are subjected to substandard social conditions such as begging and lack of parental care and protection, a situation most often revealed by their tattered clothing, lack of footwear and poor hygiene. This group of children are susceptible to enticement and vulnerable to recruitment by religious extremists (Majau, 2005). This has not only given rise to the visibility of children begging in the streets, but it has also been linked to the social, cultural and religious problems that are associated with criminal and terrorist activities, which all trace back to extreme poverty.

In addition, Nigeria failed to fulfil the core requirement of the Millennium Development Goals for universal free primary education (EFA) by the year 2015, since technically there is still high number of children not attending school. Similarly, the rapid increase in population and the demand for quality education have caused Nigeria to have one of the highest international mobility rates among African countries, with about forty thousand students travelling abroad each year in search of a higher standard of education (WENR, 2013). In 2010, it was estimated that Nigerian students in the UK spent over two billion naira, while 160 billion was spent by Nigerian students in Ghana, compared to the 121 billion Naira (\$605 million) allocated in the budget to Nigerian universities in 2012 (Adamolekun, 2013). If the education sector were adequate, there would not be the need for such a large number of students to study abroad, and most of that money could have been spent on education in the country.

Paradoxically, some scholars (Agboola & Ofoegbu, 2010; Udey et al. 2009) agree that the introduction of the UPE was the genesis of the educational crises in the country. This is because most public schools had a limited carrying capacity to absorb the large number of entrants in primary schools. Thus, the government's inability to provide a corresponding increase in facilities and the number of schools required to accommodate the students before the implementation of the policy can be blamed for the decrease in quality. Another contributing factor is the common entrance examinations into JSS from primary school, which have become less stringent, as most students are granted automatic admission (FME, 2005). At the tertiary level, the number universities has increased from 51 in 2005 to 128 in 2014 to provide adequate access to qualified candidates but this is still not enough for the growing number of applicants yearly (Agboola & Ofoegbu, 2010). There are also reports of inequalities in access among regions, gender and subject areas (JAMB, 2009; WENR, 2013).

Consequently, the failure of the Nigerian education system to meet the demand for schooling has resulted in over-stretched capacity such as inadequate classrooms, lack of adequate

educational materials and deteriorating school structures (Nwagwu (1997). With regard to school infrastructure, DFID (2012) noted that the buildings are dilapidated and have become unsafe for children. There are instances of damaged walls, roofs, ceilings, obsolete blackboards, insufficient desks, chairs and basic utilities, such as water and toilet facilities. Also, a report from the FME (2005) indicated that 20% of primary schools, especially in rural areas, had no toilet facilities. In such schools, students use open fields for defecation and streams as a source of water, while also lacking electricity, as a result of which they depend on kerosene lanterns for light. In some schools in urban areas, both boys and girls use same toilets. Most of the structures suffer from a lack of maintenance and weather wear (Ijaya, 2012). In some places children receive lessons under trees in an open environment (UNESCO, 2013).

This problem of inadequate infrastructure and planning is worsened by over-crowded classrooms. For instance, a normal classroom, the size of which is 12m by 10m, has an average student population of 75 to 300 (FME, 2013). This is a higher teacher/student ratio than that approved by the FME, which is 1:40 as the maximum allowed in primary and secondary schools. The situation at the tertiary level is worse, as records show that the National Open University and the universities of Abuja and Lagos have an average lecturer/student ratio of 1:363, 1:122 and 1:114, respectively (NUC, 2013). The number of seats is inadequate to accommodate all the students in the lecture halls. As a result, the classrooms are rowdy and not conducive to learning. This likely makes classrooms difficult to manage effectively as the teacher will have many students who cannot concentrate or who need attention and it makes it difficult to conduct lessons and providing feedback. In some cases, group work may be assigned, but only few students would be able to participate and benefit from it. Classroom utilization and congestion also have a negative impact on teachers' productivity, as their movement may be restricted and their focus on students' activities during lessons reduced, which would affect the students' learning input and subsequent achievement (Ijaya, 2012).

The problem of population increase and the subsequent over-crowding in schools, together with poor infrastructure and insufficient classroom capacity, is further complicated by a shortage of qualified teachers. Teacher quality and high esteem are among the significant characteristics of countries with high academic achievement (Halsey et al., 1980). Ige (2012) argued that if teacher-related problems are solved, the crisis in the educational sector will be reduced by half. This is because the role of teachers as facilitators of learning is significant to achieving high and sustainable educational standards. With this in mind, in order to sustain

the UPE scheme of 1976, the government established teachers' colleges to train teachers to obtain the Grade 2 certificate (equivalent to a secondary school certificate), which qualifies them to teach at primary schools.

However, with a low standard of education resulting from the high failure rate of students, the government revised the minimum teachers' qualification for primary schools to an NCE certificate, while a B.Ed. is required to teach at the secondary school level. Nevertheless, Adeyanju (2012) found that fewer than 20% of primary school teachers in the northern states are qualified, as most of them refused to upgrade their certificates. In order to prevent teachers from leaving the profession, long vacation trainings, from July to September, are organised by universities (e.g. ABU, Zaria) for in-service NCE teachers to upgrade their certificates (FME, 2005). However, there are still other problems. In some cases, teachers are made to teach subjects other than their own areas of expertise due to the unavailability of teachers for particular subjects. Also, university graduates tend not to like to go into teaching because of the poor conditions of service (Moja, 2002). Consequently, most teachers are only teaching because they were unable to secure 'white-collar' or other more professional jobs and they are recruited because of the shortage of teachers in their fields (Ige 2012).

The issue of teacher qualification is not only restricted to the primary and secondary school levels but extends to the tertiary level as well. Adamolekun (2013) reported that at the university level generally, only 43% of lecturers had obtained a Ph.D., while Kano State University in particular had only one professor among 25 Ph.D. holders since its establishment in 2001. Likewise, many qualified teachers opt for more lucrative and prestigious jobs outside education (in government or abroad), leaving behind the inexperienced ones (Okebukola, 2012). In 2011, NUC records show that fewer than 5% of applications to tertiary institutions were for courses in education, which perhaps reflects a lack of interest in the teaching profession among the candidates (Adeoti, 2015). In addition, the poor conditions of service coupled with the recession in the country have led some teachers to engage in unscrupulous practices, such as examination malpractice, the selling of hand-outs and engaging students in other corrupt activities, just to make ends meet (Ige, 2012).

On the other hand, Nwagwu (2002) argued that the problem is not availability of qualified teachers but rather the government's inability to employ more teachers to fill vacancies, as there are qualified teachers who are unemployed. The DFID (2012) findings from research in Sokoto state showed high levels of absenteeism and poor attendance among the teachers in

rural schools, as most of them rarely come to school because their salaries have not been paid. Similarly, Nwagwu (2002) noted difficulties in the retention of teachers in rural schools due to inadequate social amenities. All of these factors have a negative effect on learning, resulting in low levels of AA among students.

Furthermore, the government is alleged to be slow in responding to problems in the education sector with sufficient funding. The evidence shows that, based on the yearly budgetary allocation for education, the country has been unable to meet UNESCO's minimum recommendation of allocating 26% of GDP to education (Oweh, 2013). Similarly, corruption in relation to misappropriation and wasteful spending on irrelevant agencies by the schools and the members of education ministries are among the key problems in the sector (Ijaiya & Lawal, 2006).

With the oil boom in the 1970s, the government was able to make adequate provisions for schools until the 1980s, when the government was faced with austerity measures and an increase in the demand for education. The argument was that in the 1970s, there were fewer schools with fewer people seeking admission into them and so demand was relatively low. Correspondingly, Coomb's (1968) contribution to UNESCO's report on *'financing education in Nigeria'* noted that the success in increasing enrolment brought about the financial crisis. Although he referred to the regional governments in the 1960s, his submission seems more applicable to the situation in the 1970s to date. The argument is that income generation was not commensurate with meeting growing educational needs, despite the fact that scholars like Oweh (2013) argue that a relatively small portion of the budget was allocated by the government to education. The economic constraints adversely affected budgetary allocations for education (in Coomb's view). This is why the government was not able to sustain the former high standards, up-grade the current standards, nor make the necessary provisions to improve the current state of education.

Arguments have therefore been raised as to who should finance education. Igbuzor (2006) grouped the debates into three perspectives. The first group believe in the free market that is that individuals or the parents, who need it for their children, should pay for it. This means that the quality may be sustained but that poor people would be denied access. This brings in the issue of equity and social justice, which is counter to the MDG of free UPE. The second group argues for funding from both the government and parents (or private financing). In this situation, the government is expected to create an enabling environment,

while the parents make provisions for necessities such as uniforms, tuition and books. The third group believe that the government should take full responsibility for basic education, as it is relevant to individual and societal needs. Parents should not be made to pay any hidden charges, which are supposed to be the case in Nigeria. Thus, considering the enormous amount of money that the country generates from oil resources, a country like Nigeria should be able to fund a good quality education system.

Most of the crises and challenges in the Nigerian educational system stem from ineffective management and poor administration in the system. Although Nwagwu (2002) has argued that while most of the problems (such as capacity deficit in enrolment, infrastructural deficiencies and depressed funding) are external to the classroom situation, they can have a strong impact on students' educational attainment. The management crisis ranges from the inability of parents to provide adequate support to their children, to teacher quality, quantity and negligence of duty, to the inabilities of school administrators to organise, manage and lead the schools effectively and efficiently. More importantly is the fact that the government has not met expectations. Government problems range from inconsistencies in policies, inadequate implementation strategies, resolutions, corruption and inadequate supervision and inspection of schools, which would ensure the maintenance of high and uniform standards. Supervision is rarely carried out as a result of a lack of qualified personnel and funding, as well as sheer indifference (Adeyanju, 2012). Where reports are available, implementation of the supervisory reports may not be prompt, whereas if they are adequately utilised, the problems associated with proper implementation of the NPE might be ameliorated. This in turn could have forestalled the numerous crises in the educational system over the years. The accumulation of these problems is one of the major contributing factors to the persistent high failure rate.

2. 6 Summary of the chapter

The discussion in this chapter highlights the Nigerian educational system, including historical policy trends and shifts, the emergence of the 6-3-3-4 education structure, and the overlapping functions of the examination boards, which lead to students being required to sit for both WAEC and NECO exams in order to obtain the 5 credit requirement, as well as for other exams in order to transition to HE. The major challenges to the educational sector are detailed. The discussion indicates that the educational system is not lacking in policies but rather in adequate implementation of the policies in order to resolve the challenges that

have led to low standards of education in the country. These problems are related to the government's inability to forecast and plan for adequate infrastructural facilities and adequate manpower necessary to meet the demands of a growing population regarding the provision of education. The inadequate budgetary allocation to education reflects a lack of will on the government's part towards tackling educational problems in the country. Arguably, the inconsistencies in educational policies and inadequate funding seem the root of the country's educational problems. The next chapter reviews literature and previous studies relevant to this thesis and which cover some of the sociological determinants of academic achievement.

Chapter Three

Background Factors and Academic Achievement

3.1 Introduction

This chapter reviews previous empirical studies on the students' background factors which are noted to constitute major influence on academic achievement (AA). The emphasis is on harnessing the various findings on how a number of social factors, such as socio-economic status (SES) in the realm of parents' educational level, income and occupation constitute differences in students' AA. Other factors include the influences of gender and ethnicity, on AA. These are reviewed in order to set a theoretical premise for this current study and to highlight on differences and similarities found in the population used in the previous studies. These factors are considered in light of the focus of this study, which is to examine the relationships between self-concept (SC), locus of control (LOC), school motivation (SM) and AA among secondary school students from northern Nigeria (NN). The first part focuses on the SES factors, followed by gender and final section is on ethnicity factor in relation to AA.

3.2. The relationship between socio-economic status and academic achievement

Socioeconomic status (SES) is one of the most commonly explored constructs in educational studies, and researchers have increasingly found it to impact students' performance (Perry & McConney, 2013; Sirin (2005). These studies have shown that children with high SES have higher AA than those with lower SES, despite similar educational experiences. Ewumi's (2013) study on the relationship between gender, SES and AA among SSS students found a high association between the variables. She indicated that SES factors determine the type of school children attend and the neighbourhood of a family's residence, which both contribute to differences in students' performance in school.

Similarly, Tomul and Savsci (2012), in their evaluation of PISA (2006), found that children who performed better on tests were those who attended expensive private schools and were supported by tutoring. They explained that since quality secondary schools are limited in Turkey, only candidates with high grades are admitted. Also, since most of these schools are in the cities, where most parents with high SES reside, students from towns and villages are

denied access. In a comparative study of Australian and Canadian students, Perry & McConney (2013) stated that attendance at a school with students of high SES increases students' AA. This means that students with the same SES status who attend schools with students from a different SES status have different educational outcomes. Those in schools where the majority have high SES have higher AA than their counterparts in schools where most students have low SES. This shows the importance of the type of SES and of the school that one attends in some countries.

However, Sirin (2005)'s meta-analysis of SES and AA, based on studies carried out between 1990 and 2000, revealed different findings that might have been caused by different indicators used for measuring SES. However, she concludes that parental education, income level and occupation are the most common indicators of SES. Meanwhile, Jeynes (2012) stated that the multiple indicators of SES used in some studies make it difficult to establish controls in education and social science research. In this regard, this study reviews each of the three components identified by Sirin (2005) as the most common indicators of SES in order to determine which is more appropriate for this sample.

3.2.1 Impact of parents' educational level on academic achievement

Aside from the availability of literature on the influence of SES on children's AA, the impact of the parents' educational level on children's academic achievement is well documented. Whereas most studies (Sirin, 2005; Igbo et al., 2014) use this as an indicator of SES, others take it as an independent variable (Kainuwa & Yusuf, 2013; Schlechter & Milevsky, 2010). Well-educated parents are more likely to make better educational choices for their children regardless of financial constraints (Onwuameze, 2013). Likewise uneducated or undereducated parents will not be able to assist their children to gain mastery of academic content, or to express opinions and answer questions posed by their children's teachers, who to them epitomise authority (Gonzalez, 2005). Evidence presented by Lareau (1997) indicates that less-educated parents rely more on schools for children's educational development than highly educated parents, who see teachers as partners and are more construed to provide children with the needed educational assistance at home.

Consequently, it can be argued that most educated parents demand a better education for their children, while their own educational background serves as what Bourdieu (1996) refers to as social capital. In his explanation, books are objectification, while parental qualifications are

the institutionalized state of social capital. This means that well-educated parents can aid children's performance more than those parents who are less educated and who might have fewer resources to support learning at home. This causes some of the differences in children's AA. Educated parents are not only able to supervise their children's school work, they are also able to encourage them towards higher performances and prompt attendance to homework and participation in other school-oriented activities (Lareau, 1997).

Differences have been reported regarding the mother's and father's influence on children's academic achievement. Onzima (2011), whose study identified positive associations between parental educational level and children's AA, found that the father's educational level has more of an impact than the mother's. However, Sirin's (2005) meta-analysis shows that current studies place more emphasis on the mothers' educational qualification as being more significant to children's AA. This may be due to the mother's closeness and bonding with the children. The father's education still tends to be equally important, since he is expected to provide more for the family financially, and having a higher education may help him play his role efficiently. If the mother is less educated than the father, she could end up with a lower paying job and would probably have more time with the children while the father can earn more and spend more time away from the house. Also, it is advantageous that the mother is educated because as she spends more time with the children, she is likely to have the time to go through and supervise their homework and academic activities (Lareau, 1997).

However, Machebe and Ifelunmi (2014), whose study found no relationship between parental education and students' AA, argued that the children of less-educated parents might be encouraged more, disciplined more, more focused on their studies and have adequate facilities that could enhance their school performance compared to those whose parents are well-educated. They further indicate the likelihood that less-educated parents have seen the advantages of education due to their condition and might therefore be enlightened and prepared for their own children to succeed in school and to compete with higher SES peers. Although some parents may not be well-educated, they might have a positive attitude towards education, invest in it, create an enabling learning environment at home and solicit help for the child, which could yield a positive outcome (Nam & Huang, 2009).

3.2.2 Influence of parental occupation on academic achievement

Similar to the issue of parental education having a significant influence on children's educational achievement, this section focuses on previous studies on the impact of parental education, since better educated parents increase the probability of them attaining a better occupation and a higher income. Kim and Sherraden (2011) found that parental occupation is an asset base for children's educational attainment because unstable employment leads to lower school attendance and a higher expulsion rate. Also, applying Bourdieu's concept of social capital to Lareau's (1997) findings demonstrates that the capital of middle class parents is more appropriate to school demands than that of the working class parents. Although the findings show that the parents have a similar level of high aspirations for their children, they differ in the paths leading to educational attainment. Upper and middle class parents may be better able to provide support than working class parents.

Hasley et al.'s (1980) study demonstrated that professional middle class parents send their children to private schools, in order to ensure that they receive a quality education, but this is increasingly becoming prohibitively expensive. Tomul and Savsci (2012) are of the view that parents with lower income occupations nevertheless prioritise private lessons for their children, considering its financial implications to be worth it in the long run. Udida et al. (2012) argue that since parents are the children's 'first socializing agents' there is the tendency for them to serve as role models, such that their children want to reach a similar level of professional attainment. If the professions entail higher levels of education, that can give them an early motivation to perform well in school.

Barrow (2006) examined the effects of family background on educational attainment, arguing that people with higher occupational status have upward mobility, which could influence children's AA. Eneji et al. (2013) pointed out that some jobs are more time consuming than others and less associated with periods that the children come home from school. Demanding jobs are not favourable to parental engagement with school and home activities. In the study, it was found that mothers with teaching or private business careers had a greater impact on their children's educational outcomes than those in nursing and banking professions. The mother's level of income was shown to have less of an impact on the student's education in their study, although other studies have presented contrary findings in this regard. This is discussed in the next section. In any case, children with highly educated and working class mothers spend longer hours at school, learning more, than those with mothers who work less (Grantz, 2006). If the mothers earn more money, they can

probably afford to pay more for the child's comfort in school compared to parents that work longer hours for lower pay.

3.2.3 Influence of parents' income on academic achievement

Studies have also linked parents' income level to children's AA (Nam & Huang, 2009; Kainuwa & Yusuf, 2013). Students whose parents have higher incomes are found to perform better in school than those with lower income parents. Parents with higher income have more resources and can ensure school facilities than low income parents. Poor families that struggle to feed their children may find it difficult to provide for their educational needs (Udida et al., 2012). Udida et al. (2012) argue that children with low income parents often engage in income earning activities to support the family, and as a result some of them stay out of school, which affects their intellectual ability and leads to low performance. On the other hand, those from high income families are able to attend school on a regular basis, have better educational materials and a more conducive home environment to promote AA.

Family size has also been linked to parents' income and students' performance, especially in the African context (Ushie et al., 2012; Maikudi, 2013). Children from small families tend to have greater educational provisions and care compared to those from large families. Smaller families are easier to provide for financially and have better learning opportunities both at school and at home. Children from large families tend to have home environments which are not conducive to learning due to over-crowding, poor nutrition and lack of adequate attention since there are many children to attend to (Ushie et al., 2012). This would affect their school performance and study habits.

Kainuwa and Yusuf (2013) found greater differences in SES and AA among students with lower grades than those with higher grades, noting that the longer students stay together schooling, the less impact parental income has on achievement. However, they agree that children with lower income parents are more likely to drop out of school due to their parents' inability to meet the financial demands of schooling. Ghaemi and Yazdanpanah (2014) found a negative relationship between income and AA. They surmised that poor students might have greater motivation to have a good life and therefore would spend more time and effort studying to obtain better results than students with high income parents. Their finding was perhaps related to the limited scope of participants in the study, which limits the generalizability of the results.

Studies have also linked parental income to children's health and well-being (Nonye, 2009; Azhar et al., 2013). Due to the greater resources of high income families, their children are better looked after medically than children of less educated parents through the provision of a good diet, hygiene and drug management (Nonye, 2000). Azhar et al. (2013) noted that health-related issues are linked to absenteeism among students, especially in rural areas where poor health conditions are prevalent. This suggests that high income parents normally have better living conditions that could prevent some avoidable ailments and would have access to precautionary measures against illness. Furthermore, they could afford to consult good hospitals and follow up with the school in the event of a child's illness rather than being handicapped because of lack of funds.

Parental income is measured by parents' earnings in most of the studies reviewed. Since the participants in this study are SS1 students who may not be aware of their parents' income level, and as many people might not want to disclose it, this is not included in the survey items; rather, as with some previous studies, other indicators are used to determine SES. Specifically, the indicators are parental education and occupation, which the students are likely to know.

Nonetheless, the review of literature in this section has shown that SES has significant impact on the students' AA in all spheres, including participation in school, parent's level of education, income, and profession. The better it is that the parents are actively involved, engage with the school and the students and make adequate provisional requirements for their wards' education. These lead to higher performance by the children in comparison to the children those parents are less engage and have low SES.

3.3 Gender differences in academic achievement

There is a vast literature covering gender differences in AA (Cousins & Mills, 2014; Legewie & DiPrete, 2012; Knowles & Lander, 2011). This section provides a brief over view of some of the empirical studies and mass media reports regarding gender issues and differences in relation to AA. Many of the studies examined AA in specific subject areas while others relate it to school access and attendance. Although most of them confirmed the existence of a gender gap in terms of male and female performance, the results are inconclusive as to which gender performs higher. Some researchers reported higher performance among boys, while others favoured girls. For instance, Legewie and DiPrete (2012) found high performance in

both groups but that girls generally had higher scores than boys. This demonstrates a gender difference. Another study found no differences in girls' and boys' chemistry scores but reported that chemistry was perceived as a masculine subject by the students, which explains less number of girls offering the subject (Cousins & Mills, 2014).

Consequently, it is argued that the differences between male and female brains result in differences in abilities, skills, and learning styles (Francis & Skelton, 2005). While boys tend to prefer short-term tasks and tend to do things quickly, regardless of the standard of their work, girls tend to be more conscientious, diligent, serious, show more maturity and pay more attention in class. Although all of the studies reviewed here were carried out in different contexts, the issue of gender difference is universal.

Irrespective of the findings, the explanations put forward in gender studies tend to be based on the nature versus nurture perspective or a mixture of both as the major factors that account for gender discrepancies in AA (Knowles & Lander, 2012). While the naturalist arguments are based on the physiological or biological differences between males and females, the nurture perspective favours the social influences of the society. Thus, the latter believe that gender differences are socially constructed by the people in the society, contrary to the biologist and evolutionary psychological perspectives on brain differences.

These constructions perhaps explain some the differences in the treatment of males and females in the society. To this effect, Knowles and Lander (2012) linked girls' educational underachievement to historical and religious perspectives that made women subservient to men. Often, girls' education was delayed due to religious factors such as gender segregation, early marriage and other culture-related subordinations. Women were excluded from positions of power and administration (Heward & Bunwaree, 1999). This was the situation of women when the northern region came under colonial rule in 1903, at the inception of western education. The first few schools that were in operation were for boys only because the British educational policy placed more emphasis on co-education, which had been successful in the southern part of the country. This was not appealing to the predominantly Muslim population in the north, and it was not until in the 1930s that girls' education began to receive attention (Baikie, 2011). The practice of co-education was believed to make the school environment unsuitable for girls in the area; therefore, parents preferred to keep their female children at home. This is similar to the situation in Niger, a country that shares borders with most states in NN, where in the past, girls were not allowed to go to school

because of exposure to modern ways and mingling with boys and male teachers, who in the parents' views could take advantage of their daughters and bring shame into their (girl's) family (Heward & Bunwaree, 1999).

Female school enrolment witnessed a tremendous increase with the introduction of UPE in 1976, and even when school fees were later introduced, most governments in northern states offered free education for girls up to secondary school, as it had become compulsory for every child. Maikudi (2013) further stated that the practice of keeping girls out of school in NN stems from religious norms that require a separate environment from males for the education of females. This perhaps is the reason why most single sex schools is more prevalence in the north (and Muslim dominated areas) than in the south of the country. While Lincove (2009) supports this view of girls' marginalisation in NN, he extends the argument beyond religious beliefs to other factors such as distance and poverty, which also affect boys' school attendance rate. However, he acknowledged the social construction of the females as homemakers, unlike males, as an important factor in the disparity between the genders' school attendance. Girls are expected to perform domestic responsibilities within the family which are not required of boys.

Although enrolment of girls in schools in northern states has increased, it is still not comparable to the southern region. For instance, the states of Sokoto and Zamfara in Nigeria are among those with the largest gender gaps, at close to 50% in 2003 (Maikudi, 2013). In order to eradicate this problem in the northern states, the Federal Government of Nigeria, in collaboration with the Department for International Development (DFID) and UNICEF, initiated a programme called Girls Education Project (GEP).

For all of the aforementioned reasons, this study explores the existence of gender differences among the sample. However, this is done with a different focus than other studies have adopted. The binary grouping of educational outcomes between male and female seems to be ubiquitous. Rather than debating which gender out-performs the other, however, it is argued that the focus should be more on the development of each individual's potential and making provision for students' different learning needs. This means that, teaching methods should correspond to learning styles in order to improve the educational attainment of both genders. For instance, in areas where communication is seen to deter boys' achievement, efforts could be made to improve it. Similarly, male and female stereotypes should be avoided and individuals should be encouraged to become independent learners, who learn at

their own space, so that no child is left behind. The next section reviews the literature on issues of ethnicity and education in Nigeria.

3.5 Ethnicity and Education in Nigeria

This section describes the disparity in educational attainment among the various ethnic groups in Nigeria and the different policies that have been introduced to close the gap. As explained in chapter two, Nigeria comprises multiple ethnic groups joined together into one country. Despite the fact that the country has existed for over a millennium, Nigerians still hold their various ethnic identities, affiliations and attachments very strongly, which is manifested politically, economically, historically and educationally (Jekayinfa, 2002). Most prominent amongst the ethnic groups are the Hausa, Yoruba and Igbo, together constituting 68% of the total population (NPC, 2006). The ethnic rivalry amongst these groups has numerous ramifications. Furthermore, each of these groups contains smaller minority groups that are subsumed under a single designation. The pattern of differences of their educational level is the same as explained in chapter one (1.2). The Yoruba are dominant in the south-west and the Igbo in the south-east. These two ethnic groups had the earlier contact with the missionaries and thereby became the most educated in the country (Madu, 2013). However, following independence in 1967 and lasting until 1970, a civil war between the Igbo's and the federal government led to the deaths of many Igbo people, drastically reducing the number of educated elite. Consequently, most of the educated people in the country were Yoruba. The Igbos thereafter needed to be rehabilitated while for the Hausas, there was a need to establish more schools to provide them with access to education (Aluede et al., 2012).

In the 1970s, the government formulated a series of policies targeted towards educationally disadvantaged groups in both the north and the south. The government strove to reduce the educational imbalance in order to solve the problems of inequality and marginalisation as well as to provide equal opportunities to disadvantaged ethnic groups. This was to ensure fair and equal treatment educationally, developmentally, socially and economically (Adujie, 2007). Indeed, this is stipulated in the National Policy on Education in terms of providing equal rights and opportunities to every Nigerian child irrespective of their ability or disability and for the general development of the society (NPE, 2004). The policies aimed at achieving equal social development to the various ethnic groups in the country.

Some of the notable policies formulated to enhance education include the establishment of federal colleges, the National Youth Service Corps, and the quota system. Among these, the quota system was highly criticised as it was seen by the advantaged groups to impede education standards since it leads to low cut off points for admission for the less educationally disadvantaged states (Ukiwo, 2007). It also led to fewer available positions in the federal civil service for the people from the high educated ethnic groups who were mostly from the south, which was seen to negate equal opportunity by them (Ibid). This led to an explosion of private schools in the country since government schools were not able to accommodate all of the qualified candidates from some ethnic groups. To this day, the Yorubas in the south-west have the highest number of schools in the country (Olaniyan, 2011). See table 3.1 for the distribution of the quota system in admissions.

Table 3.1 Percentage distribution of the quota system in admissions in Nigeria

Location	Allocation (%)
Disadvantaged States	20
Catchment Areas	30
Academic Merit	40
Institutional Discretion	10
Total	100

Source: Ihebuzor, 2000.

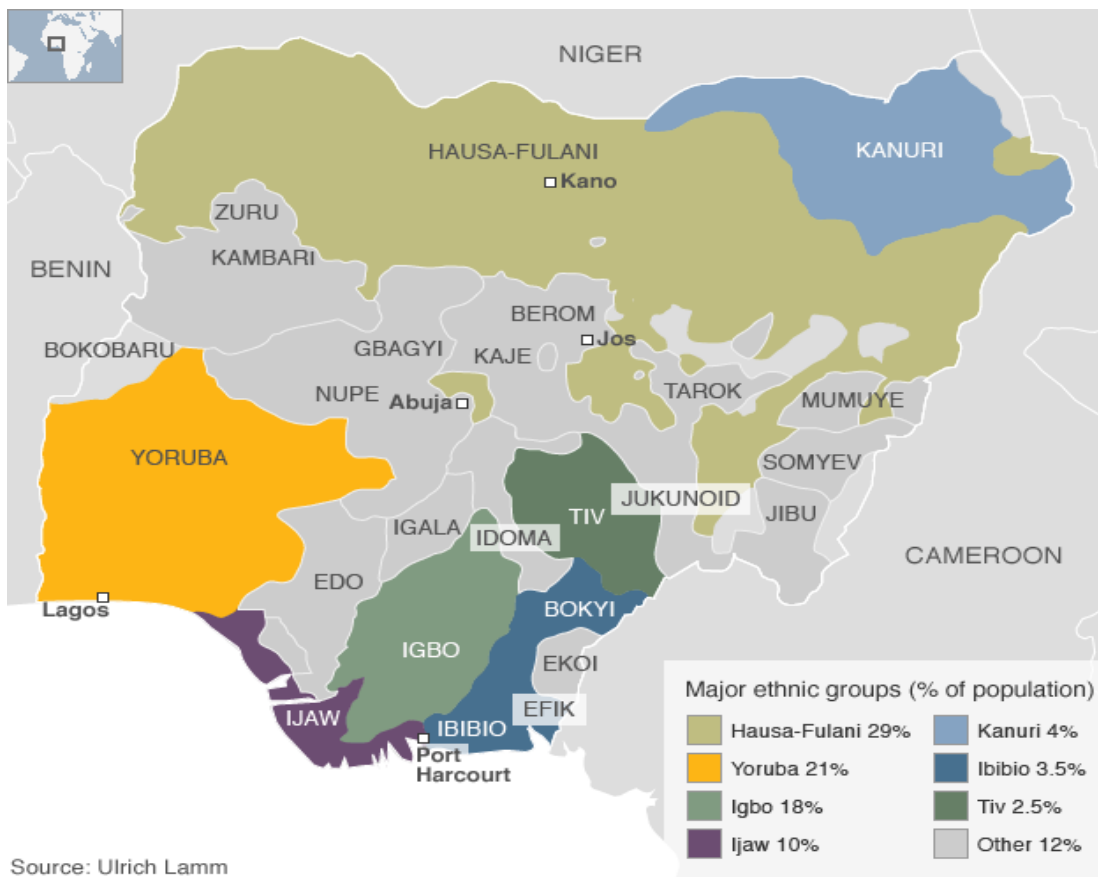
This effort by the government in reducing education imbalance among ethnic groups, led to emergence of ethnic consciousness among the people extending to a more political mobilisation to inequality in most ventures (Ukiwo, 2007). Reports have been provided of instances of misuse of the police by some school administrators and politicians (Ihebuzor, 2000). However, the gap in access to education appears to have been drastically reduced, as all of the ethnic groups now have highly educated members. The most important difference that prevails is in the performance level on standardised examinations, on which the southern students - from the Yoruba and the Igbo - have good results, while students from the north, who are mostly Hausa, lag behind. Therefore, this study examines some of the main factors contributing the educational achievement of students in the north, who are mainly Hausa.

Nevertheless, it is expected that students from other ethnic groups will be present in the sample, and differences in their performance are examined. To this end, provision is made in the survey to identify the ethnic backgrounds of the students, who might come from one of the three major ethnic groups or other smaller minority groups. See figure 3.1 for a map of the various ethnic groups in Nigeria. The next chapter reviews the literature on the conceptual variables.

3.6 Summary

The review of this chapter highlights on the background factors as important determinants of AA in view of previous studies. It aims to identify some of the major issues of the background factors discussed in research so that comparisons can be made with the participants of this study. The review indicates the importance of parents' SES as a major characteristics of the students' background factor that impact AA. It indicates that students from high SES stand better chances of having a higher AA than those from low SES. Review on gender differences in education is shown to be a universal issue that has long been recognised which appears to follow similar trend in most societies across the world. As prevalent in NN, male schools were set up long before establishment of female schools, but improvement in female attendance rate has helped to close gender gap in educational attainment in way that in some societies female students are reported to achieve higher than male students even in traditionally male dominated subjects such as maths and sciences. Also discussed are the educational imbalance among the various ethnic groups in Nigeria which is similar to the regional differences in education in chapter one (1.2) and the efforts made by the government to close the gap. However most of the differences in education raised ethnic tension and suspicion in political activities in the country. The following chapter focuses on the review of literature on psychological determinants of AA, which includes SC, LOC and SM. See Figure 3.1 for the map on ethnic groups in Nigeria.

Figure 3.1 Major Ethnic groups in Nigeria



Chapter Four

Personality Factors in Academic Achievement

4.1 Introduction

In chapter three, background factors were shown to have impact on academic achievement (AA) of students. Most frequently explores background factor irrespective of the focus of studies include SES, gender and ethnicity to show characteristics of participants in a study. This chapter reviews the empirical literature related to the main constructs of this study, namely, self-concept (SC), locus of control (LOC) and school motivation (SM). These are personality constructs that have been identified as having a positive influence on students' AA, as discussed in Chapter One. The study explores variations in these concepts amongst the participants with the aim of identifying some of the significant constraints on the performance of northern Nigerian senior secondary school students (SS1). This is to examine the impact of these three constructs in AA and their operationalisation by previous studies, in order to guide the study in establishing the concepts among this participants. The chapter begins with an exploration of SC, its relationship with AA and its measurement by previous researchers. The second section looks at the concept of LOC, its relationship with AA, and how it is measured. The third section discusses SM, its relationship with AA, and its measurement.

4.2 The concept of 'self' and its dimensions

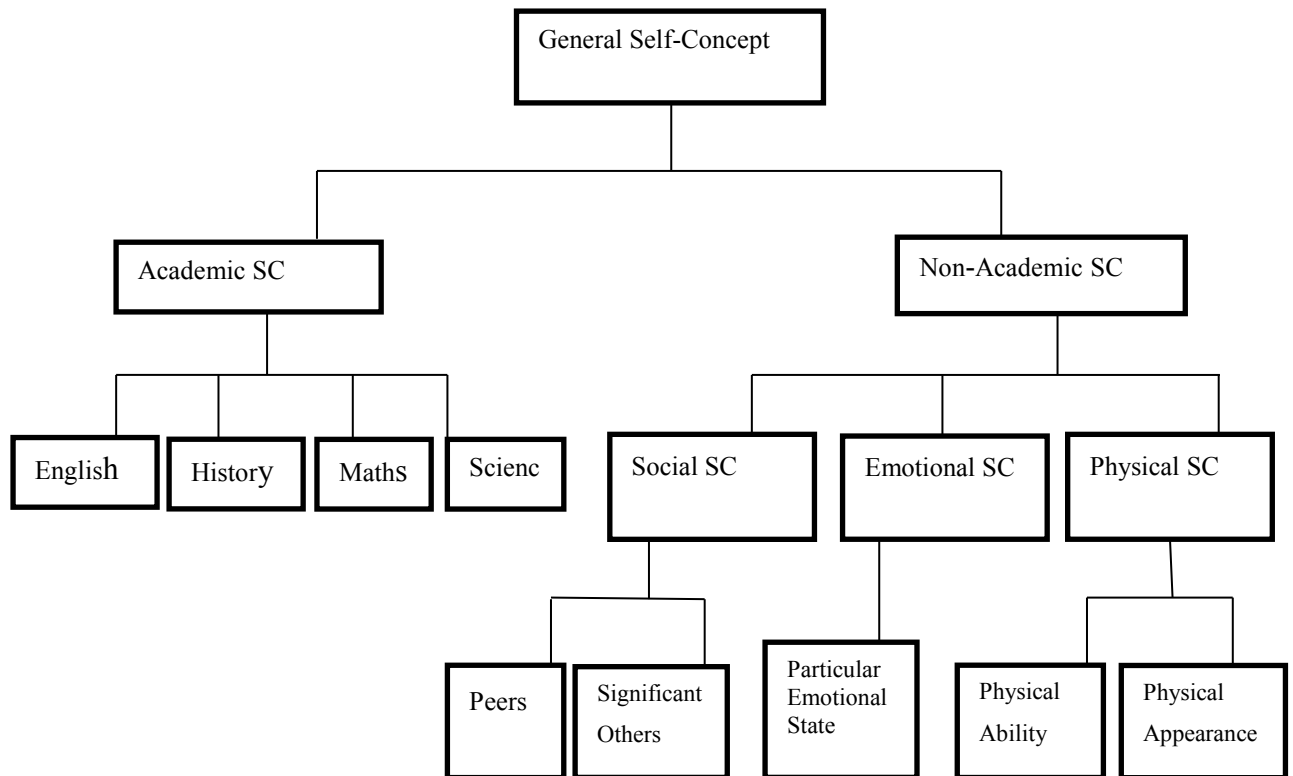
The concept of 'self' stems from the inner reflection of an individual, which usually links to the notion of, thought to express a person's personality. It is a mental image a person has of him- or herself which could be descriptive and/or evaluative (Burns, 1986). The image relates to the attributes of the person, such as being tall or beautiful, while the evaluative reflects his or her assessment of these attributes, such as being good or bad. As a personality construct, the 'self' indicates the uniqueness of an individual vis-à-vis other people in the maintenance of social and personal growth (O'Mara & Marsh 2013). While SC is personal, it derives its influence from experiences and relationships with other people and the environment (Shevelson et al., 1976).

Humanist theorists like Rogers (1956) and Sullivan (1953) noted that individuals develop SC based on early childhood experiences and the evaluation of important people, who are closest to them. That is why there are manifestations of both feelings of self-worth and worthlessness. These are a result of individuals' needs, which they strive to achieve, leading to rejection or flattery from others. However, Rogers (1951) indicated that people do not need to rely on others to be happy or unhappy if they have positive SC. This can be achieved if their self-image is consistent with their ideal-self, which enables them to achieve their utmost potential and attain good performance. He defined SC as comprising factors including self-image, that is how individuals see themselves, self-esteem, which relates to the value people ascribe to themselves, and self-ideal, which is who or what the person wants to be that they are not presently.

Similarly, Damon (2004), argues that apart of people being able to reflect upon their own attributes and preferences, self-concept also comprises the ability to think about what one is likely to do in a particular situation given the knowledge of 'self'. With knowledge of both the past and the present self, people can predict their future-self. Gemeay et al. (2013) posit that SC includes peoples' attitudes, feelings and knowledge about their abilities, skills, appearance and social acceptability.

Self-concept is a well-established concept, as early researchers, such as William James in the late nineteenth century, perceived SC to be a unidimensional construct stressing a single, global or general SC, this has since been disputed by later scholars who view it as a multi-dimensional concept (Green et al., 2006). Shavelson et al. (1976), in response to the criticism of SC being seen as a one dimensional concept, developed a model of it that was multidimensional and hierarchically organised from smaller units to larger components. Each of the aspects is distinctive and connected to the others. This model became revolutionary, as it provides a clearer basis for defining and measuring the different components of SC. See figure 4.1.

Figure 4.1 Multidimensional model of self-concept



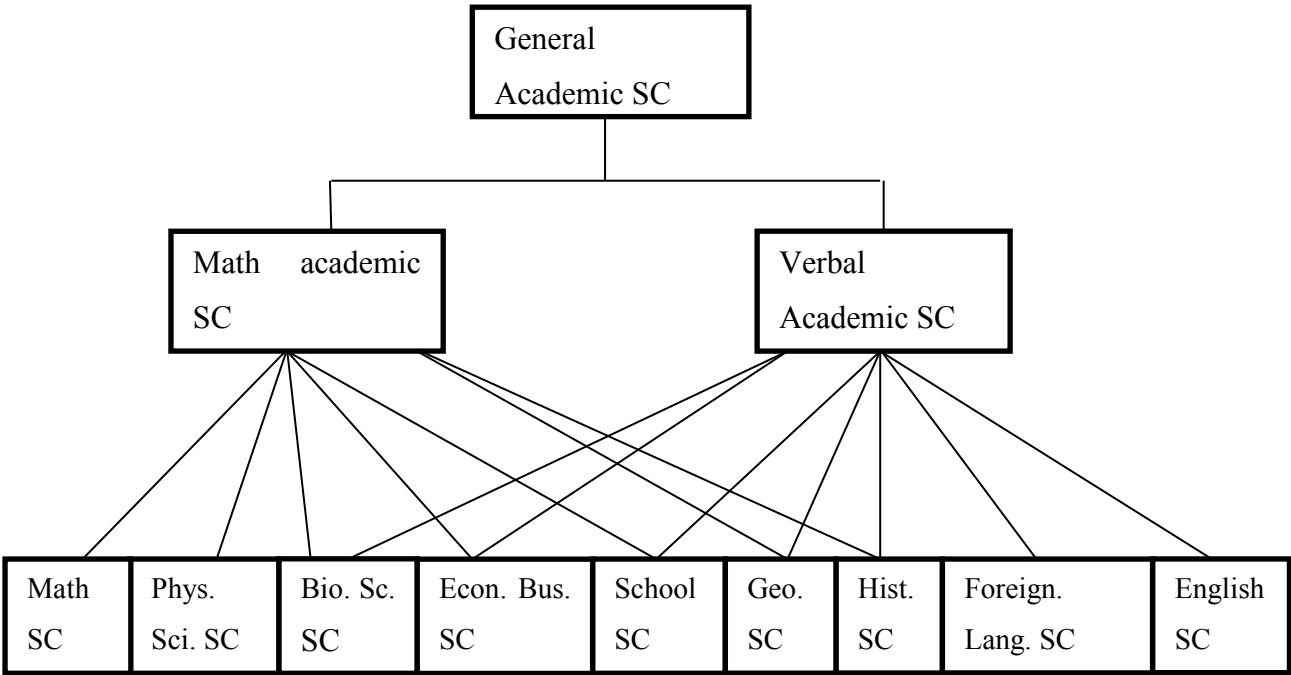
Source: Shavelson et al. (1976: 413)

This model comprises general SC at the top, which is broadly divided in to academic and non-academic SC, with each having smaller components. Shavelson et al. (1976) indicated that people act based on the lower units of the hierarchy, which combine to form the larger units, and together form the general SC of a person. From this model academic SC as an aspect of general SC, can be defined as the individuals' perception of their academic activities and achievement in relation to specific subjects in school. Non-academic SC relates to individuals' perceptions of themselves in social, emotional, religious, and other activities.

Among the two broad aspects of general SC, academic SC has been the most researched area (Marsh &Yeung, 1997). However, in 1985, Marsh and Shavelsons (1985) revised the academic aspect of Shavelson et al.'s (1976) model to place more emphasis on mathematics and verbal academic SC, with each having two distinct divisions with five overlapping subject areas. This improvement in the academic SC model was a result of the findings from

studies that showed overlaps in the relationships between SC and AA. See figure 4.2 for the academic SC model.

Figure 4.2 Model of academic self-concept



Source: Marsh and Shavelson (1990a: 624)

This model shows possible areas of overlap in the relationships between specific subject domains of SC and AA. The model supports construct justification of academic SC based on the responses of the students who participated in the study (Marsh, 1990). The next section further explores the relationships between SC and AA in view of previous studies.

4.2.1 The relationship between self-concept and academic achievement

The relationship between SC and AA has been widely examined in numerous studies (E.g. Arens et al., 2016; Wach et al., 2015; Marsh & Yeung, 1997). Most of these studies found a positive relationship between SC and AA. For instance, a longitudinal study by Arens et al. (2016) reported a positive relationship between maths SC and AA among German pre-school pupils. However, the results show different levels of relationships for the three different periods that the data were collected, with the lowest level of correlation being 0.075 and

0.882 as the highest. The language barrier was seen to affect the reliability of the results, because items were translated from English to German. Also, similar cross-sectional studies conducted in southern Nigeria found a positive relationship between SC and AA. While Obilor (2013) showed moderate level of relationship with a correlation value of 0.615, Tella et al. (2012) found a low relationship (0.2).

Despite the variations in the degree of positive relationship between AA and SC in these studies, their findings demonstrate a similar pattern in the relationship between SC and AA. This means that students with high SC have high AA, while those with low SC also have low AA. However, notwithstanding the similarity in the relationships between these two variables in previous studies, scholars have not been able to agree on which of them has the greater impact on the other. Three theoretical models have been used to describe the causal relationship between SC and AA, namely: the skill development model, the self-enhancement model and Marsh's (1990) reciprocal effects model.

The first two of these models were developed by Calsyn and Kenny (1977). The skill development model indicates that AA causally enhances SC, which means that SC is a function of AA. This model therefore focuses on the development of students' academic skills in order to improve SC. This means that educational practitioners looking to improve students' SC should focus on developing interventions targeted towards aspects of AA rather than SC itself. In support of this model, Guay et al.'s (2004) study of the developmental trends between ASC and AA among Canadian elementary school children from 10 schools found that AA leads to academic SC in the early years of primary school more so than in later grades.

The self-enhancement model on the other hand inverts the skill development model arguing that SC promotes AA. This model suggests that improving self-perception by eliminating negative thoughts and other behaviours helps to improve AA (Guay et al., 2004; Marsh et al., 2011). This model provides strong justification for the SC enhancement interventions that are explicit or implicit in many educational programmes (Marsh, 1990). In addition, Byrne (1984) believed that academic SC has motivational properties and argued that changes in academic SC would lead to subsequent changes in AA.

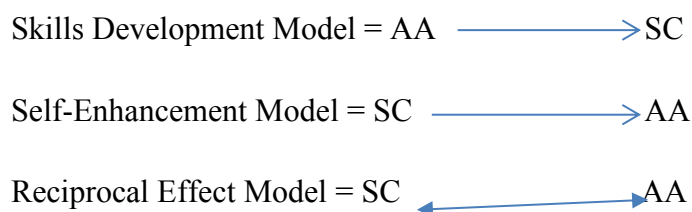
Guay et al. (2010) pointed out that most research using either of the two models considered the effects of the prior construct (i.e. the effects of prior achievement on subsequent SC in support of the skill-development model compared to the size of the effects of prior SC on

subsequent achievement in support of the self-enhancement model). However, Marsh et al. (1990a) criticised the two earlier models as being simplistic for the one-dimensional view of the direction of the relationships between SC and AA. They indicated that it was methodologically unsound and inconsistent with SC theory, proposing instead the integration of the two theoretical models into a new model called the Reciprocal Effects Model (REM).

The REM model shows that prior self-concept affects subsequent achievement and prior achievement affects subsequent self-concept. This means that self-concept and academic achievement always affect each other, irrespective of which comes first, and this will continue to be so subsequently. Marsh (1990b) concluded that since the two models are reciprocal, education practitioners should strive to improve both academic self-concept and achievement simultaneously. This will help to sustain continuous improvement of the AA and SC rather than emphasising one above the other, which could eventually lead to the deterioration of both over time.

Many studies (Gemeay et al., 2013; Pinxten et al. 2015; Marsh, et al., 2015) have found support for the REM model all over the world, including some recent research in Nigeria (Ajayi et al., 2012), compared to the other two models (Pinxten et al., 2015). The REM model involves more than one point of data collection and therefore requires studies to be longitudinal in order to determine change over some period of time. It is therefore seen not to be appropriate for the cross-sectional design later adopted by this study. Since this study seeks methods of improving students' AA, which possibly relates more to the self-enhancement model than the other two. Apart from that, the purpose of this study resonates more with the REM model, which is based on the enhancement of both concepts to sustain longer term improvement in AA. The following figure 4.3 summarises the relationships according to the models.

Figure 4.3 Summary of the three theoretical models



4.2.2 The Measurement of self-concept

This section looks into the scales used for collecting data on SC in some of the previous studies. Regardless of debates about the direction of the relationship between AA and SC in the previous section, most of the studies adapted existing standardised survey questionnaire items. Some of these include self-perceived ability (SPA), developed by Harter (1985), and the self-description questionnaire (SDQ) developed by Marsh based on the Shavelson et al.'s (1976) model covering 13 different domains. The latter questionnaire consists of 10 items for each of the academic and non-academic domains of SC. Marsh (1992) advised researchers to use domain-specific items in the exploration of relationship between SC and AA.

The SDQ is the most frequently and widely used measure of SC for different school levels, reviewed in subsequent years. The most recently developed is the SDQP for measuring the SC of preschool children. There is also an SDQI for elementary or preadolescent children, SDQII for secondary and adolescent students SDQIII for adults or post-secondary school students. These are likely favoured by researchers because of their focus on specific domains, which makes the findings easier to interpret compared to general SC, which involves a combination of many factors. However, despite the adaption of these scales by various studies, changes have been made to adjust the instruments for various groups of students. Some of the changes are influenced by translation into other languages and variations in the Likert point scales which are used (Marsh & Yeung, 1997).

For instance the SDQ has been translated into German (Pinxten, et al. 2010), Urdu (Aasmatus, 2010) and Chinese (Xu et al., 2013). Regarding the Likert scale differential, some researchers have used 8 point scale (Drydale & Macbeth, 2012), a 6 point scale (Xu et al., 2013), a 5 point scale (Pinxten et al., 2015), and a 4 point scale (Arens et al., 2016). Arens et al.(2016) used a semi-structure interview to assess the literacy level of preschool children, the first version of which had only binary answers (yes or no), while later versions includes yes sometimes, or yes always, and no sometimes and no always. In any case, the reduction of the options provided to respondents are said not to invalidate the results neither does it affect reliability of the items (Marsh & Yeung, 1997).

However, irrespective of the differences in the scales used by the previous studies, the low scores reflect low SC while high scores relates high SC. For instance, Guay et al.'s (2004) study used a four point likert scale to show students agreement or disagreement with the items of Harter's (1985) SPA scale in which a score of one represent a low SC and four represent

high SC for each of the particular item. The scores are added together and later divided by the total number of items in the questionnaire. In all, above average scores represent high SC while below average scores indicate low SC for the participant. This is similar to Arens et al (2016) who used SDQP among preschool children in which responses of the pupils were allotted a code of zero to three. The higher value for the individual show high levels of SC and vice versa.

Other SC items come in the form of rating scales, check lists, Q-sorts, Likert types and projective techniques (for example, Burns, 1982). A rating scale is a list of statements in which the respondent endorses the degree to which the item applies to him/her. It can be sentences, words, phrases or most commonly in Likert form (Wang, 2013). The interview scale appears to be less frequently used, as most of the studies reviewed used questionnaires, except among mixed methods studies (such as Arepattamannil, 2011 and Smith, 2002). However, it is beneficial in that it is very good in allowing free responses, as the other methods use only closed questions in which the responses are restricted (Clark-Clark, 2001). This study, therefore, adopts a sequential mixed method approach, that involves the use of questionnaires, followed by semi-structured interview.

Based on this advice and given the flexibility in adapting REM to a researcher's focus, the present study adopts SDQII because the participants were expected to be adolescents of around 15 years of age, considering their grade level. Subject areas to be measured are English language and mathematics. In establishing the SC of the students, lower scores of the scale will indicate low SC while the high scale will indicate high SC for the participants. Also the mean scores will be useful in this regard, although they are categorical but will be transformed into an interval scale for this purpose. This is to provide easy interpretation of the result in establishing the SC of the students in this study. This leads to exploration of literature on the second conceptual variable in this study which is LOC.

4.3 Internal and external locus of control

Locus of control is another construct that relates to academic achievement and is explored in this study. Its Latin origin denotes 'location', which refers to individuals' location or place of control of the factors that affect them, such as luck or family influence. The term was coined by Rotter (1966) to explain the social learning theory of the personality of human beings. Rotter believed that reinforcement guides human behaviour and that the contingencies of

reinforcement (relating to rewards and punishments) influence people's beliefs about what causes of their actions. In relation to education, students have two possible outcomes, which are success and failure, and they are preceded by different causal attributions (Weiner, 2007). Students' successes and failures influence their emotional reactions and the degree to which the outcomes change their expectations for subsequent future outcomes (Sambo & Balarabe, 2012).

Based on Rotter's theory, students who attribute their success or failure to themselves, which includes a number of internal factors such as abilities, skills, effort and capabilities, are referred to as having internal locus of control (ILOC), also known as the internals. Those that attribute their academic outcomes to factors other than themselves are said to have external locus of control (ELOC), also known as the externals. Thus, people with ILOC believe that life outcomes are largely under their own control and depend on their behaviour or activities. As a result, such people have a high level of confidence, resilience, security, and a positive outlook, and feel no real need for external approval (Santrock, 2003). They are less likely to conform and less likely to be obedient (Holt et al., 2008). Conversely, people with ELOC have the opposite personality from those with ILOC. They attribute their outcomes more to the influence of external factors such as luck, chance and powerful people (Passer & Smith, 2001). Externals, unlike internals, tend to be less confident, easily exited, more nervous, and insecure (Santrock, 2003).

Consequently, ELOC people conform more to the law and are easily influenced by others and by events; this is possibly the reason Halpert and Hill (2011) suggest that whether or not people believe a situation or event is under their own control will influence their reward expectancy and behaviour. Similarly, Darley and Lim (1986: 370) noted that 'ILOC and ELOC individuals differ not only as to their attentiveness to information immediately present in the environment, but also in terms of their actively seeking additional relevant information'. Thus, internals put more effort into improving their skills to succeed in future tasks, while externals do not and are unlikely to perform better, since they attribute the outcome (success or failure) to luck, fate, etc.

Weiner (1976) extended the LOC theory to include other factors of stability and control. He explained that individuals attribute their performance outcomes of success and failure to internal and external factors, as stated by Rotter, but that degrees of ILOC or ELOC may not be on a continuum. That is to say, a person's internality or externality could be stable or

unstable in different or similar situations and events, which Russell (1982: 1137) called 'situational variability'. Also, it may depend on whether the outcome in question actually is within a person's control or is uncontrollable.

Weiners (1976) theory provided in-depth insight into outcome beliefs. Individuals can make internal or external attributions in different situations depending on the circumstances of the events surrounding the outcome. Understanding the various circumstances of people's beliefs regarding success and failure, as in the case of this study's sample, can yield better insight into some of the problems leading to poor performance. Such an understanding can indicate their attribution factors whether their outcome beliefs are stable and whether they can control the factors that influence their LOC or not. A cross cultural studies (Hingins & Bhatt,2001) provided evidence to support differences in people's LOC in different cultural perspectives. The study demonstrates that people from communal culture were had emic had emic perspective which is linked to external tendencies compared to etic perspective of people form the western culture who are mostly individualistic in their beliefs.

This study explores the students' LOC factors based on Rotter's theory to gain a broader perspective on their control beliefs. Either belief, internal or external, is likely to affect the academic performance of the individual, whether positively in the case of ILOC or negatively for those with ELOC, as externals would attribute outcomes to fate, task difficulty or other people rather than expend the effort to improve themselves. This leads to the literature review on the relationship between LOC and AA, which is central to this research.

4.3.1 The relationship between locus of control and academic achievement

There is now quite a large body of research (Bodill & Roberts (2013; Grantz, 2012; Fakeye, 2011) on the relationship between LOC and AA. Most of these studies demonstrate a consistent positive relationship between LOC and a range of AA related factors, such as school attendance, career aspiration, school adjustments, task completion and goal attainment. This relationship, according to previous researchers, is predicated on how individuals attribute their successes and failures in school to themselves, their own efforts and abilities, or to other factors, such as the difficulty of the task or fate. These are the internal and external factors discussed in the previous section.

While internals may express pride in good outcomes and feel ashamed of bad outcomes, externals would experience less intense emotions in relation to their academic outcomes (Phares, 1975). Consequently, Findley et al. (1983) indicated that greater internality is associated with higher AA, and Grantz (2012) found that internals earn better grades and work harder because they spend more time on homework and study longer for tests than externals. Also, Bodill and Roberts (2013) found that the number of hours spent studying was predictive of LOC and performance in that internals exert persistence and effort in studying longer due to their belief that it results in good AA. This is perhaps why internals engage in difficult tasks and do not give up easily when given negative feedback. They would rather change their strategy than resign themselves and their outcomes to external factors or assign blame to others.

However, this means that students can easily be discouraged due to consistently poor performance despite efforts at achieving better grades. This can result in lack of interest and perseverance at school tasks, and ultimately, they may find it easier to avoid potential damage that might occur due to attributing failures to their own fault or ability (Grantz, 2000). Therefore, they start to make external attributions rather than to accept blame. Keith et al. (2012) posit that LOC has a meaningful impact on high school seniors because in their study, the students with ILOC had higher achievement levels while ELOC was associated with low scores. In a similar study by Anderson et al. (2005), the results indicated that high ELOC has a detrimental impact on AA while high ILOC promotes high AA. Competent students readily take responsibility for their outcome irrespective of whether it is positive or negative and develop self-regulation skills for improvement, whereas less competent students reject responsibility for their performance outcome (Fakeye, 2011). Sambo and Balarabe (2012) reported that students with ILOC who had low scores exhibited feelings of worry, while externals showed a lack of concern. This could suggest that the externals who have attributed that cause of their performance to external factor may not see any reason to worry. They may think that there is nothing they can do to improve outcome while the internal may be preoccupied with the kind of strategies (efforts or abilities) to exert in preparation for future outcomes, which could explain their anxiety and self-mood

In another study on students' performance in a computer assisted language learning program demonstrates the relationship between LOC and AA because internals showed autonomy and exhibited confidence in applying instructions and performing the computer skills compared to the externals (Mei-Mei & Chiung-Mei, 2014). This illuminates the aspects of dependency and

learner control in learning situations, as some people learn effectively without needing much assistance while others do not. The indication is that with little guidance, internals can go further to achieve while externals may need more help and probably more time. Internals are guided by their own decisions, are more self-determining and more active in the quest for knowledge and information related to events and factors that affect them (Fakeye, 2011). Similarly, LOC is reported to improve with age, in that as people grow older they tend to become more internal than external (Fakeye, 2011). However, a longitudinal study among four ethnic groups in the U.S. found LOC to be stable among the adolescents over the period of four years (You et al., 2011).

In situations of both success and failure, externals attribute outcomes to external factors, believing failure to be destiny, while internals continue to work harder, believing that they will succeed in the end. It is therefore logical that if one will succeed at the end, he or she should continue to persevere to reach their goal. Externals, on the other hand, may not attempt to improve on future tasks since they feel that they cannot control their attainment of high AA and will therefore stop trying.

The review of the literature in this section reveals that LOC is related to AA in that students with ILOC tend to have higher AA compared to those with ELOC. However, the prior achievement of the students generates their control beliefs to show whether they are ILOC or ELOC, which will further affect their future performance. Internals adopt new strategies to improve, while the activities and behaviours of externals are contrary and even detrimental to subsequent achievement. Therefore, knowing the qualities of each of these two different groups is important to practitioners, as they require broader teaching and varied learning strategies to achieve good performance in school. The next section explores the measurement of locus of control by some previous researchers.

4.3.2 Measurement of locus of control

This section focuses on the measurement of LOC established by prior studies and the determination of its relationship with AA. Rotter (1966), who first proposed the concept, developed the Internal-External scale (I-E Scale) as a self-report inventory to indicate the extent to which a respondent exhibits internal or external LOC when interpreting event outcomes in life. The scale consists of 29 items concerning six areas, namely: academic, social, affection, dominance, social-political beliefs and life philosophy (Fulham et al., 1993).

A single item contains two opposing statements, one indicating a factor of internal LOC and the other indicating externality. Respondents are to choose the one that agrees with their perception, thereby reflecting their LOC. One point is awarded for internal statements and 2 points for ELOC statements. According to Rotter (1966), a score of 10 or less indicates internal LOC while a score of 11 or more denotes external LOC.

Weiner's (1976) criticism of this scale led to the development of a causal scale that includes three dimensions, which are LOC, stability and controllability. The scale is comprised of nine items and a 9-point Likert scale, with the highest point indicating the direction of ILOC, stability and controllability while the lowest point of the scale reflecting ELOC, instability and uncontrollability. Apart from criticism of the two-dimensionality of Rotter's scale, the content was also criticised for being too general for specific situations, such as learning, which prompted researchers to review and revise the items in order to fit their studies and their samples (Huizing, 2015). Despite the criticism, Rotter's scale is still the most widely used LOC measurement tool, reported to have been used in over 2000 studies across 45 countries and translated into many languages (e.g. Masqud, 1983, Suphi & Yaratana, 2011). For this reason, some of the versions generated from translation into other languages may have validity and reliability issues (Snyder, 2008). Thus, Huizing (2015) stated that while it is acceptable to adapt and revise standardised scales, their reliability and validity need to be strengthened in order to address some of the shortcomings that arise from the process of translation in order to adapt the scale to the new settings.

Similarly, Cassidy (2011) adapted Rotter's scale to create a health LOC scale after revising the wording to suit clinical activities. He indicated a reliability of 0.736. His longitudinal study was used to distinguish between the internality and externality of the university students. Although the study found significant relationships between the variables and AA, the correlation coefficients were low, which is perhaps attributable to low levels of ILOC amongst the sample population. In addition, Fakeye (2011) adapted a scale developed by Araromi (2010) and added a 4-point Likert scale to it after it was found to have high reliability coefficients. Mei-mei and Chiung-Mei (2009) adapted items from two standardised questionnaires which include 'intellectual achievement responsibility' and 'control of learning beliefs', developed by Crandall et al. (1965) and Pintrich et al. (1991), respectively. The items were transformed into a 5-point Likert scale with 65 being the benchmark. Thus, scores below 65 indicated ELOC and 65 and above indicated ILOC. Another study by Tella (2009), among secondary school students in Nigeria, adopted Tracie's academic LOC 28 item inventory. The

items were true or false and 14 was the benchmark for distinguishing students' LOC. A higher score indicates ELOC and a lower, ILOC. This is the same as the conceptualisation of SC by previous studies (see section 4.2.2).

Examples of other notable LOC scales include the Nowicki-Deke LOC scale and Wallson and Wallston's Health LOC scale. All of the aforementioned studies offer differing scales to measure LOC. The adaptation of the instrument may sometimes require that it be subject to validity and reliability tests to ensure that it is adequate for its purpose, to yield some level of accuracy in the results. This study adapts items from Rotter's scale, related to academic areas because other items on the scale relate general areas like social and political affairs. For instance the item which states that 'most of the time I can't understand why politicians behave the way that they do', seem inappropriately to the focus of this study and the respondents grade level. Other studies who have used the scale indicated that it was reviewed in order for it to adapt well to the studies. Maqsdud's study (1983) used a version of Rotter's scale translated into Hausa among NN students, and found that LOC predicted the students' performance at secondary school. Similar studies that have used the scale in recent years include Suphi and Yaratan (2011), who used a Turkish version of the scale among university students in Cyprus and reported a reliability of 0.70. See chapter 5.4.2 for more discussions on the LOC scale. The next section explores SM as the third conceptual variable that is of interest to this study

4.4 The concept of school motivation

School motivation is defined as the energy and drive that enable students to develop an interest in learning and participate in school activities (McInerney & Ali, 2007). It involves positive aspects of education that make students engage positively with the school (Wang et al., 2010) and the willingness of the students to engage and complete school tasks without being compelled to do so or without expectations of punishment or reward constitute SM (Fan et al., 2011). Uitto and Saloranta (2011) posit that it includes personal and situational interests which are important characteristics of educational attainment. Personal interest refers to individual differences in drive and motivation, which is demonstrated through characteristics and preferences. What motivates one person may be of little interest to another. While personal interest can be linked to intrinsic motivation, situational interest is linked to extrinsic motivational factors. Extrinsic motivation comes from outside the individual, and is based on

the external drives that make or force a person to act in a certain way. These specific aspects of school guide cognitive engagement (Ibid). An individual's response to a situation or an object leading to the arousal of desire constitutes his or her situational interest (Long et al., 2007). Personal and situational interest can be linked to lead to better AA. For instance, a student with a special interest in nature may find subjects related to animals and ecology enjoyable. Specifically, subjects such as biology, geography, and agricultural science may be interesting to such a student.

Singh (2011) describes SM as a kind of excitement that promotes determination and perseverance towards the attainment of personal and professional goals in life. It means performing an activity for its own sake because one finds it enjoyable or stimulating, which prompts the mastery of skills, the thrill of victory, and in some cases could lead to the fear of failure (Balarebe, 2002). A motivated child therefore strives to outperform others in the class, learn as much as possible, and prefers course material even if it is difficult to learn (Coetzee, 2011). This is arguably behind Gleitman et al.'s (2011) suggestion that extrinsic motivation reduces intrinsic motivation, most especially when the reward is tangible (e.g. prizes or money rather than praise) or given merely for performing a task (regardless of how well). They further stated that when extrinsic rewards such as praise are perceived as information, that is, as a means of giving positive feedback rather than as an attempt to control behaviour, they increase feelings of competence and intrinsic motivation.

In the area of tangible rewards affecting SM, family SES has been noted to play an important role because different things can motivate children from different SES backgrounds (Fan et al., 2013). For instance, biscuits and verbal approval for third and fourth-graders from middle-class families, and tangibles such as money for the children of low-income parents have been shown to be a source of motivation (Mayana, 2012). Furthermore, students whose parents engage more with the school exhibit a better attitude towards school, increased participation and fewer behavioural problems compared to those whose parents are less involved with the school (Fan et al., 2009).

However, Wigfield and Guthrie (1997) found that extrinsic motivation is moderately associated with intrinsic motivation because the most dedicated and capable learners have high grades. Although SM may be based on external factors such as peer influence, school facilities and location, these set the stage for intrinsic motivation to develop in individual learners. Both types of motivation are needed in school because they are the foundation for

future participation and high academic achievement; consequently, the relationship between motivation and AA is confirmed. This relationship is discussed in more detail in the next section.

4.4.1 The relationship between school motivation and academic achievement

School motivation (SM) has been reported to be positively related to students' AA (Ryzin, 2011; Wang & Holcome, 2010; Diseth & Kobbeltvedt, 2010). For example, Wang and Holcombe (2010) found that various features of school are related to students' performance. Those with positive perceptions of the school were found to engage more and have higher achievement than those that had more negative perceptions of and engagement with the school. A longitudinal study by Ryzin (2011) found a reciprocal relationship between school environment and AA. These findings demonstrate that students with high SM engage more and obtain better grades. However, the studies suggest that specific aspects of the schools promote motivation in the students. Some common areas identified include the school environment and facilities available to support learning. The second area is social relationships with peers and teachers, while the third is the goal orientations set by the students. As a result, theories and models have been used to explain each of these aspects of the school that lead to variations in students' performance.

The self-determination theory (SDT) highlights the importance of students' psychological need for autonomy through the exertion of a high degree of control over the choices that they make in order to earn better grades (Areepatamanil, 2008). This includes successfully taking on challenging opportunities, such as attempting and solving difficult tasks, taking leadership positions, and maintaining good and supportive relationships with other students, teachers and school administrators. Students without self-determination are described as helpless. They lack motivation in school and end up with low AA. This is perhaps the reason that students engage in difficult and challenging school activities to motivate themselves to work for good grades.

Ryzin (2011), whose study draws on SDT, suggests that the school environment serves as a protective factor to the students when it promotes better adjustment, autonomy and competence on their part. That is, students achieve highly when they perceive that the school environment offers them the opportunity to develop personal competence, autonomy and positive relationships with other people in the school (Wang & Holcombe, 2010). In this case,

the students perceive the school to be supportive of their needs, and this can, in turn, lead to more engagement and improved performance. Students' autonomy can be enhanced by developing better learning intuition and strategies to improve performance and this may lead them to engage less in disruptive behaviours. A conducive school environment therefore serves as an asset to the educational development of the students.

Similarly, Korir and Kipkemboi (2014) stated that the type of school attended plays a significant role in students' performance due to the provision of facilities that support a conducive atmosphere for learning. Class size and composition are identified as an important component of the school environment. Well-organised and small classes give students a feeling of safety and promote learning despite any differences in family background status. Well-arranged and decorated classrooms sustain students' interest in school and in lessons (ibid). This arguably will lead to a decrease in truancy and the dropout rate amongst students who generally dislike school.

Also, the availability of potable water and a sanitary infrastructure forms part of the school environment that is a basic requirement for students' use (Lawani et al., 2014). Lawani et al. (2014) demonstrated that schools in Nigeria lack a constant supply of pipe-borne water, as a result of which students must walk about 20 metres to a stream to fetch water for personal use. This contributes to poor hygiene and low performance. Tella (2007) argues that some learning difficulties are caused by a lack of adequate school facilities to enhance and advance students' performance, which constitute a hindrance to AA, especially among public schools in Nigeria (see Chapter 2.4). The inadequate toilet facilities in schools are among the factors that affect female school attendance (Maikudi, 2013).

Closely related to SDT is the need theory. This theory posits that people have certain needs that must be met if they are to progress. Maslow's hierarchy of needs provides a good grounding for this and other human needs by dividing them into the physiological needs, safety and security, love and belongingness, self-esteem and achievement, and self-actualization (Maslow, 1954). This hierarchy is critical to this study given that most parents in northern Nigeria are extremely poor and cannot even afford to provide food, shelter, clothing or shoes for their children. This is why many children beg from the age of three years.

Diseth and Kobbeltvedt (2010) in their study among Norwegian undergraduates, indicated that the goal theory is another important factor in the relationship between SM and AA. This theory describes the purposes that guide and direct students' behaviour and efforts towards

educational attainment. Student goal orientations can be broadly categorised into mastery and performance goal orientations (Wentzel & Wigfield, 1998). Mastery goal orientations are associated with competence, understanding and the completion of tasks, while performance goal orientations are concerned with competition in which students strive to outperform others and receive favourable judgement from other people (Wang & Holcombe, 2010). Students with the former are motivated through personal progress and adopt deeper learning strategies than those with the latter, who normally opt for less challenging tasks and surface learning strategies (Diseth & Kobbeltvedt, 2010). Research results provide more support for mastery goal orientation amongst students with high AA and SM than performance goal orientation (Wang & Holcombe, 2010).

Additionally, McInerney and Ali (2007) indicate that some students are motivated by social solidarity and extrinsic factors. Solidarity involves social relationships with peers and teachers in the school. Children share an amount of time together, and the association is based on marked preferences. Some of these include social behavioural outcome such as acceptance, rejection and offers of assistance (Wentzel & Wigfield, 1998). Some students derive joy from assisting others with school work, or working with peers on group discussions and assignments. Some may behave in certain ways to conform to a group or to not be rejected by peers. Some of these forms of socialisation can be either detrimental or beneficial to students' performance. Group socialisation theory proposes that students that have friends at school are better adjusted and happier than those who do not have friends (Harry, 1995). Students that are neglected often develop emotional and behavioural problems (Eysenck & Keane, 2010). Such group socialisation explains the different patterns of relationships among students as constituting variations in their experiences and expectations despite attending the same school. It also influences AA and SM.

Another important factor in SM and AA are pedagogical factors relating to teachers and their methods of teaching. This factor mainly encompasses classroom management and teaching practices (Wentzel & Wigfield, 1998). For instance, teachers that react negatively to failure can cause their student to adopt performance goal orientation while those that focus on students' personal improvement can influence the students towards mastery goal orientation. Also, a teacher that has solid knowledge of the subject matter, classroom management skills, and good teaching methods can increase the students' motivation, leading them to earn good scores in the subject. This is probably why students express the preference for certain teachers and subjects over others. In support of this, Areepattamannil (2008) reported that negative

teachers' attitudes towards students affect both their SM and AA. In her study, the students that perceived their teachers to be supportive and caring performed better than those who thought otherwise. Most of the students failed because they felt their teachers were unsupportive and controlling.

In summary, the general trend in the literature on SM in relation to AA is that different aspects of education contribute to SM, which influences AA. It shows that schools with good infrastructure have higher average AA. Students with mastery goal orientation have better work quality, set personal standards and develop self-regulated strategies compared to those with performance goal orientation. Social relationships in school were also shown to influence AA and SM. Students with good relationships with peers and teachers are better adjusted and could tend higher attainments on that basis. This study therefore explores these different aspects of the schools as aspects of school motivation, including school environment, students' social interaction with peers and teachers, and their goal orientations. The next section examines the measurement of school motivation by previous studies.

4.4.2 The measurement of school motivation

This section describes the instruments used by previous researchers to collect data on SM. As indicated in previous research, SM comprises various areas, and not all of these areas are covered in all of the studies. The areas covered are school environment, goal orientation and social relationships. This section presents those instruments used by some of the studies based on the aspects that they focused on. Diseth and Kobbeltvedt (2010) use academic motives and goals as aspects of SM. They adapt two standardised scales, which are the achievement motive scale and the achievement goal inventory. However, they reduced the number of items in the original motive scale from 30 items to 18, and in the goal scale from 18 to 12. The excluded items were deemed weak and inappropriate for reflecting their theoretical construct.

An inventory of school motivation (ISM) was developed and used by the McInerney and Ali (2007) to assess school motivation among students from different cultures in America, Asia, Africa and Australia. The items explored eight different areas of SM, including task, effort, competition, social power, affiliation, social concern, praise and token. The first three areas reflect goal orientation, followed by areas of social relationships, and the last two areas reveal extrinsic motivation, as deduced from the literature reviewed above (section 4.4.1). Although the study found invariance in the relationship between SM and AA, it argued that it provided

a theoretical structure and instrument for measuring SM. Subsequently, items from ISM were adopted by Yeung and McInerney (2007) for their study of Chinese students in which they found SM to relate to students' academic aspirations in high school.

Coetzee's study (2011) explored the relationship between academic motivation and AA of university students in South Africa. The study used the Academic Motivation Scale developed by Vallerand et al. (1992), which was based on the Self Development Theory. This tool has a 7 point Likert scale with options ranging from 'does not correspond at all' to 'corresponds exactly' on a continuum. Tella (2007), in a similar study measuring interest in school, utilised a 5 point Likert scale ranging from 'strongly agree' to 'strongly disagree', adopted from Osiki (2001) and Bakary (1977). McInerney and Ali (2007) items were also based on a five point likert scale, in which strongly disagree was coded 1 and the highest being 5 point for strongly agree. In all these studies, lower scores indicate low school motivation and the higher score reflect high levels of school motivation. Wang and Holcombe (2010) used both interviews and questionnaires to elucidate students' perceptions of their school environment and AA, which were the variables in the study.

Most of the scales used to measure SM in precious studies were noted to have been used by various other studies and were found to be reliable and valid measures of SM. Therefore, in line with the previous studies, this study adopts items from ISM regarding the aspects of social relationships and goal orientations. The other four items are taken from PSI concerning school items and performance orientations. Apart from these items from standardised instruments, a pilot study is conducted, as discussed in the next chapter.

4.5 Summary of the chapter

This chapter comprised a review of key literature on the conceptions of SC, LOC and SM. The review contains mostly Western literature with very little from Nigeria due to the dearth of studies in this context. The review focused mainly on the relationships between each of the conceptual variables and AA, based on the findings and theoretical concepts of previous empirical studies. There seems to be a consensus across the literature regarding the influence and impact of the three conceptual variables on academic achievement, specifically those students who had low SC, ELOC and low SM also had low levels of AA. Regarding SC, this study focuses on the academic aspect of SC, specifically in maths and English. Notably, the attachment of academic to SC and LOC to indicate specific aspect of the constructs is used in

this study to mean the same thing. Further reference will be made to the concepts as SC and LOC, with the academic designation implied so as to avoid monotony. The measurements of the concepts constitute part of this review to highlight some of the tools used by other scholars in order to select appropriate measure for the concepts in this study. These measures helped in conceptualisation of the concepts. Since there are developed questionnaires on the concept, this study thereby adopts the most widely used instruments on the concepts. The SDQ is found appropriate for these participants in establishing their SC, Rotter's internal and external scale for LOC and ISM for school motivation. Since the studies that adapted them were on likert point scale, most of which were 5 point, this study will have the items on 5 point in order to make it easier for the students answering them. Low scores will reflect low levels of the three concepts while high scores will indicate high levels of the concept such as high SC, LOC and SM. For LOC high scores are commensurate to internal LOC and SC and SM are the same as positive SC and SM. The next chapter describes the methodological approach adapted to conducting this study.

Chapter Five

Research Methodology

5.1 Introduction

Having reviewed the theoretical concepts of this study, namely self-concept, locus of control and school motivation, in relation with academic achievement, and the various measurement tools, this chapter discusses the research methodology and design. This involves a description of processes which illuminate the relationship between the conceptual variables (SC, LOC and SM) and academic achievement. The presentation of the methodological approaches to data collection and analysis provides a rationale for the chosen methods. This is informed mostly by the methodological concepts discussed by Creswell (2014), Cohen (2011), Bryman (2012) and Teddlie and Tashakkori (2009). The chapter begins by describing the research philosophy that underpins the study, the cross-sectional mixed methods research design, the selection of the sample, ethical considerations, the development of the instruments, the pilot study, and finally, the methods of data collection and analysis.

5.2 Research philosophy guiding the study

In conducting social science research, it is important to have a thorough understanding of what one is trying to achieve and of the most appropriate methods of data collection and analysis (Neuman, 2000). Bryman (2012) suggests that research procedures and instruments reflect the researcher's particular visions of the world and how he or she come to know the world. In other words, a researcher's philosophical outlook plays a significant role in determining the methods he or she adopts to guide the study (Wilson & MacLean, 2011). To Cohen and Duun (2011), this involves a consensus of pursuing and arriving at knowledge, which includes what and how problems are investigated to arrive at solutions.

The major philosophical groups in the social sciences are positivist, interpretivist or constructivist and critical theorist (Denccombe, 2010). The differences between these groups are based on their ontological and epistemological stances regarding what constitutes valid knowledge and ways of enquiring it. Ontology refers to social reality while epistemology is the process of knowledge acquisition (Basil, 2010). This can be interpreted to include what constitutes valid knowledge, and the ways of discovering and explaining it. The positivist

philosophical paradigm is that information is derived from logic, mathematics and experience, which is what constitutes valid knowledge (Macionis et al., 2012). Their mode of enquiry involves quantitative research methods, where laws are established scientifically through observation, theory development, hypothesis formulation, experimentation, comparison and making predictions (Wilson & Maclean, 2011). This makes investigation easier across large groups of subjects, while at the same time, through quantification, the result can be analysed statistically and later generalised. The positivists are, however, criticised heavily for their objective views of reality as empirical evidence without considering subjective feelings that participants may attach to the phenomenon. The positivists believe that human feelings, meanings or views are inner attributes which are not measurable, and therefore should not be considered. This absolute objectivism is rejected by some social scientists who describe themselves to be post-positivists. Among them are Feyerabend (1975) and Popper (1957) who believe that scientific knowledge should not be restricted and should include inductive reasoning through establishment of theories and hypotheses.

The constructivist and interpretivist paradigms are the second group which emerged in response to the limitations of positivist philosophy. This philosophical stance is based on the construction and interpretation of meaning based on human experiences and perspectives (Crotty, 1998). Their ontology is subjective multiple realities based on individuals' social interactions. People can attribute different meanings to a single phenomenon depending on their interpretation of the situation. Such research usually has a narrow focus on a specific context in order to understand issues related to the historical, social and cultural settings of the participants (Creswell, 2014). Researchers adopting this philosophy form part of the research process, as their knowledge and experiences inform the interpretation of the data. Interpretivists use qualitative approaches and inductive processes for generating meanings through the methods of interview, participant observation, ethnography, and case study as modes of inquiry.

Critical enquiry is the third social science philosophical perspective. This school of thought challenges and deconstructs the traditional perspectives on social realities of the positivists and interpretivists. To researchers adopting critical enquiry as their guiding philosophy, the positivists' objective reality is seen as too technical and restrictive of social phenomena, while interpretivism is considered too subjective since its approaches rely solely on hermeneutic aspects of society (Basit, 2010). Social reality, in this view, is partially voluntaristic and deterministic due to advocacy for change, emancipation and empowerment of the

disempowered who face inequality and discrimination in the society (Neuman, 2000). This leads to disentanglement of allegiances to particular paradigms but rather encourages their union and engagement due to the belief that people are restrained by historical events, materialism and culture (Denscombe, 2010). This constrains people and their relationships in a way that could hinder creativity and innovations.

In relation to research, critical enquiry methodologies are pragmatic and highly individualistic (Creswell, 2014). To the critical realist, any method can be used to solve problems depending on the researcher and the social phenomenon. After all, 'not all quantitative approaches are positivist' and not all qualitative approaches are interpretivist because social reality is not exclusively objective or subjective but a mixture of the two (Cohen & Duun, 2011:21). Feminism, racism, post modernism, and post structuralism are all philosophical perspectives of critical enquiry due to the nature of advocacy.

Based on the assessment of the different philosophical views, each seems to have stances that are appropriate for aspects of this study, which seeks to investigate SC, LOC and SM in relation to students' AA. The positivist paradigm is useful for investigating the relationship between variables. However, because students in NN are failing to earn the required minimum result on standardised exams, there is the need to also obtain the participants' subjective views on the concepts under investigation. This is especially important for those students who exhibit unexpected patterns, such as the over- and under-achievers (See Chapter 8.4 & 5). Consequently, this study can also be situated within the critical theory paradigm due to its emphasis on yielding solutions to the prevailing problem rather than being preoccupied with particular views or methods (Creswell, 2012). The critical theorist mode of enquiry pragmatically adopt what works rather than aligning strictly with any particular paradigm and encourages a combination of methods irrespective of the philosophical views that the researcher finds useful (Bryman, 2012).

Thus, in line with the pragmatist theoretical stance, this study adopts a mixed methods approach that combines both quantitative and qualitative methods of data collection and analysis. The justification for this is that it draws on both the positivist and interpretivist views of social reality as singular and/or multiple, which can be objective and/or subjective. It enables the researcher to mix methods in a way that yield answers to their questions. Mixed method approaches allow research to be carried out and presented in numeric and narrative form; statistical analysis is integrated with thematic data analysis in order to obtain answers

to the research questions (Teddlie & Tashakkori, 2009). Although several related studies carried out in Nigeria (Ajayi et al., 2012; Tella et al., 2012) employed the positivist approach of using questionnaires, this method did not provide the richness of in-depth data regarding the educational experiences of secondary school students that interviews allow. Thus, the pragmatic approach of utilizing both questionnaires and interviews has been selected, in order to glean a more comprehensive view of the problem.

Bryman (2012) noted that arguments have been made against the combination of quantitative and qualitative research methods, some of which assert different philosophical paradigms are incompatible with regard to their different ontological and epistemological commitments. They each have a different procedure, design, instruments, data collection, analysis and interpretation. Nevertheless, despite these opinions, numerous investigations (Creswell, 2005) have indicated that a mixed methods approach can be advantageous over either strictly quantitative or qualitative methods because the limitations of one are compensated by the strengths of the other. In other words, the quantitative and the qualitative data derived from mixed methods research illuminate each the other (Bryman, 2008), and consequently offer a more comprehensive understanding of the phenomenon. Moreover, an increase in the use of mixed methods by researchers has diminished the paradigm debate over the years (Teddlie & Tashakkori, 2009).

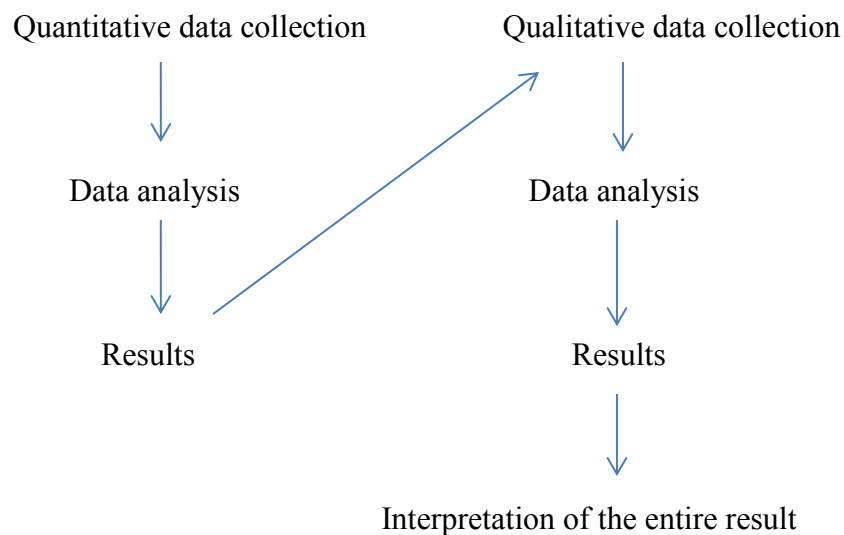
5.3 Cross-sectional survey research design

Given the philosophical stances of the various paradigms presented above, a cross-sectional survey design with a mixed methods approach to data collection is adopted for this study. A survey entails gathering data using questionnaires or interviews with a defined sample in order to generalise the results to a wider population (Corbetta, 2003). It is usually synonymous with cross-sectional design as it is used to gather information at a single point from a representative sample in order to examine relationships between variables, unlike a longitudinal design that measures changes over time (Bryman, 2012). The survey approach has been deemed appropriate for this study as it allows the use of self-reporting questionnaires and semi-structured interviews to capture participants' experiences, knowledge and opinions. In the case of the interview, Bryman (2012) noted that relationships can be gleaned through the choice of language. Thus, both qualitative and quantitative methods are used to determine the

relationships between the variables without any manipulations that might cause harm to the participants, as in the case of experimental design.

Also, the use of more than one method for data collection and analysis enables the study to refer to different sources for evidence in the exploration of the phenomenon of students failing to earn adequate achievement scores on the examinations. In this regard, the study employs a sequential mixed methods approach to data collection process and analysis. This process is shown in figure 5.1 below.

Figure 5.1 Explanatory Sequential Mixed Methods



(Source: Creswell, 2014: 224)

Figure 5.1 shows the design frame to illustrate the sequence of the research process. In the first phase, quantitative data is collected and analysed, followed by the second phase, which consists of interviews with selected students based on the results of the questionnaire analysis. Despite the rigorous process of data collection in using two different instruments and an unequal number of respondents in each phase, this is found to be the most appropriate method for this study in answering the research questions, than either of the two methods alone. The aim is to compensate for the weaknesses of each of the methods by the other and to obtain comprehensive insight into the problems. The next section discusses the principle means of data collection.

5.4 Research instrument

The research instrument is the device used for data collection in a study. Fraenkel and Wallen (1990) recommend that research instruments include, among other things, consideration of location, time, frequency and sufficiency of method of administration, in the absence of which a good instrument would yield useless data. The choice of instrument is guided by the type of study being conducted and the research questions (Clark-Carter, 2001). Clark-Carter (2001) suggests adapting established tests for measuring peoples' personalities or attitudes, and only developing new ones if there are no existing tools in the area. This study therefore adapt standardised questionnaires for the first phase of data collection to survey the students. The second phase consisted of semi-structured interviews based on the participants' responses to the questionnaire.

5.4.1 The survey questionnaire

The questionnaire is the primary means of data collection in this study. Self-completion questionnaires, i.e. those which the respondents fill out themselves, were administered. This type of questionnaire usually contains sections on the respondents' demographics in addition to behavioural and opinion questions. The demographic questions elicit respondents' characteristics, such as age, gender and income level, where relevant, while behavioural questions probe habitual activities such as when and how often people perform particular acts and opinion questions to inquire about the respondents' beliefs or attitudes (Clark-Carter, 2001).

Accordingly, three techniques have been applied to attitudinal scales to demonstrate the degrees of difference in participants' responses (Cohen & Duun, 2011; Clark-Carter, 2001). These are the Thurstone, Guttman and Likert scales. The Thurstone scale is the type that comprises statements which respondents are expected to rank in order of importance. The Guttman scale includes two dimensional options, such as yes or no; agree or disagree; statement 1 or 2. The Likert scale has multiple dimensions of possible responses. Clark-Carter (2001) recommends 5 and 7 point scales because he feels that fewer points would preclude the range of possible attitudes amongst the respondents, while more points would require a greater level of precision and perhaps too many possible alternatives. Also, short forms have a higher response rate, since it would take the respondents less time to answer the questions (Bryman, 2012). Bryman (2012) therefore recommends abbreviations and

vertical formats with accompanied explanations, which have the advantage of facilitating coding.

The self-completion questionnaire is noted to have been criticised by researchers for being too structured and not providing the opportunity for probing to obtain additional information (Cardwell & Flanagan, 2008). Also, the respondents remain anonymous, and illiterate people cannot participate through this medium (Bryman, 2012). Despite the disadvantages attached to the questionnaire instrument, it is a suitable method for collecting attitudinal data of this nature. Moreover, it is the most frequently used data collection strategy in psychological research (Clark-Carter, 1998) and among studies that have explored the concepts of SC, LOC and SM (Pinxten, 2015; Huizing, 2015; Wang & Holcombe, 2010).

5.4.2 The questionnaire structure

The questionnaire is designed to collect data on SC, LOC, SM and background factors. This section describes these different segments in detail. The sample questionnaire which appears in the appendix (1) contains six pages. The first page is the introduction, followed by 4 sections containing questions on the constructs. Each section has clear instructions for the students regarding the purpose and focus.

Self-concept

The first section (A) of the questionnaire contains 20 items adopted from the Self-Description Questionnaire II (SDQII) developed by Marsh (2003) and colleagues to measure English and mathematics SC among adolescents (see chapter 4.2.2). The reason for selecting only 20 items out of 130 from the original scale is based on the focus of this study, which is on the academic aspects of SC, specifically English and maths SC, and not general SC. The subjects have 10 items each. Based on several studies (e.g. Marsh and Yeung, 1997), Marsh and colleagues suggest that research measuring academic SC should be domain specific, since specific aspects of SC correlate more highly with corresponding AA. That is, in this case, maths SC with maths scores, and English SC with English scores. The scale has been widely used and is reported by many scholars and researchers to have high validity and reliability values. Both the pilot study and the main study show a validity and reliability

range of not less than 0.71 and 0.76, respectively. Examples of the items include ‘maths is one of my best subjects’ and ‘I am not very good at reading’.

Locus of control

There are 10 items for LOC, which are adopted from Rotter’s scale. Only items related to students’ academic performance are selected. Providing support for the alternative causal dimension scale CDS, Russell (1982) argued that Rotter’s I/E scale was too general for academic contexts, and that it is better to focus on specific areas. However, in addition to being an old, widely used scale for measuring LOC, Rotter’s scale relates appropriately to the focus of this study in identifying the students’ LOC as either internal or external. The study selected five (academically related) statements that indicate internal LOC and five for external LOC from the scale, along with a five point Likert scale instead of the paired options of the original scale. Examples of the items include: ‘If I put in enough effort, I can succeed in my school work’ and ‘it is almost useless to try hard in school because other students are just smarter than me’. The items were validated by experts in the field, including this study’s supervisor. This process yielded Cronbach alpha validity and reliability values of 0.78 and 0.81, respectively. These values are similar to Rotter’s validity and reliability values of 0.7.

School motivation items

The SM items were taken from the Programme for International Student Assessment (PISA, 2012) and the Inventory of School Motivation (ISM) developed by McInerney and Ali (2007). This was to explore the various aspects of the school that constitute motivation for the students. The items include aspects of school facilities, relationships and goal orientations (see chapter 4.4). Both scales are widely used instruments, appropriate for the respondents’ academic level. Examples of the items include: ‘I do my best work at school when I work with others’ and ‘if the class is small, I can follow lessons more easily’. The design of questions for the three conceptual variables (SC, LOC and SM) included a five point Likert scale in vertical format, as recommended by Bryman (2012), and which is easier for respondents to answer.

Demographic factors

This section is the source of data on the students' background factors. It includes the students' names, which are used to identify their achievement scores and to contact those who were eventually interviewed in the second phase of the data collection. The second item, date of birth, is included to enable an exploration of deviation from the expected mean age, which is 15 years. Other items include specification of gender, ethnicity, language spoken at home, parents' level of education and professions. Some of the issues that arose with the questionnaire are discussed in the next section on the pilot study.

Piloting the questionnaire

The pilot study is a significant aspect of the research design process, as it allows the practicability of the instrument to be tested and the validity and reliability of the items to be determined (Cohen & Duun, 2011). This process involves assessing the clarity of the items, eliminating ambiguities, identifying omissions, evaluating the comprehensibility of the instructions and obtaining general feedback (Bryman, 2012). Although most of the questions were adapted from standardized scales, a pilot was conducted to ascertain its fitness for the study. Also, considering the low levels of the students' academic ability, it was deemed important to prepare the instrument before the final fieldwork and to amend some of the issues that might arise.

The pilot study was conducted after obtaining ethical approval for the procedures. It involved 90 students from three schools in Kaduna metropolis which were not part of the main study. Clark-Carter (2001) noted that a smaller sample is adequate for using existing questionnaires, while Nworgu (1991) maintained that pilot studies are usually done with a small number of participants under similar conditions as in the fieldwork. The items that were unclear or otherwise problematic for the students were clarified and noted. These included questions related to the meaning of 'tertiary' in section D, number 8. The statement in section B, number 7, and two typographical errors in section D, numbers 2 and 4 created confusion. Also, on the parents' main job, the options were not exhaustive, and therefore it was decided to remove them and leave an open space for the students to specify the places where their parents work, the nature of the job and their positions in the organisations. Overall, the pilot study revealed that the questions were easy to read and the students were happy to be part of a study that involved them by a researcher from the UK. See appendix 1 for copy of the questionnaire. Descriptive analysis was conducted to test the internal reliability of the items and validity to

ensure item accuracy. The results showed high values of 0.72 and 0.70 for reliability and validity to indicate that the items were adequate measure of the concepts used in the study.

5.4.3 Academic achievement scores

Academic achievement as a measure of students' educational goals and accomplishments in schools comprised of different measurement forms. In view of previous studies explored in this study in relation to the conceptual variables, AA measure mainly used is the school grades. Pinxten et al. (2010) whose study on SC and AA relations among Belgian students from grades 7 to 12 aimed to clarify appropriate measures for AA stated three types of AA indicators as appropriate. These include 'school grades, standardised test scores and teacher ratings' (Pinxten et al., 2010: 691). The result in their study indicates slight differences between standardised test and teacher ratings in the AA models. They therefore conclude that any test can be used for AA in research study of the relationship between SC and AA. Moller and Pohlmann (2010) argued that teacher made test are important indicators of AA since it form a frame of reference to the performance of other students in the class. Marsh and Hau (2004) found support for students' frame of reference as important factor on both subsequent performance and SC. Marsh (1987) considered teacher made test to be more specific measure of AA that correlates more with personality variables than standardised tests. This is because standardised tests are found to be more stringent than teacher or school made tests. The use of the students' GPA scores is less inclined than school grades, it is still better than standardised test. He therefore concludes that since standardised tests may overestimate or exaggerate students' performance, as a result will not correlate highly with the conceptual variables. Instead, school grades or teacher made tests are better utilised.

To this regard, this study utilised the students' AA scores from their school records. These are the average scores of each student on the end-of-year examinations in English and mathematics. The score in each subject was graded 100%, of which 40% was based on continuous assessment and 60% on the examination results. The two scores were obtained for each student and the average was taken as their AA. Although the test items differ in the schools, they were derived from the same curriculum and moderated by the state ministry of education. This is to ensure that similar constructs were thought to students across the schools. This results form part of the 40% cumulatively at the end of secondary school level that forms part of the standardised achievement test for the students' AA. It was for this reasons that the

scores for the AA was found adequate for the study and no other tests were used specifically for the study.

5.4.4 Semi-structured interviews

In addition to the large scale perspective offered by the questionnaire, semi-structured interviews were used to investigate possible causes of variations in the data and to supplement the findings from the questionnaire. Interviews bring the researcher closer to the respondents and allow for exploring participants' attitudes, beliefs, opinions and preferences, unlike the questionnaire, which maintains a degree of distance between researcher and respondents (Bryman, 2012). Semi-structured interviews occupy the middle position between the structured interview, where responses are highly controlled, and an in-depth interview where responses are open-ended to a reasonable extent. It is a flexible tool for data collection in the form of conversation, wherein the questions are predetermined but can be modified depending on the responses of the participant, unlike structured interviews (Robson, 2011). It was considered age appropriate for use among the secondary school students who were mostly in their mid-teens.

Similarly, the sample was purposively chosen because of the specific issues leading to their levels of AA, which are discussed in detail in the next section. As a result, the questions for each participant varied depending on the context of their involvement, although some of them were based on issues relating to the conceptual variables, such as aspirations and factors that influence school performance. Clark-Carter (2001) suggests that since the quality of information depends mainly on the interviewer, he/she is obliged to motivate the participants in order to reduce the interview effect while establishing an effective rapport. Therefore, it is important for the interviewer to structure the questions in a way that the participant can understand in order to obtain adequate responses that are accurate and easy to analyse (Bryman, 2012). For this reason, the questions were formulated around the factors that influence students' AA to investigate some of the problems hindering their performance in school.

5.5 Obtaining the study sample

Having stated in the last section that a survey design is useful for investigating and establishing characteristics of a group of people, it is suggested that data can be collected from a

representative sample since it might be impossible to sample the whole population (Bryman, 2012). For this reason, it is important that the chosen sample have characteristics that match those of the general population, so that the results can be generalised (Cohen & Duun, 2011). Kaduna state in NN is selected as the research site because of its heterogeneous composition of people, which reflects the population of the whole north of the country (see Figure 1.5).

Kaduna State is divided into three education zones, north, central and south. The same zones are used in this study, and five schools each are selected from the three zones, totalling fifteen participating schools. In selecting the schools, consideration was made for having an equal number of schools from each of the educational zones, as well as for gender based type of schools and the location of the schools. However, there are more single sex schools in the central and northern zone, which is reflected in this selection. This may be because the areas are Muslim-majority and consequently, gender segregation is more prevalent compared to the southern zone. Overall, five schools each were girls only, boys only and mixed. There are 4,901 SS1 students in the schools.

In addition, 10 of the schools were in urban areas while 5 were in rural areas. This was because there were more schools in urban areas than rural areas. Although the students were the unit of sampling and not the schools, their selection reflect the size and type of school in the locality (Smith, 2002). The reasons for this selection are representation and the pragmatic reasons of convenience, proximity to the researcher's own school, cost, and safety due to the insurgency in the north eastern part of the country (e.g. Boko-Haram).

The sample comprised of 1,227 SS1 students who participated in the survey, which amounts to 25% of the student population of SS1 students from the selected schools. A systematic sampling technique was used to select the sample from the schools. Specifically, every fourth student was selected to participate from a list of SS1 students in the schools. A proportionate sample of respondents was obtained based on the population of the students at the schools. Table 5.1 shows a list of the schools, the population and the sample sizes from the three educational zones in the state. The response rate was a hundred percent. See Table 5.1 for the list of students, the type of schools based on gender, population and sample size from the 15 schools.

Table 5.1 List of schools and the sample

Name of school	Students	Population (N)	Sample (N)
Central zone			
<i>Hauwa College</i>	Girls	329	82
<i>Mainuna Secondary School</i>	Girls	336	84
<i>Rakiya Government Secondary School</i>	Mixed	284	71
<i>Teamfat Secondary School.</i>	Girls	385	96
Waziri Day Secondary School	Boys	380	95
Northern zone			
<i>Layi International College</i>	Mixed	284	71
<i>Zainab Grammar School</i>	Girls	280	70
<i>Ayizuruq Girls' College</i>	Boys	356	89
<i>Isadam Memorial College</i>	Boys	232	58
<i>Tamadina College</i>	Boys	268	67
Southern zone			
Jimada Memorial college	Mixed	264	66
<i>Sallykub Secondary School.</i>	Girls	260	65
<i>Sardauna Academy</i>	Boys	420	105
Galadima Grammar School	Mixed	368	92
<i>Maryam Tetengi Secondary School</i>	Mixed	455	114
Total		4901	1227

The sample for the interview phase is derived from the results of the questionnaire analysis and it is discussed in the result section (See chapter 8.4 & 5). The interview did not require a large sample of respondents in the study, since the aim was to explore some of the factors that influence the students' performance, to further explain some of the surprising findings in the survey. Purposive sampling is the most appropriate sampling strategy in this situation (Wilson & Maclean, 2011). Thus, the 20 students with the highest residual values were invited to participate in the interview. They are the students whose scores identified them as either underachievers or overachievers in the AA model due to their extreme scores on the variables and AA. Hence, an examination of their profiles indicates the variables that impacted their

residual positions to reveal some of the factors that have both positive and negative effects on their AA. The process used for selecting the students for the interview is explained in Chapter 8.4, Tables 9.1 and 9.2 contains the profiles of the 20 students. Having described the study's sample, the next section discusses ethical considerations and access to the schools and the students.

5.6 Ethical considerations for research involving students

There is growing concern about ethical issues that could arise at different stages in the research process, which might constitute harm to the participants (Bryman, 2012). Assurance must be made for the dignity and safety of the respondents during and after the research process (Cohen, & Duun, 2011). Noting this importance, efforts were made to ensure that ethical concerns were addressed appropriately. This requirement is especially critical for this study as the participants were children around the age group of 15 years, which is deemed a minor age group of school children. The respondents were informed of their rights to either participate or withdraw, without any compulsion, at any stage of the research process (see appendix 1).

Ethical approval was sought and obtained from the University of Leicester's ethical board before proceeding to the next stage of gaining access to the students, which was achieved through the Kaduna State Ministry of Education. There also, ethical concerns were addressed, and letters to the three educational zones in the state were obtained granting permission to access the schools in each of the zones (See appendix 6). Letters were then provided from the zones to each of the schools at different times after numerous visits to the zones. Only then were meetings arranged with the principals of the schools. The study was conducted with the framework of the three organisations. All of the schools were approached in person for appointments, with the letters from the zones and the Ministry as well as the researcher's school identification card. Some schools were visited many times than others, especially when the principals were not on school premise at the time of the initial visits. In all of the schools, the researcher was introduced to the class masters, who provided the SS1 students' list from which the sample was selected and arrangements were made with the students. The teachers usually leave the classrooms after introducing the researcher.

Informed consent was sought from the students to show their willingness to participate in the study, as this is part of the University of Leicester's ethical requirements for research. Their

framework is similar to others, such as BERA ethical guidelines (2011) and the UK Data Protection Act (1998). As part of introducing the researcher and the study, the students were given a full disclosure about the purpose of the study and how they fit in so as to avoid deception and any form of harm (Bryman, 2012). They were also informed of their rights to participate and withdraw at any stage during the process and were given time to discuss their participation with their parents or friends before filling out the questionnaire on the day that it was administered to them. All of the students showed that they were interested, and the questionnaires were administered to the students and were then collected. Students were instructed to read the consent form attached to the questionnaire before filling it out to ensure that they were not taken for granted and indeed willing to participate. At the end, some of the students expressed happiness at having been chosen to participate in the study. All of the students filled in the space at the end of the questionnaire indicating their desire to participate in the interview if selected.

For purposes of confidentiality, the students were informed that the information they provided would be kept confidential and used only for the purpose of this study. They were also told that anonymity will be adhered to at both stages of the data collection processes. During the survey, only their name was requested so as to be matched with their achievement scores in the school records and to identify those that would be selected for the interviews. Permission was requested to tape record the interviews with the students, and all except one obliged to be recorded. One student preferred to be interviewed in Hausa, and this interview was later transcribed and translated into English by the researcher, which helped to protect the information from third parties. The next section details the procedure for data collection.

5.7 Procedure for data collection

Procedures for data collection vary depending on the type of instrument used. However, Creswell (2005) suggested that standard procedures should be followed in order to avoid bias in the study, thereby helping to keep the process on track. Based on the study design, a mixed methods approach to data collection and analysis was adopted in two phase sequence. The first phase involved the administration of questionnaires to the students to gather the data on SC, LOC, SM and demographics. This was followed by the second phase, which is the interview with selected students.

In the first phase, the class teachers normally introduced the researcher and invited the researcher to address the students. In eight instances, the researcher had the privilege of

meeting with the students before fixing the date for administering the questionnaire, normally the following day. At all of the meetings, the introduction involved explanations of the purpose of the study, reasons for their involvement and the voluntary nature of their participation. Assurances were given of the confidentiality of their responses; the introductory section was usually read to them to impress the voluntary nature of their participation. They were always advised to read and understand the instructions before answering the questions in each section and to ask questions to seek clarification. The questionnaires were then distributed to the students to fill out and return to the researcher. At the end, the subject teachers also provided a record of the students' achievement scores. All of the questionnaires were returned. Only one student was absent from school on the day of the survey, and she filled out and returned the form a week later.

The second phase followed the analysis of the questionnaire. Twenty students were interviewed from 12 schools. The interviews started 3 weeks after the questionnaires had been administered due to the time spent coding and analysing the results. A list of the students was prepared and the factors that influence the residual position of their AA were identified during the analysis. This indicated their status as underachievers or overachievers. The interviews were carried out face to face with each of the students and lasted twenty to thirty minutes each. All except one was audio recorded. The process took two weeks to complete because the students were in 12 different locations.

5.8 Method of data analysis

This section discusses the method of data analysis of both questionnaire and the interview data based on the sequence of data collection process.

5.8.1 Quantitative method of data analyses

The items for the conceptual variables (SC, LOC and SM) were coded on a five-point Likert scale, as described in chapter four. The coding enabled the students' scores for the conceptual variables to be determined. Establishment of the conceptual variables follow similar pattern of operationalisation of the concepts by some of the previous studies (Arens et al., 2016; Mei-me & Chiung-mei, 2009; McInerney & Ali, 2007; Guay et al., 2004). See Chapter 4 on the measurements of SC, LOC and SM. The items were designed in a likert form to show the

intensity of the students responses in a linear direction, from strongly agree to strongly disagree with the assumption of measuring the concepts for the study. Brown (2011) indicated that they can be analysed in the form of an interval scale beyond the descriptive analysis of mean and standard deviations to inferential statistics including correlations, ANOVA, multiple regression analysis and so on. Similarly, Gorard (2003) noted the differences between the intervals of the numbers may not be the same such as 1 and 2 with agree and disagree, there is no harm in treating nominal measures as continuous in such a case as the likert items to show levels of opinions or attitudes of people.

To this regard, 50 was used as the highest score for each of the student's responses on the concepts, while ten was the lowest. Therefore, any student that scored between 20 and 10 was classified as low on the concept, and those with 30 and above were designated as having high scores on the concept. Thus, a student could have high or low SC, LOC and SM. A low score on SC and SM is similar to having negative SC or SM, while a high score is similar to having positive SC or SM. For LOC, students with low scores are classified as externals and high scores indicate internal LOC. The AA scores for the students are on the measure of a percentage score which is an interval measure of the students' performance in maths and English, as described above. The scores are provided by the schools records and are used as provided in the study.

Analysis of the data was in three stages. The first stage involved analysis using the descriptive statistics; this shows the percentage distribution of the students' scores from the schools for all the variables. The second stage was the bivariate analysis of the variables. This includes differences of the mean scores, standard deviations and effect sizes to determine the relationship between the background factors and the three conceptual variables, with AA. The second part of the bivariate analysis examines the relationships between AA and the conceptual variables. A correlation analysis is then used to present a summary of the relationships between all of the variables and AA before using some of them in the AA model. The construction of the multiple regression model is the final stage of the data analysis of the questionnaire.

5.8.2 Qualitative method of data analysis

The interview data comprises the main qualitative data generated for the study, together with the short notes that were made based on observations of the schools visited. The interviews

were transcribed verbatim. The data was then displayed and similar themes were pulled together. The results of the questionnaire helped to prepare the grouping of the students, based on the issues that influenced their AA. These issues mainly revolved around the conceptual variables. The coding was done, and the themes were identified from the transcripts. The major findings are presented in subsequent chapters in line with the discussions and interpretations in the literature. Conclusions are drawn which link the themes together.

5.9 Conclusion

This chapter described the methodological approaches adopted for this study. The purpose was to justify the methods and the process of data collection and analysis that were theoretically derived. To this end, the discussion centred on the philosophical underpinnings in which was shown that it aligns more to the perspectives of the critical research philosophy that allows the use of any method that could lead to identification and solutions to phenomenon that being studied. This influenced the design and the research methods. Some of the discussions featured the development of the instrument, the selection of participants, ethical considerations, procedures for data collection and analysis. This chapter is followed by the presentation of the empirical data. The next chapter presents the percentage responses to provide a description of the students and their schools.

Chapter six

The Students and their Schools

6.1 Introduction

Chapter five discussed and described the methodology adopted for this study. This includes the sampling, instruments, methods of data collection and analysis. This chapter presents the results of the data analysis based on the responses of participants from the various schools. The aim is to describe the sample in terms of the main variables that are of interest in this study. This is to show the variability in the responses for each item in the study before any statistical analysis is applied (Nardi, 2003). The first part provides an overview of the fifteen schools from which data were obtained. The second part presents the descriptive analysis of the data on the background factors of age, gender, ethnicity, language spoken at home and parental educational level and main job. The third part is the presentation of the responses regarding the conceptual variables of SC, LOC, SM and AA. The final section presents the distribution for the conceptual variables for the different type of schools.

6.2 Description of the schools.

The brief description of the schools in this section is to add to the context of the study. The selection of different types of schools was to reflect the various types of schools in the area. All the schools were approached with a letter from the Zonal Educational Boards (which the schools were under) and a permission letter from the State Ministry of Education for conducting the study in the schools. There were three Educational Zonal offices and they were in charge of the schools in their respective education zones in the state. All of the contacted schools agreed to participate and assisted in the administration of the questionnaires and the interview process. The information on the schools presented in this section was based on observations, field notes, information acquired during the negotiation of access to the participants, and some were based on the responses by the participants. The reason was to provide a brief description of each school along with pertinent data on the characteristics of the students in the schools. For ethical reasons, all of the school as well as the participants are identified using pseudonyms and numbers. The percentages were for those that participated in the study, it did not include all the students in the year group or all the students in the schools.

School 1 - Hauwa College. This was a single sex girls' secondary school in Kaduna South Local Government Area (LGA) within Kaduna metropolis. The school was established by missionaries during the colonial era in the 1940s. It was a boarding school that was well equipped with computers and adequately furnished classrooms. Due to the school's above-average facilities, it was used as a centre for some external examinations, such as the university matriculation exams (UTME), TOEFL tests, and 'A level' GCEs. During the survey for this study, the UTME was in progress, as evidenced by the large number of candidates seen in the school. Despite the quality of the school's facilities, more than half of the students had low academic performance according to the school records used for this study. The campus was large and well-kept, with trees all over. One of the students in the sample was absent due to ill-health at the time the surveys were administered, so her questionnaire was delayed but filled in a week later when she returned to school. She happened to be one of the students that were interviewed from the school. At the time of my visit, the students were lined up in the cafeteria waiting to be served breakfast.

School 2 - Mainuna Secondary School. School 2 was a girls-only school located about a mile from the Kaduna River in the central part of the city of the same name. Forty one percent of the respondents from this school indicated that they spoke English at home, which constitutes 11% of the total for the sample (See table 6.8). This is not surprising given that 72% of their fathers attained tertiary level of education and 47% of their mothers. The school is located in a Muslim dominated community, which explains the use of Hijab (Islamic headscarves) by most students. The school has the lowest percentage (32%) of Hausa speakers and the highest number of students from other minority (56%) ethnic groups than any of the schools included in this study. The average teacher-student ratio was 1:67, which is higher than the given 1:40 as the national standard (UNESCO, 2013). It took four visits before the questionnaires were administered. Most of the students did not return to school in the first week of resumption because of the general election in the country. There was tension as people feared that there might be post-election violence. As a result some parents did not allow their children to resume on time until they were sure that the uncertainty was over. The academic record indicated that about 52% of the samples scored above 50% pass mark in maths and English. This school had some of the youngest students, as the average age of the respondents was 16 years compared with the whole sample.

School 3 - Rakiyad Government Secondary School. This is a mixed school, located in a suburb of Kaduna town. There were more average and high-achievers than low ones according to their academic records. In addition, 32% of these students' parents (both mothers and fathers) were self-employed, while 56% of the fathers had attained tertiary education. This group of parents should therefore be able to provide better facilities and more academic support for their children. Sixty-seven percent of the students here spoke Hausa at home compared to 21% who speak English at home. During the survey the Vice Principal Academic was present and ensured that, the teachers assisted with the identification of the sample. This is because the students were selected from the list of students in the school. A student was selected out of every fourth child on the list. The total of 71 students participated in the study out of 284 SS1 in the school. The questionnaires were all completed and returned immediately.

School 4 - Teamfat Secondary School. Teamfat was a boys' school located in the central part of the town. It has a high percentage (46%) of educated fathers having higher than secondary level education and a large Hausa ethnic group that spoke English at home. The students have the highest percent of fathers (22%) who were professionals working with private organisations. Also, over 60% of the students were above average achievers. The school is newer than most schools in the town.

School 5 - Layi International College. This was a girls' boarding school situated in a suburban settlement in the second largest town in the state. Despite it having the largest number of female respondents in the girls' school category for the study, it had the lowest teacher-student ratio of 1:54, among the schools sampled. Their achievement records show wide variation but generally more average scores. The three major ethnic groups were well represented with other ethnicities comprising less than one percent. Thirty eight percent of their mothers attained a secondary school certificate and were engaged in skilled jobs (30%) whereas 50% of the fathers had tertiary education and 35% of them were self-employed. I was not initially granted access to this school; the vice principal asked me a few questions and requested that I come back the following week because the students were on an excursion. I left a copy of the questionnaires for the principal to go through. The following week, I went back as agreed and the questionnaire was successfully administered for all the samples from the school.

School 6 - Mainasara Grammar School. This was a mixed school situated in a village of Makarfi LGA. The school compound was neat and tidy although 2 classrooms were abandoned due to a fallen roof and had not been repaired for some time. All the students wore school uniforms but only a few wore shoes and most wore slippers and palm sandals. Although most people in the area were known to be subsistence farmers, the respondents indicated that 39% of their fathers are skilled workers and 47% of their mothers were housewives. This meant that most of the people turned to learning skilled works; there by abandoning farming that was known to be their major occupation. Achievement records showed that they were average students. The teacher-student ratio was 1:63, according to the principal. More than half of the teachers were newly graduated corps members doing their one year of service. Once they finish their service year, many subjects were left with no one to teach them, unless they are lucky enough to have new corps members.

School 7 – Ayizuruq Girls’ College. This was one of the few Federal Government Colleges in the area, established by the federal government to encourage girls’ school attendance due to the religious segregation by gender in the region. The school had an old look but was actually well maintained and the campus was neat there were no dilapidated or abandoned buildings. The parents were middle class families who were civil servants and skilled workers. There were only one Igbo and one Yoruba students among the respondents, indicating that this is a catchment school for the people in the area, who are predominantly Hausa. On their achievement records, 53% of the students scored above 50% and none of the students had below 25% score. This made them to be one of the highest achieving schools in this study. Students had a mean age of 16 years.

School 8 - Isadam Memorial College. This was a technical school located in the rural area of the southern part of the state. It was a boy’s-only school with the lowest average age (16 years) among the samples. Sixty-eight percent of respondents from this school were underachievers. In the data collected on AA for this study, none of the respondents scored above seventy percent. The students could barely express themselves in English, which may be related to the fact that about 84% of them indicated that they spoke Hausa at home. The school environment

was untidy, with many overgrown shrubs, and most buildings were in dire need of renovation. These students were the most economically disadvantaged, as their parents had a low SES. They indicated that about one third of their parents had secondary education and 27% of the mothers had Islamic education only, which was the highest proportion of mothers with no form of Western education in the sample. This explains why most of their parents were unskilled workers and subsistence farmers.

School 9 - Garkuwa College. This was a single sex boys' school situated in the outskirts of Kaduna town in the rural areas of the northern LGA of the state. It was a mixed boarding and day school with a large population of students. The day students have different uniforms from those in the boarding house, which easily identifies them: the day students wear a light-yellow shirt, while those that reside in the school wear a white shirt. The buildings here were in a deplorable state. Not all of the students had seats and desks. The classes were congested and movement was restricted for the teachers during lessons. Only those in the front could follow the lessons easily. Some of them leaned and wrote on the windows. All of the wooden windows in the two classrooms used for the survey had been destroyed.

School 10 - Rayuwa Government Day Secondary School. This school was one of the rural schools for boys. The survey was conducted during the examination period. Many of the students did not come because they had not paid their school fees and were therefore not allowed to sit for the examination. This was surprising since school fees are subsidized at government schools. Attendance was low in all classes. Arrangements had to be made for those who did not come to school the first time. A high percentage of the parents of the respondents were skilled workers who did not go beyond secondary school. This means that they were of low socio-economic status. The principal and the teachers were very helpful in getting the remaining participants together for the survey one week later and that gave one hundred percent response rate from the school. It was the second school among the sampled schools where participants of other ethnic groups were higher than the Hausa group. A quarter of the sample indicated that they spoke English at home due to the fact that there are less Hausas in the area, the presence of the Yoruba and it could be the nonstandard form of English language, common among the local people for easy communication across the various groups in Nigeria.

School 11 - Bilardbilk Government College. This was a mixed school located in Kachia LGA. It was one of the least populated schools surveyed in this study. The entire sample from this school are low achievers, nobody had average or high scores in their achievement record. Surprisingly, the respondents indicated that most (66%) of the fathers had tertiary certificates and private businesses. The school lacked water and toilet facilities. Students defecate in the scrub which was not healthy as there might be dangerous animals like insects and snakes. Also about 30% of both parents were skilled workers.

School 12 - Sallykub Secondary School. This was a girls' only comprehensive day school. The students had among the youngest average age (15 years) and the highest percentage of low academic achievers of all of the schools in this study. Many of the students could not read by themselves. Several had to ask their peers or teachers for spellings of simple words. Items in the questionnaire had to be explained many times in Hausa before they understood which was surprising, because English was the language of instruction in the school. More than half (55%) said that they spoke Hausa at home. Their school environment was very neat and serene. They had clean, tidy classrooms and toilet facilities. They appeared disciplined, well composed, and very co-operative. Extra care was taken to ensure that all of the questions were answered. There was good representation of all the ethnic groups.

School 13 - Sardauna Academy. This school had a rich history. It was set up as a military base for soldiers during the Second World War. After the war, it became the administrative office of the British colonial government for the northern region, before they relocated to the new office, named after Fredrick Lugard, the first Governor General in the region. It was a mixed day and boarding school for boys only. The buildings were old but looked formidable, similar to other schools with colonial era insignia. From the outside, the buildings looked moderate, but the classrooms were in a poorer condition. This school had the highest academic achievement according to its records. Students who did not pass the transition examination with at least 40% were not allowed to proceed to the next grade level. The school was the second most populated; all the students had seats, but they were clustered together. The classroom facilities were over stretched. The writing on the blackboard could hardly be seen.

The students exuded a high level of confidence. They were not as orderly as students in other schools. Discipline appeared to be low among the students. It had high number of Igbos and Yorubas. The parents were mostly civil servants.

School 14 - Galadima Grammar School. This was a mixed school located in a military barracks. Entering the school involved screening and questioning by military personnel at the gate due to the country's security situation, in which school children had been abducted in some parts of the region. It was the only school with visible security, which could be because of its location in the military barrack. This was a comprehensive day school, attended mainly by children of lower rank officers and a few civilians. The school was not very big but the classes appeared congested despite its contributing the smallest sample. These respondents had the highest percentage of fathers with only a secondary school qualification and about 80% of the mothers were self-employed. The school is well maintained as there are no dilapidated or abandoned classrooms.

School 15 - Maryam Tetengi Secondary School. MTSS was one of the few federal government schools in the state. It was a mixed comprehensive school with both day and boarding students and was opened in the late 1960s. It was located in the government reserve residential area. It had the highest percentage of non-indigenes. The Hausa ethnic group ranked second, and the majority of the participants' fathers were civil servants. Although it was highly populated, it had the lowest teacher-student ratio of 1:48. The SS1 had nine classes. All of the students had their own chairs and desks. Very few asked questions, which indicated a high literacy rate, though their academic achievement was only slightly above average. The compound was big, with football field. Their buildings were not dilapidated but needed to be renovated as most paints were tainted off the walls. Some desks and tables needed to be replaced and not managed. The chalkboards in the classes were not in good condition. Generally, the school compound was neat and the grass was trimmed.

The foregoing description of the schools suggests that many aspects of the schools were not conducive for an effective teaching and learning environment. For instance, the poor state of classroom facilities, such as the lack of windows, inadequate and broken chairs and desks, an overgrown environment and the poor state of facilities such as the use of chalk; were

considered old-fashioned and hazardous (Freitas, 2011). Other issues include students eating in the kitchen rather than the dining hall, late resumption of classes and the dependence on corps members, who are not professional teachers. It was also observed that students at the same school using different uniforms, which were often tattered; some girls wore *hijab*, and different uniforms used for day and boarding students. There was also the exclusion of students from sitting exams due to non-payment of school fees. This has a great effect in their achievement record and leads to questions as to what will become of them. However, the non-payment of fees, for this study, indicates low SES. Another issue is the use of bathroom slippers by the students. Conversely, the most commendable aspect was the excursion organised for the students by one of the schools which was considered unusual considering the low funding of schools reported in recent time. Although it was considered a good development as it would provide the students with more hands-on experiences outside their daily school activities, which is educationally enriching. Consequently, all these were to present an outlook of the school used in the study as a reflection of the situation of the schools in northern Nigeria. The second part of this chapter presents the results of the data analysis of the background of the students factors based on the distribution of responses by the respondents from each school.

6.3 Background Factors.

Having provided a brief overview of the schools from which the sample for the study was obtained, this section gives a description of the students. This analysis presents the findings on the students' background information which includes their sex (gender), age, ethnicity, language spoken at home, mother's qualification, mother's main job, father's qualification and fathers' main job. The data about the parents' qualifications and main job are indicators of the respondent's socio-economic status (SES), as discussed in the methods chapter (5). All of the data are presented below in descriptive form in percentages and are illustrated by frequency tables and in some places graphs where appropriate.

6.3.1 The gender and age of the sample

From the total number of 1,227 respondents, 46% were female while 54% were male. This shows that there were more boys than girls in the schools chosen for the study. A closer examination revealed that the girls from the single sex girls' schools constituted 32% of the

total sample while the boys from the boys' only school were 34%. From the remaining 34% of samples from the mixed school, the girls formed 14% in comparison with 20% of the boys. This means that either in single sex schools or in mixed schools, the boys outnumbered the girls slightly. This result suggests that girls in the area were more likely to attend single sex schools than mixed schools.

However, despite the gender difference indicated in this result (See Table 6.1), it was interesting that so many girls were actually still in education at this age, given earlier concerns about low gender parity in this part of the country (Okobiah, 2002; Onwuamwze, 2013). This is similar to National University Commission (NUC, 2009) and Joint Admissions and Matriculation Board (JAMB, 2009) records that indicated improvement in the gender gap in applications and enrolments into universities over the previous years. These results indicate remarkable improvement in the female school attendance considering the 30 years difference in the establishment of girls' school in the north (Chapter 3.4), girls seem to be well represented in these schools at this age. The distribution is presented in Table 6.1 below.

Table 6.1 Percentage distribution of gender and age by school

School No.	Gender (N)		Average (Mean) Age	Total
	Female	Male		

1	82	0	17	82
2	84	0	16	84
3	29	42	17	71
4	0	96	18	96
5	95	0	16	95
6	19	52	16	71
7	70	0	16	70
8	0	89	17	89
9	0	58	16	58
10	0	67	17	67
11	43	23	16	66
12	65	0	15	65
13	0	105	17	105
14	28	66	17	92
15	48	66	17	114
Total	563	664	17	1227

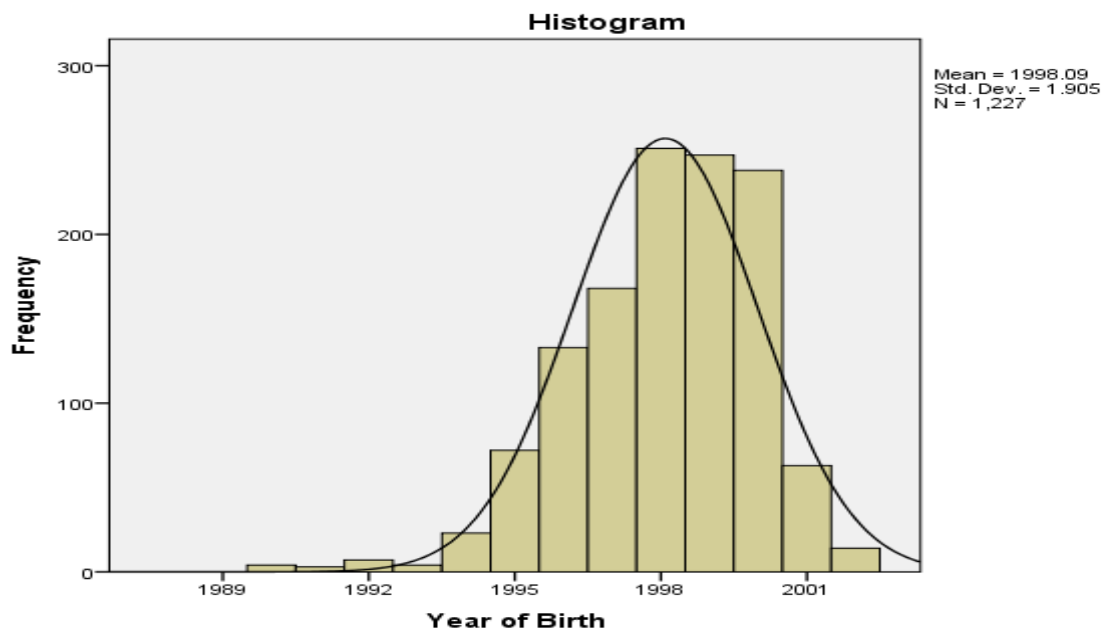
With regard to the age of the students, data was collected on the month and year of birth which was used to group them in to the different age categories. At the time of the data collection, some of the students were not yet 15 years old. This is the expected age for the year group comprised of those born in the year 1999 and the year 2000. The aim is to ascertain the age of the sample whether it conforms to the official age 15 stipulated by the National Policy on Education (NPE, 2004), for students at this level of education. The reason is to explore whether or not age makes a difference in the students' AA, as it had been found to be a factor constituting differences in students' performance (Huebler, 2005).

At the time of data collection, the expected age for students in this particular school year (SS1) was 15 years which was the age of only 40% of the participants (See Table 6.1). However the mean age for the sample was 17 years indicating that there were higher than expected number of students who had been held back a year or more due to one reason or the other. The over-aged group constituted the highest proportion, 54%, which was due to the eight year range, the under-aged groups who were only 6%.

Accordingly, records have shown that children at both primary and secondary schools in Nigeria mostly fall outside their official age range. The Demographic and Health Survey (2014) report indicated 49% of the secondary school students were on time for their appropriate age grade in 2009. Some of these reports allude to the causes of late enrolment into school, low performance leading to over-stay at some class levels and poverty related issues, which can account to remarkable effect on educational planning, inadequate infrastructure and low academic performance.

The age distribution with regards to the schools indicates that three out of the five schools with the lowest average age of 16 years were female only, while the other two are mixed schools. This indicates that most of the girls were younger than the boys because the school that has the highest average age are male only with 18 years. Over all, the average age for all the total sample was 17, followed by ages 16 and 15 respectively. This also suggests that there were more over-age students than their younger students.

Figure 6.1 Histogram of the students' age distribution



6.3.2 Ethnicity

As explained in chapter 3.5, four options were provided for students to specify their ethnicity: Hausa, Igbo, Yoruba, and others representing the minority groups, in the northern region of the country. Table 6.2 indicate that Hausas are the majority, with more than half

of the students (54%) identifying as such. The data also revealed high presence of minority ethnic groups (such as Gwari, Kaje, and Kataf) in Kaduna State, as they constituted the second highest (31%) ethnic group. The minority ethnic groups were large in proportion but grouped together due to their small number of people in them (Aito, 2005). Igbo and Yoruba, which were the other two major ethnic groups in the country, constituted only small percentages (7% and 8%, respectively). This result confirms that the north is not the ethnic base for the Yoruba and the Igbo, while the Yorubas dominate the Western part the Igbos form the majority in the East of Nigeria. Table 6.2 shows the distribution of students in each school according to their ethnicity.

Table 6.2 Percentage of ethnic groups for the sample by school

Schools	Hausa (%)	Igbo (%)	Yoruba (%)	Other (%)	Total
1	56	5	11	28	82
2	32	2	10	56	84
3	61	10	4	25	71
4	55	10	5	30	96
5	60	10	10	19	95
6	53	7	5	34	71
7	61	6	3	30	70
8	78	2	5	15	89
9	53	2	8	36	58
10	39	5	13	43	67
11	57	5	6	32	66
12	47	8	11	34	65
13	53	14	8	25	105
14	44	11	7	38	92
15	52	5	12	31	114
Total (%)	54	7	8	31	1,227

This table illustrates the spread of the main ethnic groups across the schools, with Hausa being the predominant group even in schools (numbering 2 and 10 on the table) where the figures were lower than the figure for the other ethnic minority group. The ‘other’ ethnic category comprised of minority ethnic groups in the north of the country added together as

one ethnic group classification in the country, (see chapter 3.5). Based on this result however, the Hausa group is the main ethnic group in all of the schools in this study. Thus this was expected because Hausa is the major ethnic group of the people of the Kaduna State and the language of communication among the people of the various ethnic groups.

6.3.3 Language spoken at home

The data on the language spoken at home indicated that 25% of the respondents spoke English, 59% spoke Hausa in their homes, 3% spoke Igbo, 5% spoke Yoruba and 8% speak other languages, like Nupe, Tiv, Igala, Idoma, and Egbira. Table 6.4 illustrates the distribution. However, in comparing this result with the ethnic groupings (6.3.2), there is an increase of 5% to the number of the speakers of the Hausa language at home, while there was a decrease for all the other languages, with the exception of the English. The indication is that people from the minority ethnic background adopt the use of Hausa language that is widely spoken in the region and English language which is the language of instruction in all the schools rather than their corresponding ethnic languages. This confirms the high rate of decay among some of the Nigerian languages (see chapter 3) and potential extinction in the near future. It was for this reason that it was stipulated in the National Policy on Education (NPE, 2004) that children should be taught in their mother tongue at lower primary level (1 & 2) before the use of English as the medium of instruction at higher primary. A centre for language restoration was set up to save twelve of the numerous Nigerian languages from extinction (Adeyanju, 2012).

Table 6.3 Percentage of languages spoken at home

Schools	English (%)	Hausa (%)	Igbo (N)	Yoruba (%)	Others (%)	N
1	15	66	2	8	9	82

2	42	44	0	5	10	84
3	21	68	4	4	1	71
4	35	51	0	3	10	96
5	15	65	7	8	5	95
6	34	54	1	4	7	71
7	23	66	1	1	9	70
8	6	84	1	3	6	89
9	21	60	2	7	10	58
10	36	45	2	10	7	67
11	27	59	5	3	6	66
12	30	55	5	5	5	65
13	24	58	7	6	6	105
14	37	47	1	3	12	94
15	20	60	4	6	10	114
All Schools	25	59	3	5	8	1,227

6.3.4 Mother's level of education

According to the students' responses presented in table 6.4, 34% of the mothers attained tertiary education, 29% completed secondary school, and about 13% obtained primary certificates. Furthermore, 16% reported that their mothers went through Islamic schools and 8% indicated that their mothers had other certificates (e.g. adult literacy classes and skilled training certificates for tailoring, hair dressing, or bakery work). The tertiary level consists of post-secondary education that ranged from diploma certificates, nursing, colleges of education, university degrees, master's degree level to philosophy degrees as explained in chapter four. However contrary to most reports (FME, 2005) this result from the respondents shows that more than half of their mothers went to western education schools in the north despite religious and cultural related issues some decades back (Maikudi, 2013, UNICEF, 2007). The attainment of a secondary and post-secondary education by these mothers showed that most of them were literate in English that could enable them to assist their children with homework or engage in literacy activities with them at home. Accordingly, studies have shown that parents who attained similar or higher education level as their children have higher

advantage to assist their children compared to those with lower levels of education (Bonci, 2008).

Table 6.4 Percentage of the Mother's educational level by school

Schools	Tertiary (%)	Secondary School (%)	Primary School (%)	Islamic Education (%)	Other (Specify) (%)	Total (N)
1	27	34	14	18	7	82
2	38	26	28	7	1	84
3	27	27	16	15	15	71
4	42	33	6	18	1	96
5	27	37	10	23	3	95
6	30	21	25	7	17	71
7	39	29	11	18	3	70
8	22	27	19	25	7	89
9	26	31	10	26	7	58
10	27	31	17	13	12	67
11	30	21	20	15	14	66
12	30	27	17	18	8	65
13	50	27	5	12	6	105
14	35	20	22	7	16	94
15	25	41	8	19	6	114
Total (%)	32	29	15	16	8	1,227

6.3.5 Father's education level

The respondents indicated that 54% of fathers obtained a tertiary certificate, 29% had obtained a secondary school certificate, and 9%, only a primary school certificate. Also, none of the students specified Islamic education as their father's highest level of education, 6% did not know their father's qualification and the remaining 2% indicated other certificates, most of which included skilled training. This result is similar to the results for mothers' level of education, with minor differences. The majority of the students' fathers

(54%) attained a tertiary education, compared to just under one-third of the mothers (31%), and fewer attained only the primary level (9%). Overall, fathers were more educated than mothers, which is not surprising as there are more boys in school than girls as the data for this study indicated (see 6.3.1). This distribution is illustrated in table 6.5 below:

Table 6.5 Percentage of the father's educational level

School No.	Tertiary (%)	Secondary School (%)	Primary School (%)	Other (%) (Specify)	Total (N)
1	55	29	9	7	82
2	72	20	4	4	84
3	56	24	11	9	71
4	49	35	11	5	96
5	50	35	9	6	95
6	58	25	10	7	71
7	52	30	14	4	70
8	46	30	16	8	89
9	41	36	14	9	58
10	57	21	12	10	67
11	67	21	8	4	66
12	60	28	8	4	65
13	53	37	3	8	105
14	69	16	10	5	94
15	50	35	8	7	114
Total (%)	56	29	9	6	1,227

6.3.6 Mother's main job

The students were asked to specify their mothers' or female guardian's main job, and the organisations in which they worked. The coding was based on the Nigerian job classification by the National Bureau of Statistics (NBS) that indicated yearly job generation in the country. The groups include jobs in the public, formal, and informal sectors. All those who specified that their mothers worked with government ministries, agencies, or institutions were

categorised as civil servants in public institutions. Most of the professionals in private organisations such as doctors, accountants, lawyers, skilled or unskilled professionals, and all those who owned businesses that employed not less than 10 people were all grouped into formal sector. Those that owned businesses that employed less than ten people, retailer, traders, subsistence farmers and so on, were grouped in the informal sector. In addition to the three group categories, another group was created to include home duties because it was found to be substantially large. Also included in this last group were few others who indicated that their mothers were either deceased, retired or unemployed or worked from home.

The results presented in Table 6.6 indicate that about 45% of the mothers worked in the informal sector, 24% in the public sector, 19% in the formal sector and 12% are primarily home makers whose duties were to take care of the home and the family. This result indicates that less than 50% of the mothers were not in the organised (formal) jobs either as civil servants, skilled professionals in formal employment, which was consistent with most reports (NBS, 2015; DIFD, 2013; Word Bank, 2013) on the employment ratio between men and women in the country. The implication is that most of the mothers in the informal sector and home duties were likely to be low income earners. This as a result, could impede the level of efficiency or support in the provision of school material and other logistics required especially if they are the breadwinners of the family. However one can also argue that women who are self-employed or run their own business could have ample time with the children since their work schedule may be more flexible than if they were working for someone else. Most of the respondents of this study appear to fall in to the later groups with more than half of the mothers been in the formal sector or home duties. Likewise, more mothers than fathers were occupied solely with home duties.

Table 6.6 Percentage for mother’s or female guardian’s main job

Schools	Public Institution (%)	Formal Sector (%)	Informal Sector (%)	Home Duties (%)	Total (N)
1	22	31	37	10	82
2	35	19	31	15	84
3	20	28	38	14	71
4	47	19	26	8	96
5	21	14	57	8	95
6	14	3	41	42	71
7	30	9	51	10	70
8	17	49	23	11	89
9	7	7	82	4	58
10	9	6	75	10	67
11	6	5	72	7	66
12	32	20	40	8	65
13	35	27	35	3	105
14	19	16	47	18	94
15	30	14	52	4	114
Total (%)	25	19	46	10	1,227

6.3.7 Father's main job

The students' responses show that 49% of their fathers worked with government agencies or institutions. Thirty seven percent worked in the formal sector and only 14% worked in the informal sector. Unlike in the mothers' main job, the home duties category was excluded as less than 1% indicated that their fathers engaged in it, which is understandable as it is seen traditionally as women's responsibility. Further comparison of the father's job with the mother's indicates that most of the fathers were public servants while most of the mothers were in the informal sector – a group in which father's had the lowest representation. The formal sector jobs were the second highest for both groups, although the fathers were 18% more than the percentage of mothers who worked in the sector.

However despite the high presence of fathers in the public and formal sector, statistics have shown that female employment has been on the rise while that of men has been on the decline

in these sectors even in Kaduna State where the data for this study was collected (NBS, 2013; Onyejeli, 2010) It is however not surprising that so many mothers work in recent time, considering the improvement in female education in the northern region and the data (Section 3.4) also showed that most women attained tertiary level education.

Table 6.7 Percentage for father's or male guardian main job

Schools	Formal Sector (%)	Public Institutions (%)	Informal Sector (%)	Total
1	43	49	8	82
2	30	64	6	84
3	41	46	13	71
4	25	74	1	96
5	40	29	31	95
6	30	46	24	71
7	27	63	10	70
8	41	57	2	89
9	38	50	12	58
10	30	39	31	67
11	41	44	15	66
12	48	40	12	65
13	50	43	7	105
14	46	34	20	94
15	31	50	19	114
Total (%)	37	49	14	1,227

In summary, this section focused mainly on describing the background characteristics of the sample by showing the distribution on gender, age, ethnicity, language spoken at home, their parents' educational level and main jobs. Accordingly, table 6.11 presents the summary of these findings. Although the findings on gender indicated a higher number of boys than girls, which supports most reports on low attendance rate among the female students in the northern region, the evidence here indicates that the gap was not so wide, given the percentage

difference of less than 10%. Also, one third of the mother's attained tertiary education supports the closing of gender gap between male and female in education participation. The result for age indicated that the girls constituted the younger group indicating that boys were more likely to be held back while girls of similar age attained academic success than their male counterparts in the year group. As for the schools, the distribution of the students' characteristics did not show many differences, but it was observed that the schools in the urban areas had better facilities than the schools located in the rural areas, which is evidenced from school number 8 on the table. In comparison of school 8, a rural school with school 4 that was located in urban areas, who were both boys' only schools showed that those in the urban areas use English at home more and most of their mothers attained tertiary education than those in the rural areas. This perhaps could contribute to low academic success among the students from the rural areas. This provides support to the underachievement of students in the rural schools than the schools located in the urban centres. The next part of the discussion focuses on the distribution of the conceptual variables which includes SC, LOC, SM and AA.

Table 6. 8 Summary table of the students' characteristics from the schools

List of Schools	Gender Female Male		Age (%)	Ethnicity %	(%) of those who Spoken English at Home	Mother's Education Level %	Mother's Main Job %	Father's School Level %	Father's Main Job %
School 1	82	—	15 (26)	Hausa 56	15	Secondary 34	Informal 37	Tertiary 54	Public 49
School 2	84	—	16 (31)	Others 56	41	Tertiary 48	Public 35	Tertiary 72	Public 64
School 3	29	42	17 (17)	Hausa 61	21	Ter. & Sec. 54	Public 38	Tertiary 56	Public 46
School 4	—	96	19 (25)	Hausa 55	35	Tertiary 42	public 47	Tertiary 46	Public 74
School 5	95	—	17 (22)	Hausa 60	15	Tertiary 27	informal 30	Tertiary 50	Formal 40
School 6	19	25	17 (29)	Hausa 54	34	Tertiary 30	Home D 42	Tertiary 57	Public 46
School 7	70	—	15 (34)	Hausa 61	23	Tertiary 39	informal 30	Tertiary 48	Public 63
School 8	—	89	15 (26)	Hausa 79	6	Secondary 27	Formal 49	Tertiary 30	Public 57
School 9	—	58	15 (29)	Hausa 53	21	Secondary 31	Informal 82	Tertiary 41	Public 50
School 10	—	67	17 (25)	Others 43	36	Secondary 31	Informal 75	Tertiary 55	Public 39
School 11	43	23	16 (26)	Hausa 58	27	Tertiary 30	Informal 72	Tertiary 66	Public 44
School 12	65	—	15 (26)	Hausa 48	31	Tertiary 30	Informal 40	Tertiary 58	Formal 48
School 13	—	105	17 (36)	Hausa 53	24	Tertiary 50	Public,info 35	Tertiary 37	Formal 50
School 14	28	66	16 (23)	Hausa 45	38	Tertiary 35	Informal 47	Tertiary 66	Formal 46
School 15	48	66	18 (23)	Hausa 53	20	Secondary 41	Informal 52	Tertiary 49	Public 50
Total/Majority (%)	(46)	(54)	17 (21)	Hausa (54)	English (25)	Tertiary (32)	Informal (45)	Tertiary (54)	Public (49)

6.4 Presentation of the results of the conceptual variables

The results in this section focused on the students' responses to self-concept, locus of control and school motivation. The aim is to understand the structure and the distribution of the variables, in order to determine their self-concept, locus of control, school motivation and academic achievement. As discussed in Chapter 5, the items for self-concept, locus of control and school motivation were based on the five-point Likert scale of: strongly agree, agree, don't know, disagree and strongly disagree, which was coded from 5 to 1, respectively. This data presentation was expressed in terms of percentages (of responses by the sample), the mean, and the standard deviation of each item in the questionnaire. Accordingly, the frequency distributions of responses on the concepts with respect to the type of schools, by gender and school location were presented.

6.5 Self-concept

The items on SC contained maths and English SC measures and each comprised ten items (See Chapter 5.4.2). The results were presented separately for each subject. The frequency tables illustrate the description of the responses for each subset through percentages, the mean, and the standard deviation. Maths SC and English SC, are then combined together to form the respondents' academic SC.

6.5.1 Maths self-concept

The maths SC is an aspect of students' academic SC, which is a division of general SC (See Chapter 4.2). The data revealed that 78% of the students believed that maths was one of their best subjects. Sixty-seven percent of the students reported that they looked forward to maths classes and 66% said they enjoyed studying it. However, 55% strongly agreed that they do not have good marks while 68% disagreed that they scored highly in maths. At the same time, 60% indicated that they need help with maths, but 40% disagreed that they have trouble understanding things that have maths in them. Also, 55% indicated that they perform badly on maths tests, yet about 49% disagreed strongly that they never want to take another maths course, and only 12% indicated hatred for maths.

This result suggests that the students liked maths as a subject but they do not always think that they achieved good scores in it. This is contrary to the general literature on SC, which suggests

that interest in a subject should correspond to good performance in the subject (See reciprocal model in Chapter 4). It was expected that their likeness for maths should translate to good or sustained performance in the subject instead of performing lower than expected.

See Chapter 7.3.1 for more on the relationship between SC and AA. However, the distribution shows that there are more students at both ends of the distribution than in the middle, to indicate adequate number of students with low and high SC compare to those with average SC. Nevertheless, those with high SC mathematically outnumber those with low SC, with few students around the mid-point. This means that the majority of the students have a high SC when it comes to maths. See table 6.9 for the frequency distribution of the students' responses.

Table 6.9 Percentage of the students' maths self-concept

Items	SA	A	UD	DA	SD	Mean	Std. D
Maths is one of my best subjects.	58	20	9	10	3	4.2	1.1
I look forward to maths classes.	51	16	12	15	6	4.0	1.3
I enjoy studying for maths.	49	17	14	12	8	4.0	1.2
I get good marks in maths.	6	13	13	13	55	2.0	1.3
I have always done well in maths.	6	16	10	16	52	2.1	1.4
I often need help in maths.	38	22	9	21	16	3.8	1.4
I have trouble understanding anything with maths in it.	21	23	16	21	19	3.5	1.3
I do badly in maths tests.	36	19	10	15	20	3.5	1.3
I never want to take another maths course.	6	15	10	20	49	2.1	1.3
I hate maths.	6	11	10	19	54	1.9	1.2

N = 1227

6.5.2 English self-concept

The data on the students' perceptions of English as a subject indicate that 71% of the students looked forward to English classes, 60% said it was their best subject, and 55% indicated that they learnt things quick. Yet 53% disagreed that they score highly in English and only 55% said they look forward to reading. Sixty-two percent disagreed that they were hopeless in the subject, but 54% said they were bad readers, and 15% said they hated reading. The respondents were more or less evenly divided about whether English class was easy for them; 42% reported that it was easy while 44% said it was difficult. The percentage score for the English SC showed a normal distribution but skewed slightly towards the left side. Thus, a

small majority of the sample had low English SC, while the students with high SC were slightly fewer. See table 6.10 for the frequency distribution of English SC.

Table 6.10 Percentage distribution of the students' English Self-Concept

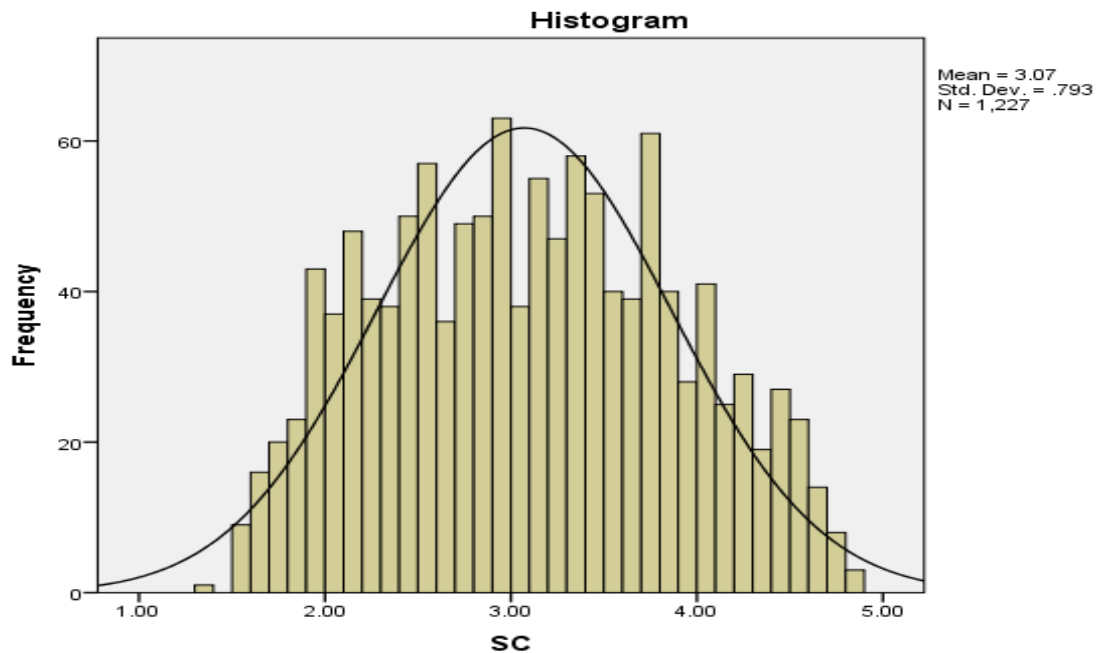
Items	SA	A	UD	DA	SD	Mean	Std. D
I look forward to English classes.	54	17	12	11	6	4.0	1.3
Work in English classes is easy for me.	23	19	14	23	21	3.0	1.5
English is one of my best subjects.	27	33	17	12	11	3.5	1.3
I get good marks in English.	19	21	14	13	34	2.5	1.5
I learn things quickly in English classes.	38	17	15	14	15	3.9	1.3
I am hopeless in English classes.	7	14	16	22	40	2.3	1.3
I do badly on tests that need a lot of reading ability.	24	30	8	22	16	2.5	1.2
I am not very good at reading.	54	17	15	10	4	4.1	1.2
I hate reading.	5	10	13	20	52	2.0	1.2
I look forward to reading.	43	12	9	24	12	2.5	1.5

N = 1227

Consequently, the distributions showed that the students had higher maths SC than English SC, the two of which are combined together in this study to form a single academic SC. In line with this summation were the 31% of the students who indicated that maths (58%) was one of their best subjects than for English (27%), while there were 13% more who indicated that they get good grade in English (19%) than in maths (6%). This is however clarified in

the presentation of result of their achievement scores in section 6.8 of this chapter. A histogram is plotted to depict the distribution for academic SC of both maths and English (Figure 6.2).

Figure 6.2 Histogram of the students' academic self-concept



The histogram of the respondents' academic SC shows a more normal distribution curve than either maths self-concept or English self-concept. This ensures the representativeness of the sample and derivations of other statistical analysis such as correlation analysis. Although it is skewed more towards those with high SC than those with low SC, this is hardly visible except through closer examination. This indicates that the students have a good perception of their academic performance in school, but how this relates to their actual performance in school is examined later.

6.6 Locus of control

The locus of control data identified the students' control belief factors in relation to the factors they consider essential to their AA. Those included the factors to which that they attributed their successes or failures (See Chapter 4.3). This indicated whether they had an

internal or an external LOC, which could be used for predicting their academic achievement. The result of the LOC analysis indicated that 82% of the respondents believed that if they worked hard enough, they could do well in school. This showed that their efforts would help them have better grades. Similarly, 79% agreed that if they work hard, they will have better grades in school, and 64% believe that their achievement in school is completely up to them.

On the other hand, the students' responses also revealed that 54% of them agreed that family demands and other problems prevented them from putting lot of time into school work, 55% of them said homework did not have much impact on their scores, and 56% reported that they believe that their teachers treated them fairly. Other responses in this range include that 53% of them believed that, when faced with problems, they would give up easily, and 56% affirmed that success in school came as a result of hard work.

Similarly, 57% of the students disagreed that trying harder in school is useless since other students are smarter than them. Meanwhile, 49% disagreed that if they had different teachers, they would try harder, while 42% agreed, which was close. Although more students expressed disagreement with the latter, the 7% difference between those who agreed and those who disagree not was so much, which means that both feelings are present to an almost equal extent.

This result indicates the presence of both internal and external LOC amongst the students but there were more students with internal LOC. However, Ikiriko's (2013) study in the southern part of the country affirmed that the students were basically externals as they attributed outcomes of their academic performance on teachers, factors of faith and luck due to their religiosity, which this result showed that the northern students had both attributes. The wider literature premised on Rotter's (1966) concept of LOC, perceived externals as indicative of negativity and incompetency in which people in that category were most likely to make less effort to improve their circumstances or events influencing their outcomes such as academic performance. The internals on the other hand were perceived to be people who believe that they are capable of controlling the influencing factors. See Table 6.12 for the frequency distribution of each of the items on LOC together with their mean and standard deviation.

Table 6.12 Percentage of the students' locus of control

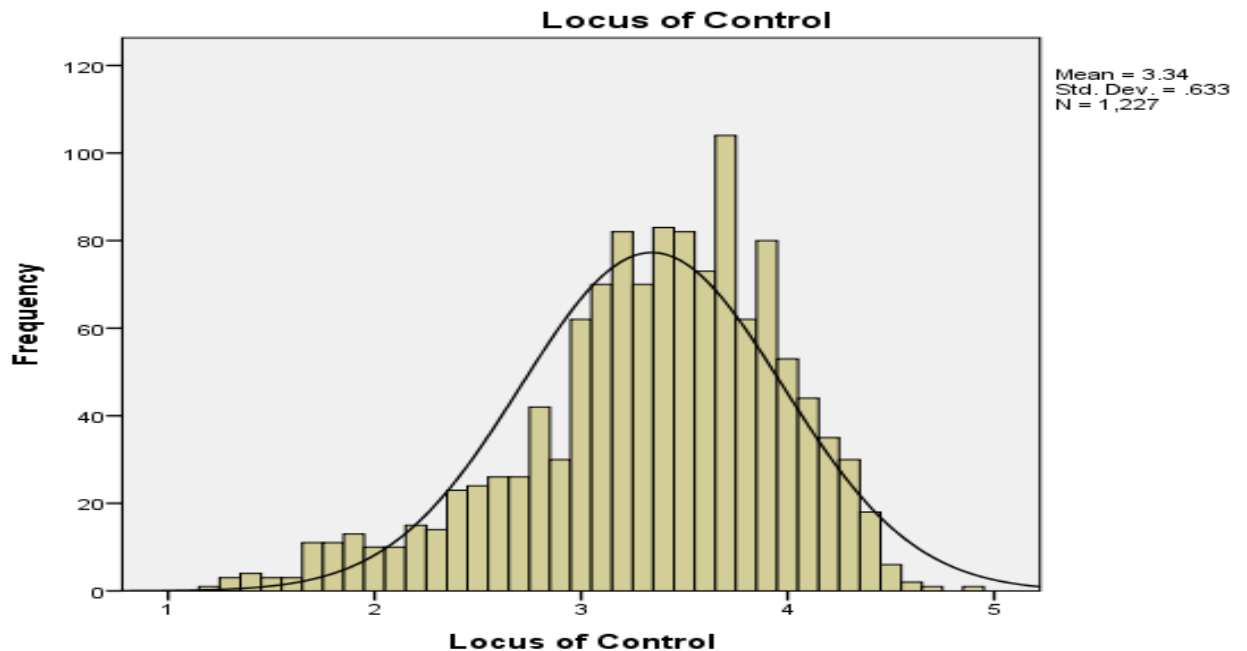
Items	SA	A	UD	DA	SD	Mean	Sd. D
If I work hard enough I can do well in school.	55	27	5	7	6	4.2	1.2
Whether or not I do well in my school is completely up to me.	32	32	16	17	3	3.7	1.1
Family demands or other problems prevent me from putting a lot of time into my school work	17	37	12	23	11	2.7	1.3
If I had different teachers, I would try harder in my school work.	15	27	9	31	17	3.1	1.4
Whether or not I do my homework has little to do with the kind of grade I get.	11	24	9	31	24	3.3	1.4
If I practice hard I will have better grades in my school work.	5	7	9	28	51	4.2	1.1
My teachers treat me fairly.	12	19	12	30	27	3.4	1.4
When met with problems in school, I give up easily.	15	38	13	25	9	2.8	1.2
It is useless to try hard in school because other students are just smarter than me.	23	34	10	21	11	2.7	1.3
Being successful in school is a matter of hard work; luck has nothing to do with it.	10	23	11	31	25	3.4	1.3

N = 1227

The results are skewed more towards the direction of those with high LOC as indicated by the overall mean score of 3.34. The figures indicate that over 60% of the students have internal LOC. Also, those at the lower end, who exhibit external LOC, have more variation in their levels than those with high (internal) levels, who are more clustered together there by skewing towards the right side of the distribution. This shows that the students believed that getting good grades is predicated on their ability, efforts and persistence rather than blaming luck, teachers, family demands and whether they do their homework or not. Figure 6.3 shows a

histogram plotted to provide a graphic picture of the distribution of the students' responses on LOC.

Figure 6.3 Histogram illustrating the students' locus of control



6.7 School motivation

The items of school motivation were developed from various sources of literature which focused mainly on school facilities, forms of relationships that the students had with peers and teachers, and their goal-orientations (explained in Chapter4.4). The responses of the students indicated that 85% agreed that extra lessons offered by schools could improve their grades, and 77% affirmed that teachers' attention influences their performance. Also, 67% said that class size has an impact on their performance, and 79% agreed that peer influence had a positive effect on their performance. Eighty-one percent of the students reported that they received extra help from their teachers, 74% said that getting a reward for good school work is important to them, and 73% agreed that pictures and other teaching aids improved their performance.

At the same time, 70% of the respondents said they did not feel uncomfortable when taught by teachers of the opposite sex, while 19% said that this affects them, and 11% of the students said that they did not know. There is a fairly even division regarding the issue of provision of

food by the school, as 49% agreed that this motivates them to attend, 40% disagreed while the remaining 11% were undecided. See Table 6.13 for the distribution of the responses on SM and the histogram in figure 6.4 illustrates the percentage distribution.

Table 6.13 Percentage distribution of school motivation among the sample

Items	SA	A	UD	DA	SD	Mean	Sd. D
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Extra lessons in my school would improve my grades.	46	39	8	5	2	4.2	0.89
I get good grades in subjects where teachers listen to what I have to say.	35	42	14	7	7	4.0	0.92
If the class is small, I can follow lessons more easily.	26	41	15	15	3	3.7	1.10
I do my best work at school when I work with others.	40	40	11	8	1	4.1	0.98
If I need extra help, I receive it from my teachers.	37	44	9	9	1	4.1	0.94
Getting a reward for my good school work is important to me.	36	38	9	14	3	3.9	1.12
I do best when teachers use teaching aids to support their lessons (e.g. pictures).	33	40	13	11	2	3.9	1.06
I attend classes because the school provides food for students.	13	21	12	31	18	3.0	1.40
I feel uncomfortable when taught by teachers of a different sex to me.	5	14	11	42	28	2.3	1.16
I do better in school when water is provided for drinking and toilet use.	31	35	14	14	6	3.7	1.20

N = 1227

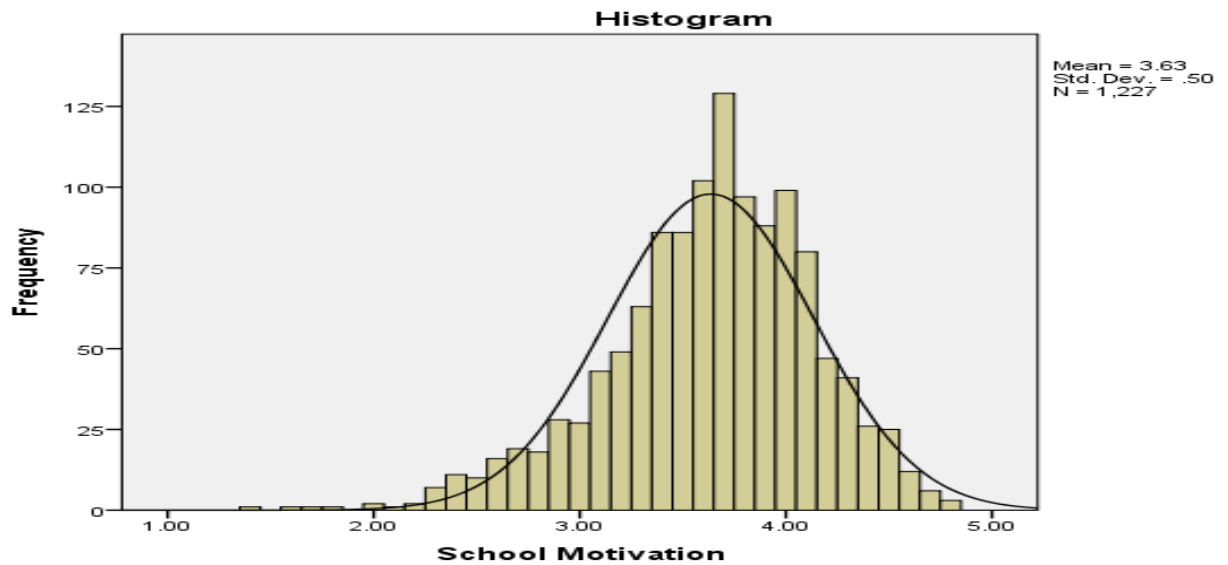
This result did not come as a surprise, since the sample comprised both day and boarding students. Only three schools were exclusively boarding schools, and four had only day students; the remaining schools operated as both. This suggests that the provision of food by the school is not that important to the day students with respect to their performance and

well-being compared to those in the boarding house, since they do not have alternatives. The issue of the day and boarding schools were not part of the focus of the study and was therefore not considered in the analysis or the aggregate data for the different schools. Lastly, 66% of the students attested to the benefit of having good potable water for drinking and lavatory use in their schools.

Thus this result suggest that the students were interested in their schools and were cognizant of the need for good grades and some of the enabling factors such as extra lessons, and teaching aids. They tended not to have complaints about their teachers, since they indicated that they get adequate help from them, but do want to be listened to if they have something to say and want the teachers to use more teaching aids during the lessons to illustrate the concepts. For this they would prefer a smaller student-teacher ratio and the provision of basic amenities, such as water for toilet use. Further analysis investigated the relationship of these conceptual variables (SC, LOC & SM) with the students' AA.

The inadequacy of water supply and sanitary services had been identified as one of the main factors hindering school attendance and performance especially among female adolescent students during menstruation periods, which had been found to be among the factors that affected the attainment of UN MDG in 2015 (Jasper et al., 2012). It was to this regard that UNICEF assisted in the provision of 11,100 boreholes (and wells) with 55, 900 latrines in schools and rural areas (UNICEF, 2005). In the same vein, the UNICEF and WHO monitory group indicated that these provisions reduced drastically the manifestation of some of the water related diseases and attendance rate in most of the affected areas. However, this result indicated a prevalence of inadequate water and toilet facilities in schools, in addition to the dilapidated school facilities observed during the data collection process (See Chapter 6.2).

Figure 6.4 Histogram illustrating the students' school motivation



The presentation of data on SC, LOC and SC show that the students scored highly on them. The highest was on SM, and SC had the lowest mean score and the more dispersed scores than the others. Next section presents the descriptive results for AA data before further analysis is conducted on the variables.

6.8 Academic achievement

The academic achievement of the students comprised their mean scores in maths and English subjects. A detailed description was given in Chapter 5 but this data were based on the students' school records that comprised two continuous assessment tests graded 20 (%) marks each, amounting to 40% for the continuous assessment. The end of first term examination result based on 60% was added to bring the total to 100 %. The data indicated that maths scores had a higher mean (mean 50%, SD 16.778) than the scores in English (mean 44, SD 15.764) across the sample. This further showed that about 50% of the respondents achieved higher than 50% in maths compared to 31% for English. This showed that the students performed better in maths. The average scores for maths and English were combined to form the students' AA scores in this study this gave a total mean score of 47%.

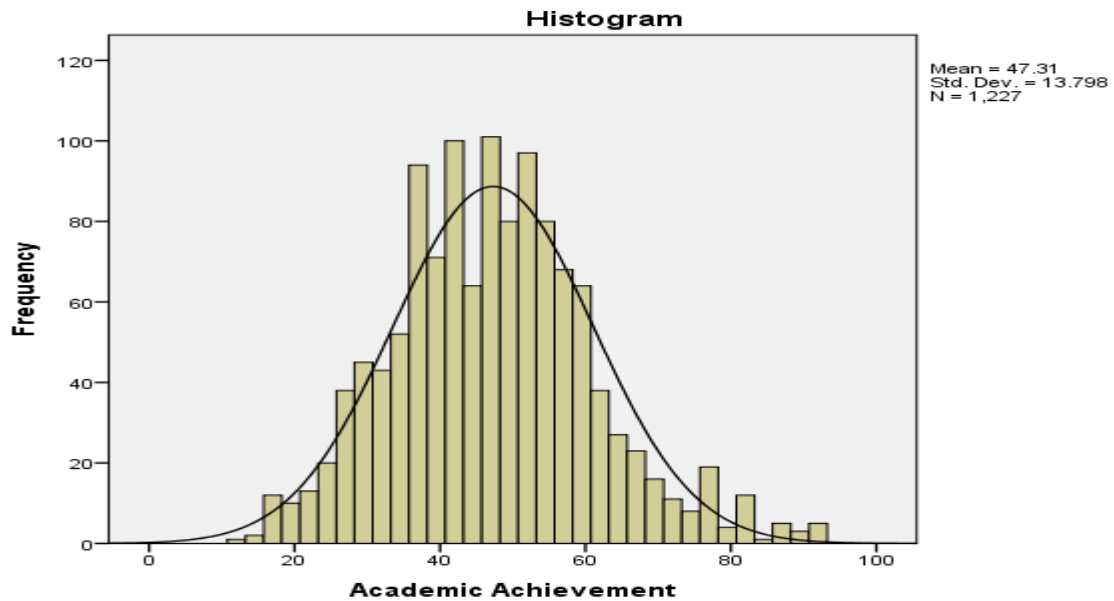
However, for easy presentation of the scores, they were grouped into four quartiles, with a range of 25%, starting with the 1st quartile, which comprises lowest achievers. This is followed by the 2nd and 3rd, and lastly, by the 4th, which contains the highest achievers. Thus, 5% of the students fell into the 1st quartile, which means they had a mean percentage score of 25% or

below. The 2nd quartile contained 55% of the sample, having mean scores between 26% and 50%, and this has the highest number of students in terms of their academic achievement scores. The 3rd quartile had 36% of the students, with the mean range from 51 to 75%, while the 4th quartile contained only 4% of the sample, with a mean score from 76% to 100%. The total scores based on quartiles show clearly that the scores are normally distributed. See Table 6.14 for the frequency distribution of academic achievement by school and the histogram representing the overall distribution of the sample scores.

Table 6.14 Distribution table of the students' academic achievement by school

Schools	1 st Quartile 1 – 25%	2 nd Quartile 26 – 50%	3 rd Quartile 51 – 75%	4 th Quartile 76 – 100%	N
1	4	55	38	3	82
2	2	45	50	3	84
3	0	72	28	0	71
4	0	15	76	9	96
5	4	65	28	3	95
6	14	83	3	0	71
7	0	47	51	1	70
8	0	34	58	8	89
9	16	69	15	0	58
10	13	79	8	0	67
11	18	81	0	0	66
12	1	49	46	4	65
13	2	26	55	17	105
14	5	68	25	2	94
15	0	65	31	4	114
Total (%)	5	55	36	4	1,227

Figure 6.5 Histogram illustrating the students' academic achievement



The distribution of the achievement scores by the schools indicated that all the schools that had more than half of their students within third and fourth quartile range were located in the urban areas summed to 60% of such schools among the sampled schools for the urban area. To this effect further analysis was conducted to investigate the distribution of AA and the conceptual variables across the various types of schools that the students attend. (See some of the results in the next section)

6.9 Conceptual variables and the different type of schools

This section examines the distribution of the conceptual variables across the different type of schools that the students attended. These include schools that were differentiated by gender, location and academic achievement levels. Sampling students from different types of schools was to ensure adequate representation and variation of the students in the northern region (See Chapter 5). Consequently, the recognition of the importance of school location among the public as a social environment for learning has increased in recent times; even people in the rural areas now prefer to send their children to urban centres because they are seen to have better funding, infrastructural facilities and more qualified teachers (Olaniyan, 2011). As a result, there is therefore the need for the government to make education accessible to a large citizenry in the country. The presentation of the results includes the percentage distribution of the students from different schools, the mean and standard distribution of their scores.

6.9.1 Self-concept of students from the different type of schools

The results of the students' responses to the SC items, with regard to gender and school location presented in table 6.15 indicate that the students in single-sex schools had a higher mean score than the students from mixed schools. Similarly, the result shows that the students who attended schools in urban areas had higher SC than those who attended schools in rural areas. This suggests that the type of school the students attended (in terms of mixed or single sex schools) influenced their SC.

Table 6.15 Percentage of the students' self-concept based on type of school and location

Variables	Schools	Schools (%)	Students (N)	Mean	SD
Type of School	Single-Sex Schools	66	811	3.6	0.78
	Mixed Schools	44	416	2.7	0.69
Location of School	Urban Schools	71	867	3.1	0.68
	Rural Schools	29	360	2.6	0.74

Accordingly, these results are not surprising considering that gender segregation is a common phenomenon in Hausa communities and most Muslim dominated societies. Studies have pointed out that gender stereotypes from home and schools can be manifested in subject selection, forms of reinforcements, and can be the cause of variation in academic perceptions among students in school (Igbo, et al. 2015; Cairns, 1990). The reasons provided by most of the literature for the differences in school location was premised on availability of facilities in the urban areas most of which are lacking in rural areas as shown in this result (Olaniyan, 2011). Some of these facilities such as access to electricity and internet are common among children in the urban centres most, which lead to high level of socialisation and exposure outside the schools. Cairns (1990) whose study found higher SC among students in single-sex schools noted that the environment is an important factor in students' attitude in enhancing

their positive SC and AA. This may be the reason why there were more students from the urban schools with high SC than those in the rural areas.

6.9.2 Locus of control of students from the different type of schools

On locus of control, the responses indicate similar mean scores for both the single-sex schools and mixed schools. This shows that the students in both single sex and mixed schools had similar internal LOC. It is expected that students in different types of schools would have different LOC which is not the case in this result. As for school location, the students in urban schools had internal LOC than those from rural schools. This means that the students in urban schools had slightly more students with internal LOC than those from rural schools. Although there was some relationship between LOC and SM, it was minimal compared to the influence of SC (see table 6.16).

Table 6.16 Distribution of the students' locus of control based on type of school and location

Variables	Schools	Schools (%)	Students (N)	Mean	Standard Deviation
Type of School	Single-Sex Schools	66	811	3.34	0.67
	Mixed Schools	44	416	3.35	0.63
Location of School	Urban Schools	71	867	3.44	0.58
	Rural Schools	29	360	3.12	0.71

However, most studies on LOC among students in school have focused on a wide range of variables such as educational outcomes, behaviours, attendance, adjustment and school completion (Ghaemi & yazdanpanah, 2014; Bodill & Roberts, 2013; Fakeye, 2011). In all these areas students with internal LOC seem to have greater confidence, less depression, anxiety and resilience to school work (Curtis & Trice, 2013). However, studies into LOC and gender based schools (You et al., 2011; Cairns, 1990) indicated that students in single-sex school and students in urban schools had more internal locus than those that attended mixed

or rural schools. In this present study, the attribution of the student's outcomes does not seem to be a major factor contributing to low performance compared to SC in the previous section.

6.9.3 School motivation of students from the different type of schools

The results show that students from the different types of schools had high SM. The students from urban areas were more motivated, followed by those that attended single-sex schools, than those in mixed schools and finally, those from rural schools. This result indicated that high SM among the students irrespective of the type of school that they attended. In other words, school motivation does not influence type of schools based on gender and location. See table 6.17 for the distribution.

Table 6.17 Percentage of the students' school motivation based on type of school and location

Variables	Schools	Schools (%)	Students (N)	Mean	Standard Deviation
Type of School	Single-Sex Schools	66	811	3.7	0.49
	Mixed Schools	44	416	3.5	0.55
Location of School	Urban Schools	71	867	3.7	0.46
	Rural Schools	29	360	3.4	0.59

Differences in SM were more apparent for location than for the gender type of schools. This is understandable as there were similarities among the schools in the urban areas in terms of facilities, teacher quality, and high level of parental participation in schools than in the rural areas. Arguably, the demand for good performance seems greater among educated families, who are most likely to expect high performance from their children. However comparing this result with some empirical studies such McInerney & Ali (2007), and Tella (2007) found higher differences across the various types of schools on gender and location. This result supports decline in single-sex schools across the world. Nonetheless, most literature indicated higher completion rate, better aspirations, and tendency to attain higher education

among students with high school motivation than those with low SM. This demonstrates that the sample for this study have high SM from the different types of schools.

6.9.4 Academic achievement

The students' AA results indicate a mean difference of 8 percentage point in favour of students in single-sex, ahead of students in mixed schools. For school location, the students in urban schools had a higher mean difference of 13% than students from rural schools. This shows that school type influenced students' AA (see Table 6.18).

Table 6.18 Percentage of the students' academic achievement based on type of school and location

Variables	Schools	Schools (%)	Students (N)	Mean	SD
Type of School	Single-Sex Schools	66	811	50	13.7
	Mixed Schools	34	416	42	12.3
Location of School	Urban Schools	71	867	51	12.8
	Rural Schools	29	360	38	11.6

This result, has demonstrated the influence of the type of school on students educational attainment, both by gender and location, although the gap in academic performance was larger for school location than on gender. In all of these results for the type of schools, students from urban areas scored more highly not only in AA but also in SM, SC and LOC. The result for LOC indicates slight differences in their means, but differences were higher in SC, SM and AA. This result supports the notion of government in making education accessible to the people notwithstanding inadequate distribution of facilities between urban and rural schools (Owoey, 2011). It was due to inadequate basic amenities in rural communities that teachers reject posting to such areas (Alokan & Arijesuyo, 2013). Also noted was the prevalence of poverty and illiteracy among the rural populace. Most of the rural dwellers could not afford associated cost for books and school uniforms which were not provided by the free education policy of the government.

6.10 Summary

The analysis in this chapter has shown that most of the schools had poor infrastructure. This includes run-down buildings and classrooms without windows. Furthermore most of these classrooms lack adequate furniture for the large of students. It was also observed that some of the schools had a healthier environment than others. Other impeding factors are hygiene related, for instance unavailability of drinkable water, inadequate toilet facilities and an unkempt environment that was hazardous to students' health, and constitute hindrance to positive performance in school.

In relation to background factors of students, vis-à-vis gender, age ethnicity, language at home and SES, the population of boys were higher than those of girls in most schools. Some of the girls were younger in age, but a large percentage of them were older than the official age of 15, expected of students at the SS1 level. With respect to ethnicity, the Hausa group were in the majority (54%). This finding is expected because Hausa group is predominant in the state. In contrast, however to this ethnic predominance, the analysis showed that high percentage of the students spoke English at home. This is possibly related to the fact that English is the language of academic instruction and using it at home would facilitate academic understanding than to speak other languages.

On SES, most of the parents attained tertiary education; although the proportion of fathers with tertiary education was almost twice that of the mothers. With regard to the parents' profession, most of the mothers (28%) were not in paid employment. This was expected considering that (29%) many of the mothers had attained only primary education and Islamic education, while some were traders and subsistence farmers. Similarly about one third of the fathers were reported to engage in skilled jobs. This was however not consistent with their educational level as over 50% of them attained tertiary education, which makes them eligible to be employed in the formal sector organisations.

The findings on the SC, LOC and SM indicated that students scored highly on them (SC: 53%, LOC: 67% and SM 88%), but had lower than average (40%) AA scores. The findings for the concepts show near normality in their distribution, which fulfilled the parametric assumptions about the data. The distribution of the conceptual variables by the different type of schools showed that students in urban schools performed better than those in rural schools

across all the variables. This indicated that school location was an important factor. The reason for this was related to poverty and educational level of the rural families, inadequate infrastructure in the schools and communities leading to fewer teachers than required. This is because they would prefer to live and work in a conducive ambient (Olaniyan, 2011). Although the students in rural schools did not scored as highly as their urban counterparts on all the variables, the differences between them was not large for LOC and SM variables. With regard to the type of school based on gender, single-sex schools (male and female only schools) did better on all the variables expect in LOC, where they had similar scores to the students in mixed schools. The achievement score for the students in all schools however was not encouraging; students had relatively higher scores on the concepts.

In conclusion, the presentation of analysis on the students and their schools was to provide an insight into their characteristics and the type of schools in the state. Some of the results indicated that children with certain background characteristics such as those whose parents' attained tertiary education and who attended urban schools had more advantage toward better performance in school than those from less economically advantaged parents and rural schools. The next chapter (7) focuses on the analysis of the interactions between each of these variables in order to provide a clearer view of their relationship and in identifying the group of students that were most likely to be academically successful.

Chapter Seven

Identifying Ability Group of Students

7.1 Introduction

This chapter builds on chapter six, that describes the students and their schools. The aim of this chapter is to examine the extent to which the outcome variables (SC, LOC and SM) vary according to students' sex, age, ethnicity, language spoken at home, parents' qualification and profession in relation to academic achievement (AA). These analyses are to provide insight into their links and to identify student groups who were most likely to perform better than others before using variables to construct a predictive model of academic achievement. To this regard Cohen's (1988) effect size (ES) are used to indicate the amount of variation between the variables through examining differences in mean scores and standard deviations. The first part of the chapter focused on the distribution of the students' background factors across the conceptual variables and academic achievement scores. The second part presents correlation analysis between the conceptual variables and academic achievement. This will show the variables that influence student performance in school in addition to identifying the students groups that were more likely to perform better.

7.2 The relationships between background and the conceptual variables

This section presents the results of the analyses on the relationship between the respondents' mean scores regarding the background factors of gender, age, ethnicity, language spoken at home, parental education level and main jobs; as well as the three conceptual variables and academic achievement. Each of the variables had a reference group used to compare with other groups within the variable. This division was theoretically derived from the literature based on the focus of the study. Originally, apart from gender, all the other background factors comprised of more than two subsets (See Chapter six). For instance for ethnicity, Hausa is used as the reference group for which all the other groups were compared. The analysis was to determine the amount of differences between the reference groups categories from the others, according to the responses from the students involved in the study.

7.2.1 Gender in relation to academic achievement and the conceptual variables

The effect size was used to calculate gender differences in AA, SC, LOC, and SM. The results, in table 7.1, indicate gender differences in favour of boys for AA, SC and LOC, except for SM, where the differences were minimal. However, although the boys had higher AA, SC and LOC scores, the effect sizes were very small for example just 0.12 for gender differences in SC.

Table 7.1 Results of gender difference in academic achievement and the conceptual variables

Variables	Sex	N	Mean	Standard Deviation	Effect Size
Academic Achievement	Female	563	46	13.1	0.18
	Male	664	48	14.3	
Self-Concept	Female	563	3.0	0.770	0.12
	Male	664	3.1	0.803	
Locus of Contro	Female	563	3.2	0.661	0.17
	Male	664	3.3	0.613	
School Motivation	Female	563	3.6	0.540	0.06
	Male	664	3.7	0.501	

These similarities in test scores for male and female respondents is discernible and surprising, considering most reports identify low performance and school attendance rates of the ‘girl-child’ in the NN (UNESCO, 2013; DHS, 2013). For example, FME (2005) indicated a high prevalence in the gender gap at secondary school and tertiary levels of education in some areas of the country. While DIFD, (2005) indicated that 62% of the out of school children in Nigeria were girls from the northern region.

Although most of these reports apart from DHS (2013), are more concerned with attendance and access of girls to education, studies (Tella, 2007; Ezeudu, 2013) that found differences in performance and academic perceptions tend to reveal gender stereotypical findings. For example, these studies showed that boys performed better in maths, chemistry, SC and

motivation. Despite this, it was still surprising that boys performed (slightly) better in English than girls, which negates some of these other empirical findings that have constantly shown girls to outscore boys in most language related subjects (Zembart & Blume, 2011).

7.2.2 Age differences in academic achievement and conceptual variables

The expected age for SS1 (senior secondary one) students is 15 years (NPE, 2004). However there were some respondents who were either older or younger than 15 years depending on factors such as early entrance or demotion due to poor performance (See Chapter Four). Nonetheless 15 years is used as the reference point, to compare the students' age groups. Although there were some students who were yet to be 15 years based on their month of birth, they are categorised as the younger group. Those aged 16 years old and above were grouped into the older age group. This resulted in two groups: those aged 15 or younger and the 16 plus students, who might have been held back a year or more from their grade level. This is to determine the relationship between the conceptual variables and AA of the two groups to see if age is an influencing factor contributing to their performance (see Table 7.2 below).

Table 7.2 Results of age groups differences in academic achievement and conceptual variables

Variables	Age Groups	N	Mean Score	Standard Deviation	Effect Size
Academic Achievement	Expected-Age	562	47.5	14.0	0.03
	Over-age	665	47.1	13.5	
Self-Concept	Expected –age	562	3.07	0.80	0.01
	Over-age	665	3.06	0.78	
Locus of Control	Expected –age	562	3.37	0.62	0.10
	Over-age	665	3.31	0.65	
School Motivation	Expected –age	665	3.65	0.53	0.08
	Over-age	562	3.61	0.51	

These results show no differences in the mean scores of the groups in terms of AA, self-concept, locus of control and school motivation (AA: 0.03; SC: 0.01; LOC: 0.10; SM 0.08). The higher effect sizes for LOC and SM did not demonstrate much level of associations. This indicates that the younger students have similar levels of AA and the conceptual variables as the older students. Although if age had been linked to maturation, the older students were expected to perform higher since they would have acquired some knowledge and experiences if they had not been held back at some grade level. This suggests that age is not a factor that impacts upon the AA and the conceptual variables of the students.

7.2.3. Hausa and non-Hausa groups

The data on ethnicity was used to determine differences between the Hausa and the other non-Hausa minority groups in the sample. This category was based on the fact that the Hausas form the majority both in the region and among the sample. The results, presented in table 7.3, show no differences between the Hausa students and the non-Hausa students in terms of AA, SC, LOC and SM.

Table 7.3 Results of ethnicity differences in academic achievement and the conceptual variables

Variables	Ethnicity	N	Mean	Standard Deviation	Effect Size
Academic Achievement	Hausa	660	46.9	13.4	0.05
	Non-Hausa	567	47.7	14.3	
Self-Concept	Hausa	660	3.05	0.776	0.06
	Non-Hausa	567	3.1	0.813	
Locus of Control	Hausa	660	3.4	0.636	0.07
	Non-Hausa	567	3.3	0.633	
School Motivation	Hausa	660	3.6	0.511	0.03
	Non-Hausa	567	3.62	0.530	

There is no evidence here that ethnic group affects the students' scores on the conceptual and academic variables that were the focus of the study (AA: 0.05; SC: 0.06; LOC: 0.07; SM: 0.03). From a historical perspective and considering the failure rate recorded in examinations as indication of low academic achievement among Northern students, it was expected that the Hausa students would perform lower in academic achievement and have lower scores in the conceptual variables. This result is an improvement from what had been reported in the literature (Balarabe, 2012, Okobiah, 2002) on the low achievement of the Hausa ethnic group compared to other ethnic groups in the country (also see table 1.2 and Chapter 3.5).

7.2.4 English and non-English speakers at home

The data on language spoken at home was used to determine the relationship between English language use at home and performance in school, SC, LOC and SM. This is because English language is the language of instruction in schools across Nigeria. It is therefore important to ascertain whether speaking English at home would improve students' performance, self-perception, control belief and motivation compared to those who speak other languages at home. Table 7.3 showed little or no difference in the means scores of those who spoke English at home and those who did not and this pattern held across all the variables (AA: 0.06; SC: 0.06; LOC: 0.06; SM: 0.08).

Table 7.4 Results of differences in language spoken at home with academic achievement and conceptual variables

Variables	Language at Home	N	Mean	Standard Deviation	Effect Size
Academic Achievement	English	312	46.7	13.5	0.061
	Non-English	915	47.5	13.9	
Self-Concept	English	312	3.04	0.799	0.056
	Non-English	915	3.08	0.791	
Locus of Control	English	312	3.31	0.635	0.064
	Non-English	915	3.35	0.635	
School Motivation	English	312	3.60	0.512	0.076
	Non-English	915	3.64	0.523	

The effect sizes indicate no differences between the groups which suggest that the use of English language at home by the students did not influence their AA, SC, LOC and SM. This result supports comparative studies on the use of English among ethnic groups in Nigeria (Balarabe 1989, Adeyanju, 2012). These studies found that English language use at home is more common among other major ethnic groups than among the Hausas. Apart from English being a regional language in Nigeria, it is one of the most widely spoken languages in Africa. Nevertheless, English is Nigerian lingua-franca and serves as the unifying factor for communication among the heterogeneous language groups in the country. It has therefore been the most common language among all the people of other minor languages in the North. Although it was expected that those who spoke English at home would have higher scores, have more accurate and positive perceptions of their academic performance and be more motivated towards school than those who did not speak English at home. This relates to the fact that they would have been fluent in English and therefore more confident in its use in school than the other students.

7.2.5 The influence of mothers' educational level

In this section about mother's educational level, tertiary level of education is used as the reference group to compare against all the other education levels (including primary,

secondary, Islamic education and those who had not been to school). Completing tertiary education was chosen to represent advancement and quality of education above that of the other levels that are considered lower. It was to show if having tertiary education by parents relates to the children's school performance as noted by some studies (Azhar et al., 2013). The tertiary group included all forms of post 16 secondary education (see Chapter 6.3.4). Therefore, students were placed in two groups to include those who indicated that their mothers attained tertiary certificates and those whose mothers attained below tertiary levels. The aim was to investigate the impact of mothers' educational level on the students' AA, SC, LOC and SM (Table 7.5).

Table 7.5 Results of mother's educational level groups in relation to academic achievement and conceptual variables

Variables	Mothers' Educational Levels	N	Mean Score	Standard Deviation	Effect Size
Academic Achievement	Tertiary Level	420	49.6	15	0.26
	Lower Levels	807	46.1	13	
Self-Concept	Tertiary Level	420	3.17	0.85	0.19
	Lower Levels	807	3.02	0.76	
Locus of Control	Tertiary Level	420	3.35	0.61	0.03
	Lower Levels	807	3.33	0.65	
School Motivation	Tertiary Level	420	3.65	0.50	0.06
	Lower Levels	807	3.62	0.53	

The results presented in table 7.5 indicate small mean differences between the groups in AA and SC (ES: AA 0.3; SC 0.2) but no differences were found between the groups in their LOC and SM. This suggests that the students whose mother's attained tertiary levels of education, performed slightly better in their examination and had positive SC than those whose mothers had been educated to below tertiary level. The evidence here suggest no relationship between mother's level of education in LOC and SM (ES: LOC 0.03, SM 0.06).

Consequently some studies (for example Hernandez & Napierala, 2014; Olibie et al., 2013) offer support to the importance of mother's level of education on child's performance and emotional stability linked to personality variables such as SC, LOC and SM. It is however surprising that difference were not found between the groups in terms of locus of control and school motivation. Although the presentation of the students' responses on LOC and SM indicated that most of the students had internal LOC and high SM, it was expected that mother's educational level would show some differences. Most studies (Flouri, 2006; Tella, 2013) have found relationships between children's attribution and motivation in school with mothers' educational level which negate these findings of the present study.

7.2.6. The influence of father's educational level

The groups for the father's educational level, are the same as for the mothers' educational level in the previous section. The results, depicted in table 7.6, show that there were no relationships between students those fathers completed tertiary education and those whose fathers had been educated below tertiary level in AA, SC, LOC and SM (AA: 0.02; SC: 0.01; LOC: 0.01; SM: 0.02).

However, despite a higher number of fathers with tertiary education than the mothers, this did not have any impact on the students' scores in the AA and conceptual variables. This signified the importance of mothers' education above that of the father. It was expected that the parents' educational level would impact upon their AA and the conceptual variable as indicated by other studies (Ghaemi & Yazdanpanah, 2014; Osuafor and Okonkwo, 2013). The studies indicated high level of education for both parents, lead to higher support and provision for better education for children than what the parents had attained.

Table 7.6 Results of father’s educational level in relation to academic achievement and the conceptual variables

Variables	Fathers’ Education	N	Mean	Standard Deviation	Effect Size
Academic Achievement	Tertiary Level	682	47.2	13.5	0.02
	Lower Levels	545	47.5	14.1	
Self-Concept	Tertiary Level	682	3.08	0.804	0.01
	Lower Levels	545	3.07	0.781	
Locus of Control	Tertiary Level	682	3.33	3.32	0.01
	Lower Levels	545	3.36	3.36	
School Motivation	Tertiary Level	682	3.64	0.504	0.02
	Lower Levels	545	3.63	0.542	

7.2.7 The influence of mother’s main job

As explained in chapter six, the data for the mother’s main job had four different categories based on the sectors in which the mothers worked: public institutions, formal (professional in private institution) sector, informal sectors and home duties. This classification was derived from the Nigerian National Bureau of Statistics report of jobs (NBS, 2015). However, considering the similarities between the groups they were merged in to two main groups in this section. Public institutions (government owned) and formal sector (privately owned) were grouped as the ‘formal sector’ used as the reference group for the job category from which the other groups (informal sector) were compared. Home duties was considered to be informal since they are less defined organisational structure usually consisting of less than ten people such as retail trading, wholesale and agriculture, are therefore grouped together as informal sector jobs (NBS, 2015). Table 7.7 presents the result.

Table 7.7 Results of for mother’s main job in relation to academic achievement and conceptual variables

Variables	Groups	N	Mean Score	Standard Deviation	Effect Size
Academic Achievement	Formal sector	524	56	12.3	1.29
	Informal sector	703	41	10.9	
Self-Concept	Formal sector	524	3.54	0.661	1.21
	Informal sector	703	2.72	0.701	
Locus of Control	Formal sector	524	3.48	0.572	0.39
	Informal sector	703	3.24	0.661	
School Motivation	Formal sector	524	3.82	0.433	0.68
	Informal sector	703	3.49	0.530	

From the results, differences were found in the mean scores of the groups. Large effect sizes were shown for AA (1.3), SC (1.2), and SM (0.7) while LOC has a close to medium effect (0.4). These large differences signify the importance of the mother’s job on child’s AA, and the conceptual variables. This implies that students whose mothers worked in the formal sector performed better in school, had more positive self-perception, showed greater interest in school and attributed their performance to their own efforts and abilities compared with students whose mothers worked in the informal sector.

These results are consistent with most of the related literature on these concepts (See Chapter 3.3.2). The results show some level of association with the data for the mothers’ educational level in the sense that most mothers (34%) attained tertiary level education. They were most probably in the formal sector either as civil servants or professionals in the private sector and served as role model to their children to succeed in school or helped enable them to have attitudes that are more positive towards school than the children from the other groups. Accordingly, the mothers’ jobs can be linked to income generation for the family. Those with higher income would most likely enhance adequate provision of school material, affordability of home lessons and prompt payment of school fees where necessary.

7.2.8 The influence of father's main job

Regarding the fathers' main job, the respondents were grouped along the same lines as for the mothers' main job. The results show a similar trend to that for the mothers' job. It was found that AA, SC, LOC and SM had mean differences on father's jobs. The students whose fathers worked in the formal sector had higher scores than those that their fathers worked in the informal sector. In addition, AA and SC had large effects (AA: 0.76; SC: 0.66) while LOC and SM indicated medium effect (LOC: .0.39; SM: 0.40). These results demonstrate the importance of the father's jobs on the child's performance in school just like the mother's main job. However, the effect sizes for the mother's jobs were greater on all the variables than the father's main job. This indicates that the mother's job has a strong relationship and greater impact than that of the father. See Table 7.8 for the presentation of the results.

Table 7.8 Results of the analyses on father's main job in relation to academic achievement and the conceptual variables

Variables	Fathers' Main Job	N	Mean	Standard Deviation	Effect Size
Academic Achievement	Formal sector	1056	48.65	13.66	0.76
	Informal sector	171	38.99	11.62	
Self-Concept	Formal sector	1056	3.14	0.790	0.66
	Informal sector	171	2.66	0.681	
Locus of Control	Formal sector	1056	3.38	0.615	0.39
	Informal sector	171	3.12	0.707	
School Motivation	Formal sector	1056	3.66	0.510	0.40
	Informal sector	171	3.45	0.544	

In summary, the findings concerning the relationship between students' background characteristics, AA and the conceptual variables (SC, LOC and SM) were mixed. While there were differences between some groups, the findings for some groups were remarkably similar. Specifically, the results for age, ethnicity, use of English at home and father's educational level showed no relationships with students' performance and the conceptual variables. However, the parents' professions showed stronger relationships with AA and the conceptual

variables. The children whose parents were employed in the formal sector had higher scores than the children whose fathers worked in the informal sector. The results for gender on the other hand were mixed, while it had an impact on academic achievement and self-concept in favour of boys, differences were not found between boys and girls in LOC and SM.

In general, the results revealed that the students were a heterogeneous group in terms of the variability of their responses with regard to the concepts that are the focus of this study. Having considered the bivariate relationship between student background factors and their AA, SC, LOC and SM, the next section presents an analysis of the relationship between academic achievement and the conceptual variables.

7.3 Relationship between academic achievement and the conceptual variables

In this section, Pearson's correlation analysis was conducted to investigate the relationship between the conceptual variables and AA, in order to determine the level and direction of the relationships between the variables. Pearson's correlation was used because the AA was measured on an interval scale and the conceptual variables were transformed from ordinal to continuous data. It changed from its initial form of 1 to 5 (likert scale) categories to interval scale, in which the means scores of the students' responses were derived for each item. The AA and the conceptual variables were found to be normally distributed (Chapter 6.4). In addition, both maths and English SC were correlated with their corresponding AA scores. The aim was to determine variation in the conceptual variables in specific aspects of AA and compare it with the findings from other empirical studies (e.g. Marsh, 1990), and colleagues on SC (see Chapter 4.2).

7.3.1 The relationship between self-concept and academic achievement

Table 7.9 presents the results of the correlation between SC and AA. The result shows a highly positive relationship between SC and AA (0.837). This means that students with high SC also scored highly in AA, while those with low SC tended to have low achievement scores. The same pattern of relationship was found in the results for the specific subject domains. Maths SC and maths attainment scores showed a correlation of 0.71 while English SC and English attainment scores had a correlation of 0.81. These results indicate high correlations in all the domains, with the combined SC, and AA showing a higher coefficient value than the separate

subject areas. This result reflects previous empirical findings on the relationship between SC and AA (Marsh, 1989; Guay et al., 2010; Moller & Pohlmann, 2010; Pinxten et al., 2015; Obilor, 2012). As expected maths self-concept correlated more highly with maths AA than with English or combined AA. The same goes for English and general SC in relation to AA. See table 7.9 for the results below:

Table 7.9 Correlation between self-concept and academic achievement

Variables	Maths Academic Achievement	English Academic Achievement	Academic Achievement (Combined)	Sig
Maths Self-concept	0.712	0.339	0.626	.000
English Self-concept	0.475	0.811	0.752	.000
Self-concept (Combined)	0.710	0.708	0.837	.000

N = 1227

Consequently, the group of students that were most likely to perform better in tests were those with high scores in the combined self-concept in all the subjects rather than in specific subject areas. Nonetheless, the differences in Maths and English coefficients suggests that students with low SC tend to have higher scores in maths than in English, while those with high SC appeared to have better grades in maths than in English. Whereas at the univariate stage of analysis (chapter 6) the result indicates higher scores for the students in maths SC and maths achievement scores than in English (EAA and ESC). However, this present result found higher associations for English SC and AA than in maths.

7.3.2 Relationship between locus of control and academic achievement

The results in Table 7.10 indicate a positive but weak relationship between LOC and AA (0.38). The correlation co-efficient for maths was lower than that for English and the combined achievement scores of the two subjects that showed a variation of 38%. This suggests that locus of control accounts for only a small variation in the students' AA.

Although there is a relationship between the students' scores in LOC and AA, only about one third of those with high AA had high LOC and the same for those with low scores in LOC and AA.

Table 7.10 Correlation between locus of control and academic achievement

Variables	N	Maths Academic Achievement	English Academic Achievement	Academic Achievement	Sig
Locus of Control	1227	0.268	0.380	0.380	.000

The result is surprising considering that 67% of the students had high scores on the LOC measure. If the 40% of the students with high AA scored had high scores in LOC, the percentage of variation would be greater than 38% seen here, compared to the result of the relationship between SC and AA. This indicates that 62% of variation is not accounted for by LOC even in the absence of any other variable. This shows that the high scores for LOC which indicates internal LOC are prevalent among students with high and low AA scores. However, this result falls below the expectations of Rotters' (1966) theory on LOC, which indicates high levels of difference in the academic performance of students with internal and external LOC. Those with internal LOC were expected to be high achievers while those with external locus were expected to have low scores in AA, rather than having students of different achievement level as internals in terms of AA.

7.3.3 The relationship between school motivation and academic achievement

Analysis was conducted to determine the amount of variation in AA that could be accounted for by the measure of school motivation. The results, presented in Table 7.11, indicate that there was a moderately positive relationship between SM and AA (AA: 0.536). This shows that some students with high scores in SM also had high levels of AA and those with low scores in school motivation also performed lower in AA.

Similar to the specific domains of SC and LOC, further investigation was conducted to explore the relationship between specific domains of AA and AA. The correlation coefficient for English was 0.06 lower than maths, indicating that maths had slightly higher relationship with school motivation than English achievement scores, while the combined AA related more than each of the specific academic scores. This indicates that the respondents with high SM performed better in both maths and English examinations than those with low SM.

Table 7.11 Result of the correlation between school motivation and academic achievement

Variables	N	Maths Academic Achievement	English Academic Achievement	Academic Achievement	Sig
School Motivation	1227	.483	.425	.536	.000

7.4 Conclusion

In conclusion, the results presented in this section indicated positive relationships between the conceptual variables and AA. From the results, SC and its components (maths and English) had higher levels correlation than LOC and SM. For the three conceptual variables, the combined AA scores showed higher coefficient values than for the separate subject domains. This suggests that the level of associations for each of the concepts (SC; LOC; SM) is greater in all the combined subject scores than in the specific subjects that the students offered at school. In summary, the results of this analysis on the students' AA revealed that the group of students most likely to succeed academically were those that scored higher on the conceptual variables and those whose parents work in the formal sector. The next chapter reports the construction of a model that can be used to predict students' performance from the present scores.

Chapter Eight

Modelling Academic Achievement

8.1 Introduction

Chapter 7 summarised the relationships between the students' background factors and the conceptual variables (SC, LOC & SM), as well as academic achievement (AA). Parents' profession were found to have a clear relationship with AA than the other background factors. This chapter focuses primarily on developing a regression model to examine the relationships between the different concepts that are best able to predict the students' AA. The aim is to identify some of the most important factors that account for the greatest amount of variation in the students' AA.

In Chapter 6, the descriptive analyses showed that the students scored highly on the conceptual variables especially in LOC (67%) and SM (88%) while SC was average (53) and AA was 40% of the students that had above average scores. In chapter 7, SC (0.837) was found to have higher level of association with AA, than SM (0.536) and LOC (0.380). Accordingly, the first part of this chapter (eight) presents a cross tabulation of the students distribution pattern on the pattern of relationships between the conceptual variables and AA based on the background factors. This is to further elaborate on the relationship between the conceptual variables and AA in chapter seven. The background factors of gender and mother's level of education had small differences while the parents' main jobs had large levels of relationships with AA and the conceptual variables. This was to indicate the variability in the students' AA beyond the bivariate stage of the correlation analysis before constructing the predictive model. The aim was to show similarities and differences between the students' academic performance and the conceptual variables. This is then followed by a description of the steps taken in constructing a regression model of the students' AA. The chapter concludes with a discussion about the identification of the outliers and the profile of the students in each of the three AA groups that emerged from the final model.

8.2 Interactions between academic achievement, conceptual variables relationships and background factors

This section focuses on the relationships between AA and SC, LOC and SM for different groups of students. The aim was to identify the particular group of students that performed better than others in order to determine whether the characteristics of particular groups influence their AA. This builds on the relationships between AA, SC, LOC and SM discussed in Chapter 7.3.

8.2.1 Gender differences in academic achievement in relation to the conceptual variables

Regarding gender, differences were found in the performance of boys and girls in AA and the conceptual variables. Table 8.1 presents this distribution.

Table 8.1: Distribution of students' academic achievement based on gender and the conceptual variable

Conceptual Variables		Gender				Total (%)	
		Female (%)		Male (%)			
		Low AA	High AA	Low AA	High AA	F	M
Self-concept	Low	47	4	43	4	52	46
	High	15	33	10	43	48	54
Locus of Control	External	23	7	18	8	29	26
	Internal	40	30	35	39	71	74
School Motivation	Low	12	1	10	2	49	11
	High	52	35	43	45	45	89
Total (%)		63	37	53	47	46	54

Low denote less than average scores: High denotes average and above average scores (in AA, SC, LOC & SM)

The table shows that 47% of female students with low AA also reported low levels of self-concept this is a similar score to that for low achieving boys, where 43% of them also reported low levels of SC. A similar pattern is indicated for both girls and boys with high SC, although the boys scored more highly (10%) for self-concept and academic achievement than the girls.

A similar pattern of association between SC and AA was seen among the two groups as there were slightly more girls at the lower end of the distribution and more boys at the higher end.

The results for LOC indicate that amongst both boys and girls more of the respondents had internal LOC than external LOC, irrespective of their achievement scores. However, there were more boys (9%) with internal locus of control than girls, and amongst the latter, external locus of control tended to be associated with low AA. For both genders, less than 10% of those that were high achievers had external LOC. The high and low achieving groups of boys have a similar number of students with internal LOC in contrast to the girls amongst whom those with internal LOC often low achievers than high achievers. This means that the boys with internal LOC performed better in school than the girls. Interestingly, fewer respondents with external LOC had high AA.

Regarding SM, there were many more students with high SM than low amongst both male and female students with different levels of AA. The result indicates that girls 9% more with low performance have higher SM than boys, while there are also boys with high SM who performed better than the girls. In line with most of the literature (Long et al., 2007; Wang & Holcombe, 2010), it was expected that there would be fewer low-achievers amongst those with high school motivation as indicated by the results (see table 8.1).

The result concerning SC are consistent with most of the literature (see chapter four) in the sense that both groups of students with low self-concept had low AA and those with high SC also had high AA (Marsh, 2003). For LOC, all the externals were found to be low achievers, while those with high achievement were expected to be more internal than externals (in LOC) but this was not the case in this result. Regarding SM, there were few differences between boys and girls, and all of the high achievement groups of students had high SM. It was expected that low-achievers would also tend to be those with low SM. This suggests that both boys and girls have a similar interest in school, including the low achievers.

The results relating to the concepts indicated the need for improvement in the areas of academic achievement, self-concept, and locus of control. The performance level of the students was the same in AA as it was for self-concept and LOC, but not for SM. These concepts show differences in the students' performance. This indicates that while both genders need to improve on scores in the concepts for better achievement girls were slightly more

vulnerable and therefore they needed to do more to improve their performance and erase the small parity gap that still exists.

8.2.2 Mother's educational level differences in academic achievement in relation to the conceptual variables

The mothers' educational level was found to be related to the students' AA and their SC, while no evidence was found for LOC and SM. Table 8.2 presents the distribution of the respondents in relation to their AA and with the conceptual variables.

Table 8.2 Distribution of students' academic achievement of students based on mother's level of education and the conceptual variable groups

Conceptual Variables		Mothers' Educational Level				Total (%)	
		Lower (%)		Tertiary (%)			
		Low AA	High AA	Low AA	High AA	L	T
Self-concept	Low	49	3	38	6	49	45
	High	16	32	7	49	51	55
Locus of Control	External	23	4	15	13	27	28
	Internal	42	31	30	42	73	72
School Motivation	Low	11	1	10	2	12	11
	High	53	35	36	52	88	89
Total (%)		64	36	45	55	66	34

Low denote less than average scores: High denotes average and above average scores (in AA, SC, LOC & SM)

The results show that half of the students whose mothers attained below a tertiary education were low achievers and had low self-concept, while only a few of them had high AA. Those, whose mothers had attained a tertiary education, scored highly on SC and AA. In addition, both groups with high SC had few students with low AA but the group whose mothers did not attain tertiary education had a higher percentage of students than those that their mothers attained tertiary education. This is similar to most other empirical findings on the concepts (see Chapter 3.3.1).

In all the groups, most of the students had internal LOC than external LOC. The externals are 8% more whose mothers did not attain tertiary education than those with tertiary education, while there were 9% more high achievers who had mothers with a tertiary education. The discrepancy here was that there is large number of low achievers with an internal LOC among the students whose mothers had lower levels of education. Based on the literature review, it was expected that those with low SC would tend to be low achievers with mothers who had attained only a low educational level (e.g. Rotter, 1966).

The pattern of distribution of the students regarding mother's educational level and the concepts (AA and SC) was similar. The student groups had high SM irrespective of their AA. The only difference was that low-achievers whose mother's did not attain tertiary education were more with high SM than those whose mothers had attained a tertiary.

Table 8.3 Distribution of students' academic achievement based on mother's main job and the conceptual variables

Conceptual Variables		Mothers' Main Job				Total (%)	
		Formal Sector (%)		Informal Sector (%)			
		Low AA	High AA	Low AA	High AA	Formal	Informal
Self-concept	Low	17	6	66	2	28	80
	High	11	66	15	17	72	20
Locus of Control	External	9	11	38	4	20	32
	Internal	19	61	52	16	80	68
School Motivation	Low	4	2	16	1	6	94
	High	23	71	65	18	83	83
Total (%)		28	72	80	20	43	57

Low denote less than average scores: High denotes average and above average scores (in AA, SC, LOC & SM)

With respect to the mothers' main jobs, it was found that most of the students whose mothers worked in the formal sector performed better in school and had a higher self-concept than those whose mothers worked in informal occupations. Those whose mothers worked in the informal sector frequently exhibited low self-concept and AA. This result is not surprising

considering that students with low scores in both SC and AA were children of parents who were usually self-employed or worked for others in jobs that probably earn a lower income than those in the formal sector.

The LOC and AA results indicate that more than half of the students whose mothers were employed in the formal sector had high AA and an internal LOC but that the low achievers among this group were 9% more likely to be externals (in LOC) with low AA. More of the respondents with internal LOC and low achievement had mothers who worked in who worked in the informal sector, although generally, the internals were the ones that were expected to be high achieving. This shows that the students whose mothers worked in the informal sector underachieved in both AA and LOC.

The result for SM shows a similar distribution to that for LOC and AA based on the mothers' main jobs, except that the percentages were higher for the groups on school motivation (e.g. high SM & AA: 71%; low SM & AA: 16%) than for locus of control (high LOC & AA: 61%; low LOC & AA: 38%). Nevertheless, those whose mothers worked in the formal sector had better AA and higher SM in the school than the others.

8.2.3 The fathers' main job and the conceptual variable groups

The father's main job is another variable that showed high mean differences in the students' SC and AA. The students whose fathers worked in the formal sector were 86%, which is the highest number of any of the groups of students among the various background factors. The students whose fathers worked in the formal sector generally performed better and had higher SC but there were also some with low AA and SC. Those whose fathers were employed in the informal sector tended to be low achievers with low SC, and there were 2% fewer high achievers. Rather those in this group with high SC tend to have lower achievement. The difference between the groups in terms of AA and SC was that those whose fathers were employed in the formal sector scored better in these areas than those whose fathers worked in the informal sector. The informal sector groups had more respondents with low SC and AA as well as externals (in LOC).

In this distribution, most of the students had internal LOC irrespective of their AA. Thus there was no discernible relationship indicated in the distribution of the students in this group. More of the students in the informal group were low achievers but most of them had internal LOC.

The area of concern was with low-achievers that were internals from the two groups of students, which is contrary to Rotter's (1966) theory of LOC, which holds that low-achievers mostly make attribution of outcomes to external factors beyond their control.

The students have high scores in SM compared to SC and LOC in relation to AA. In the group, whose fathers were employed in the formal sector, almost, all of the students had high SM irrespective of the differences in their performance, while less than 10% of them had low SM. There were 50% low achievers in the informal sector group than those with high AA, and there was no one with low SM among the high achievers. The presence of a high degree of SM among the low achievers (64% in the informal sector) suggests that the father's jobs influenced the students' SM positively, but had a negative influence on AA. See table 8.4 for the distribution patterns.

Table 8.4 Distribution of students' academic achievement based on the father's main job and the conceptual variable

Conceptual Variables		Fathers' Main Job				Total (%)	
		Formal Sector (%)		Informal Sector (%)			
		Low AA	High AA	Low AA	High AA	Formal	Informal
Self-concept	Low	41	4	69	2	45	71
	High	12	42	17	12	55	29
Locus of Control	External	18	7	33	4	26	37
	Internal	35	39	53	10	74	63
School Motivation	Low	9	2	22	0	10	22
	High	44	45	64	14	90	64
Total (%)		53	47	86	14	86	14

Low denote less than average scores: High denotes average and above average scores (in AA, SC, LOC & SM)

To summarise the relationship between AA, the conceptual variables and the father's main jobs, there was a clearer variation in the SC result in terms of the student's performance than for SM and LOC, with the latter having less of an impact.

The results of the students background characteristics in the pattern of relationships between AA and the conceptual variables highlights on the variability of the students' abilities.

Accordingly, it revealed the links between the variables in the study and areas of greater and lesser over-lap. In all, SC had a more unique variance than LOC and SM in the students' AA. The variability of LOC in AA was more for the male groups of respondents and for those whose parents had formal sector jobs and whose mothers attained a tertiary education. School motivation showed less variability than SC and LOC because most of the groups had high scores in this concept. Among the fathers with informal jobs the low achievers had the highest SM of all of the groups in the category. The next stage of the analysis expands the level of variability of all the variables in AA to indicate the goodness of fit for prediction. These results provide a prelude to the likely contribution of the variables in the AA model. However the next section involves the construction of a regression model which should provide clear importance of the variables that better predict the students' AA

8.3 Construction of the academic achievement model

Multiple regression analysis was used to construct a model that could then be used to predict the students' future AA. This was because multiple regression allowed more than one explanatory variable to be used to explain the maximum amount of variation in the students' AA. At the same time, it explains the contribution of each variable to the model. Thus, this study utilised the conceptual variables and the background factors that other researchers had found to relate to AA (in the previous chapter). This provides the basis upon which the future AA of the students could be predicted.

The contributions of each of the variables are important in determining the most important factors to improve future performance of the students. The variables include the combination of the conceptual variables (SC, LOC & SM) and the background variables (found to relate with AA in chapter 7). These are gender, mother's educational level, mother's main job, and father's main job. The other variables, which were found not to have a relationship with AA, were excluded since they were not likely to account for any variation in the students' performance. Thus, only four of the students' background characteristics, together with SC, LOC, and SM constituted the explanatory variables used to model AA.

For this purpose, the background factors, with the exception of age, needed to be transformed into a dichotomous category before they could be incorporated into the model, with one category used as the reference category and the other groups being transformed into dummy

categories. The decision to form these reference categories was based on the groups used to form the subsets in chapter 7, as they are considered theoretically to influence AA (Miles & Shevlin, 2010). For instance, the male and Hausa ethnic groups are used as the reference category for gender and ethnicity respectively. The Hausa is the major ethnic group in the sample and the male students performed better in all the concepts and in AA than the female. Others include English for language spoken at home, tertiary education level for the parents' educational level and formal sector jobs for the parents' main job category. Significantly, the conceptual variables did not undergo any form of transformation since they were measured on an interval scale. Fifteen variables were used to construct the initial model of AA in this study. A series of models were constructed before the best model could be determined.

8.3.1 Preliminary model of academic achievement

In constructing the most parsimonious model, a series of preliminary models were first developed before obtaining the model that best fit the data. The result from the initial model is used here to explain some of the steps that were taken in creating the final model and the adjustments that were made in response to the diagnostic statistics. At this initial stage, only seven variables were used based on the descriptive analysis outlined in the previous chapters (6, 7 and first part of 8). The variables were entered into the model using 'stepwise entry' which considers the variable with the highest contribution before those that had the least contribution (Field, 2013). In addition, the analysis was repeated in the same manner with the 'enter method' and the same result was obtained, which indicates that the results are reliable. The results in Table 8.5 indicate the adjusted R squared value for each of the explanatory variables, the coefficients, and the observed level of significance, to show the contribution and the importance of each of the variables to the model.

Table 8.5 Result of the preliminary model of academic achievement

Variables	Adjusted R ²	Unstandardized Coefficients (B)	(Beta)	Significance Level
Self-concept	0.701	11.35	0.652	0.000
Mothers in the formal sector	0.022	4.19	0.150	0.000
School motivation	0.017	3.58	0.135	0.000
Locus of control	0.003	1.477	0.068	0.000
Fathers in the formal sector	0.003	-2.293	-0.058	0.000
Mothers with tertiary education	0.002	1.409	0.048	0.001
Gender	0.001	0.826	0.030	0.039
Total R square value	0.742			
Total N	1227			

The results of the model indicate that all of the variables in the model contributed 74% of the total variance in the students' AA. As expected, SC (combined) accounted for largest variation in the model (70%), followed far behind by the mother's main job which came ahead of LOC and SM. It was however surprising that apart from mother's job and school motivation, none of the variables could account for more than 1% variation in AA including locus of control and gender.

The negative sign in the father's job category implied that the students whose fathers worked in the informal sector will perform better than those in the formal sector, which was used as the reference for the fathers' main job category. This suggests that the father's main job contribute to a reduction of over 2% (marks) in AA. Nevertheless, the most remarkable result

was that of small contribution made by LOC and gender difference. This shows that these variables did not make much impact on the students' AA as expected from the descriptive analysis in chapter six.

The discernible difference in gender with regards to AA in this study is encouraging compared to previous exam records (DHS, 2003; WAEC, 2012), as it signifies an improvement in girls' school attendance and performance. Subsequently, since gender did not account for much variation in this model, the variable of 'school type' based on gender and school location were considered. This was because of the differences that were found between the means of the students groups when they were compared in the categories (see SC, SM & AA categories in Chapter 6.9). The differences in gender could be by the type of school rather than by being male or female. These included single sex schools versus mixed school and whether the schools are located in rural or urban areas (See result for the final model in Table 8.8).

Furthermore, as the table (8.5) shows, the unstandardized coefficients indicate the number of marks (percentage score) that each unit increase in the explanatory variables contribute in the academic scores of the students. For instance, a unit increase in SC leads to an additional 11 marks, whereas having a mother with a tertiary education gives the chance of having an addition of 5 marks than others, in connection to the combined effect of all of the other variables. The beta values on the other hand (standardised coefficients) indicate the standard deviation unit increase of the predictor variables that can be expected to increase in the students' scores, and this makes it easier to compare the most important contributors among the explanatory variables. In this case, the most important contributor was self-concept, with 0.65 while the least important was gender with 0.03. The last item on the table was the observed levels of significance for all of the variables, which was less than 0.05 indicating that they had an effect on academic achievement. This suggests that none of excluded background factors would have made important contribution to the model, especially as some of them that showed some levels of relationships like gender accounted for very little variation in the model.

Consequently, Miles and Shevlin (2010) noted that in order to reach valid conclusions from the results of a regression analysis, the data need to satisfy certain basic assumptions. These assumptions require, among other things, that the relationships are linearly related, that error distribution is normal, that consistent homoscedasticity is reflected and that low levels of

multicollinearity exist among the independent variables. It was to this effect that the diagnostic statistics were conducted with this model to examine potential problems with it and to make corrections where possible. This helped to validate the results and to reduce bias in the model in order to draw accurate conclusions beyond the sample used in the study (Field, 2013), with minimal error.

The distribution of responses outlined in Chapter six indicates that the conceptual variables were normally distributed and histograms were plotted to provide a graphic representation indicating their normality. This relates to homoscedasticity which refers to the equality of variance in the residuals of the independent variables, which the data had to meet in order for the model to be considered a good fit. The collinearity diagnosis from the output helped to indicate some of the problem areas that could arise in model building and to ensure that the basic assumptions were link to what is to be covered below:

8.3.2 The collinearity diagnosis of the first model

The collinearity diagnosis was part of the result of the initial model, and it indicates some levels of multicollinearity for the independent variables. This signals that some variables were highly correlated with each other and would need to be resolved in order to ensure that the variables were not measuring the same thing in the model. Field (2013) recommends that if two explanatory variables correlate highly (i.e. over 80%), the variance inflation factor (VIF) and the tolerance statistic would need to be inflated, as it signifies multicollinearity. The VIF and tolerance statistics indicate the magnitude of the collinearity between or among the independent variables that would affect the accuracy of the regression model and if that happens, some (or one as the case may be) would have to be removed from the model in order to reduce bias.

In the initial model, the collinearity statistic that accompanied the results in table 8.5 showed that the highest value for the tolerance statistics was 0.990 for gender while the lowest was 0.576 for self-concept, both of which were more than the required 0.2, suggesting high levels of overlap that is a cause for concern. Also, for the VIF highest values was 1.736 for self-concept and the lowest was 1.011 for gender, which were less than the recommended value of 10 to indicate normality of variance of the variables (Field, 2013). The importance of VIF and

tolerance statistics in the result is to avoid element of bias in the model, which signifies accuracy of the estimates by the regressors (Kinnear & Gray, 2009).

However, another analysis was conducted to include maths and English SC in the model, and the results indicated values below 0.2 for tolerance statistics and VIF value above 10. This indicates the presence of multicollinearity in the SC variables. Also the R square value increased by a small margin of 0.006 (see the results in table 8.6).

Table 8.6 Result of the collinearity diagnostic for the first model

Variables	Adjusted R Value	Beta	Sig.	Tolerance Statistics	VIF
Self-concept	.759	1.20	0.000	0.02	52.38
Maths self-concept		-.37	0.000	0.06	16.32
English self-concept		-.28	0.000	0.048	20.97

However based on Field's (2013) recommendation to exclude one variable rather than have all of them in the model, another analysis was conducted. In this one, the combined self-concept had higher variance than maths and English SC. It was concluded from this that the combined self-concept would be retained in the final model.

The eigenvalues were part of the collinearity diagnostic statistics that was used to determine elements of multicollinearity among the variables. They indicate a variance proportion of 0 to 1 in which low values indicate a low level of collinearity. The results for the initial model from the output table show a value of 0.43 for the largest variation proportion in the model for SM by gender. This indicates that there was no multicollinearity in the model except when the maths and English SC were added to the variables in addition to the combined self-concept. The variance proportion between maths and English SC was 0.98, which according to Hutchenson and Sofroniou (1999) indicates multicollinearity amongst these variables which can mean the model is unfit for the data.

Correspondingly, the probability plot (PP) and quantile quantile (QQ) plots were plotted to see if they violated normality in error distribution. They show graphic representation of normality, which is to ascertain if the variables are normally distributed. The dispersion of scores on the plots indicates that randomness and the homogeneity of variance had been met. This suggests a linear relationship between AA and the explanatory variables. However, the plots show that the model is not properly specified through the standardized residual side of the plot. The standardised residual indicates the errors between the predicted scores and the students' actual achievement scores, which is important in identifying those that performed either below or above their predicted scores. If properly specified it will help in identifying the different achievement groups of the students based on their present scores, which is necessary in determining the underachievers and the overachievers. This is to identify some of the factors contribution to low performance and those likely to lead to improved AA. Figure 8.1 shows that the studentized residual is not properly specified since it ranges from -4 to +6, this shows the presence of outliers.

In addition, figure 8.2 shows a slight shift from the regression line indicating skewedness. This shows that there were extreme outliers outside the ± 3 SD criterion for the standardised residuals. Based on the results of the initial model, seven cases were outside the limit, which is less than 1% of the total sample size. It was on this basis that the final model was constructed with only the combined self-concept scores. The specific domains of maths and English were eventually excluded from the final model.

Figure 8.1 Scatter plot of standardised residuals vs. their predicted values

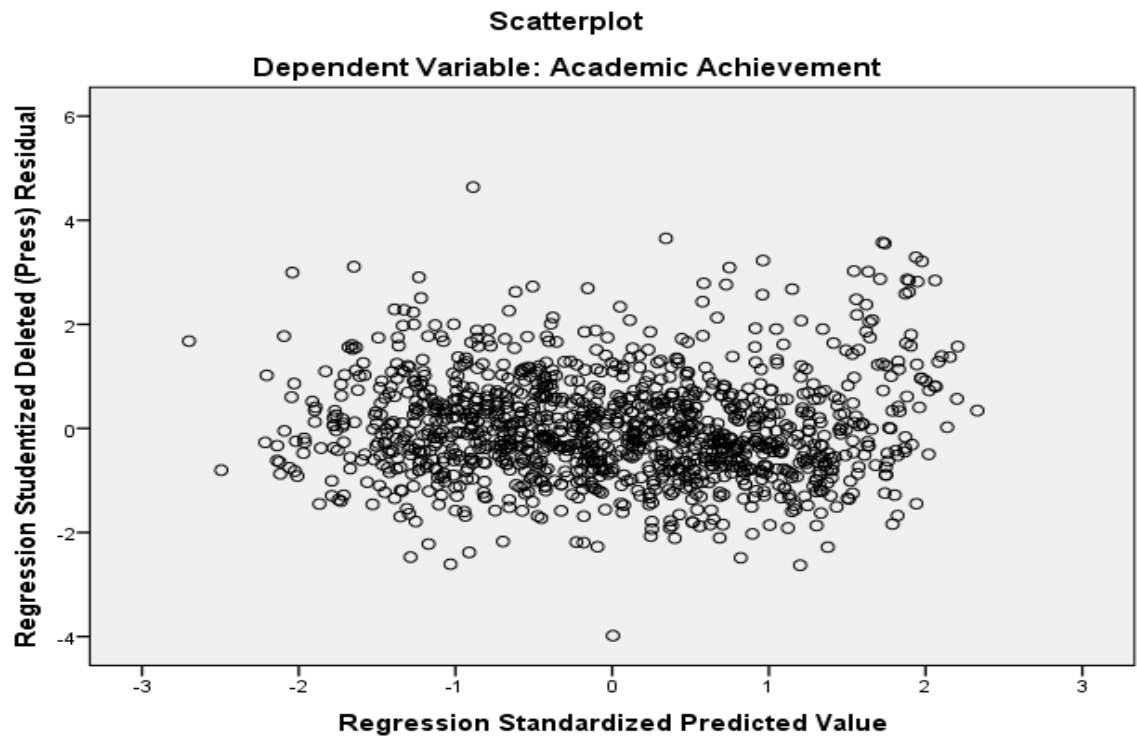
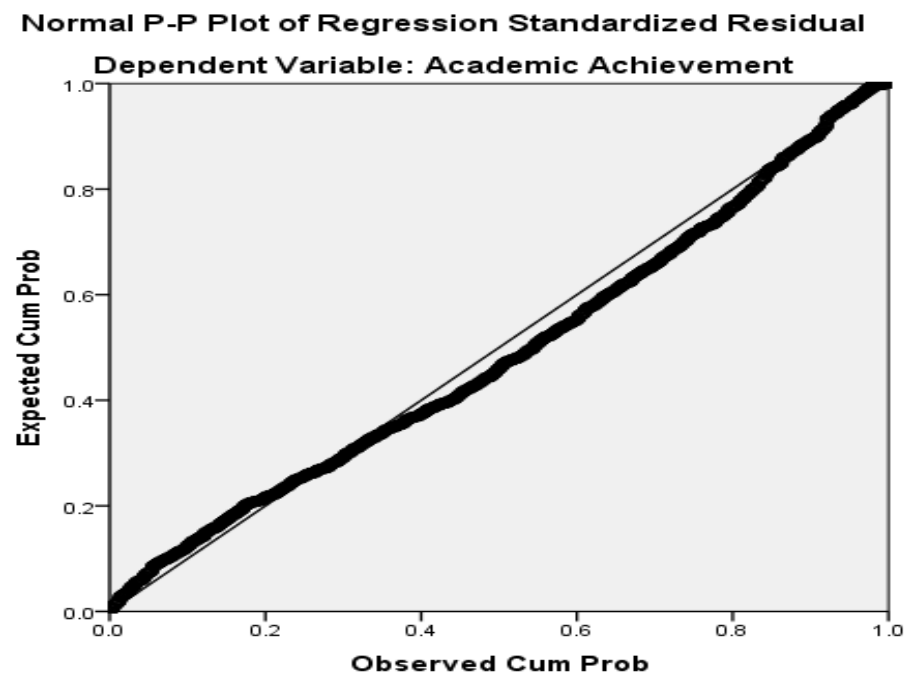


Figure 8.2 Probability plot for the second regression model



8.3.3 The final model of students' academic achievement

The final model was constructed with the assurance that the assumptions that underpinned a multiple regression model were satisfied. The stepwise entry method was used and the results indicated a high variance of (R^2) 77% in AA was accounted for by nine variables combined. This was an increase of 3% from the initial model with seven variables, due to the addition of two new variables depicting the impact of the type of school that the students attended based on gender and location (see table 8.7).

Table 8.7 Multiple regression analysis for the final academic achievement model

Model	R	R Square	Adjusted-R-square	S E of Estimate
9	0.880	0.774	0.772	6.392

The results included the predicted constant value of 7.158 achievement score when all the predictive variables were at zero unit of variance, which Field (2013) described as unlikely but not impossible. The results, presented in Table 8.8, indicates the proportion of variance contributed by each of the variables in the model, listed based on the magnitude of their impact from 1227 complete cases.

Table 8.8 Result of the final model of the students' academic achievement

Variables	Adjusted R Square Values	Unstandardized Coefficients (B)	Standardized Coefficient (Beta)	Significance Level
Self-concept	.715	10.444	.619	0.000
Mothers in the formal sector	0.022	3.960	1.46	0.000
School motivation	0.016	3.322	.129	0.000
School location	0.006	2.139	.073	0.000
Locus of control	0.004	1.373	.065	0.000
Fathers' in the formal sector	0.003	-2.056	-.053	0.000
Single-sex schools	0.002	1.597	.056	0.000
Mothers' with tertiary education	0.003	1.446	.051	0.000
Male Students (Gender)	0.002	1.360	.051	0.000
Total R square value	0.774			
Total N	1227			

As in the initial model, SC accounted for the largest proportion of variation in AA, and apart from mothers' jobs and SM, the other variables accounted for less than 1% variance in the achievement score. This implies that a unit increase in the SC score corresponds to an increase of 10 marks in the students' AA, while being male corresponds to an increase of just one mark compare with being female. Also having a mother who works in the formal sector increased the student's achievement score by about 4 marks. The LOC variable shifted one place behind

school location (beta: 0.065) in favour of students in urban schools (Beta: 0.073), compared to the last preliminary model. Gender was still the least predictive (Beta: 0.051) together with type of school based on gender (Beta: 0.051). This supports the arguments that variation in students' performance in a single sex school is not due to gender related factors. Studies by Spielhofer et al. (2007) and Cairns (1990) found that students in single sex schools performed better than those attending mixed schools and stated that the result of their studies were not predicted on gender but on other factors such as the availability of qualified teacher and facilities. The father's main job was the only variable that was negatively correlated with AA in the model, as the fathers employment in the formal sector leads to a decrease of 2 marks in AA. Based on the coding for the father's main job, the formal sector job was used as the reference point. The negative sign indicates that the informal sector jobs were more favourable to the student's AA. This implies that having a father who works in the informal sector leads to an increase in score compared to students whose fathers work in the formal sector, which seems relatively small difference. It is expected that employment in the formal sector should link to better education and income that should impact the children positively unlike what this result indicates.

Similarly, the standardised beta values indicate the degree of change in the standard deviation in AA because of a unit change in the standard deviation of each of the predictor variables. This means that one standard deviation increase in SC amounts to a 0.619 standard deviation increase in AA, while the 0.793 standard deviation of SC constitutes 0.490 marks ($0.619 \times .793$ for SC). One standard deviation unit higher in the mother's main job (1.46) constitutes an additional 0.072 mark increase in academic achievement. This suggests that a student whose mothers work in the formal sector can be expected to earn an additional 7 marks compared to those whose mothers work in the informal sector when all of the other variables are held constant, which is an opposite relationship to that of the fathers. In addition, one standard deviation unit in LOC leads to an increase of 1.4 additional marks, while a reduction of 2.5 marks occur for those fathers work in the formal sector. Those that attend single sex schools have the likelihood for additional 1.6 marks and those whose mothers had attained tertiary education 1.4 marks than those whose mothers did not. Father's main job was the most surprising result because it means that informal sector job had better impact than the formal sector. The children of those in the informal employment may be

more serious in school and took their studies seriously than the children of those in the formal sector. Apart from that gender was the least important factor in the students' AA.

Furthermore, all of the variables had a significance value of less than 0.05, which was expected from the descriptive and correlation analyses. It was these earlier analyses that showed that school types were related to students' AA, which was the basis for including them in the model. Another significant aspect of this result was the gap between the mother's main job and her educational level, although both of these variables had shown the greater importance of mother to children's education than the father. It was expected that there would be some forms of association between the mother's education and profession and that the two should have positive impact with the students' performance. The final model indicated that students whose mothers worked in the formal sector were predicted to earn close to 4 marks ahead of other students whose mothers work in the informal sectors. Also having a mother who had attained a tertiary level of education corresponded to an increase of about 1.5 marks which accrued to more than 5 marks total, due to the mother's accomplishments. The results relating to the father's job were less favourable towards formal sector jobs in impacting the students' AA

Consequently, further verifications were made to confirm that there were no problems with multi-collinearity and that the errors were normally distributed. Based on the results, the Durbin-Watson test was used and it yields a value of 1.7, nearest to the recommended value of 2 (Field, 2013). Two is the mid value to indicate that there is no multicollinearity between the independent variables and that the errors are randomly and normally distributed (Hutchenson & Sofroniou, 1999). Correspondingly, the tolerance statistics and the VIF were within the normal range and were similar to the initial model. The eigenvalues had the highest value of 0.34 between the variables of school motivation and gender, which shows that the predictive variables were not highly correlated with each other. The case-wise diagnostic identified seven extreme outliers that were outside the bounds of ± 3 standard deviations, but none of them lay more than ± 3.29 to create any concern. Moreover, they amounted to less than the threshold of 1% of the total sample that could make the model a poor fit (Field, 2013). This suggests that the final model is an accurate model for predicting the students' AA. The subsequent section however, describes the process used to categorise the students in to the various achievement groups based on their actual cores and predicted achievement scores.

8.4 Identification of students' achievement groups

From the model, three groups of students were identified based on differences between their predicted and actual scores on AA. The students were grouped based on the differences in their predicted scores from their present scores. Those whose actual scores were closest to the predicted from (some of) the background and conceptual variables are the (average) achievers while those who achieved higher scores than predicted were the over-achievers and those who did less well than predicted were the underachievers. Their identification was important to the focus of this study on identifying some of the factors determining AA among the students based on the exploration of the relationships between the concepts, background variables and AA.

According to Miles and Shevlin (2010), a standard deviation of ± 1 represents the mean point in multiple regression analysis in order to make provision for random errors, or to account for differences between the actual scores and the predicted values (residuals). In this case the mean point (± 1) represents the achievers, while the other constitutes the underachievers and overachievers derived from a margin of ± 2 standard deviations. This compares to the normal distribution curve where the ± 1 standard deviation equates to 68% of the sample based on the Z-score guidelines, while the remaining 32% encompasses those who were farther from the mean, which in this case are the outliers due to their proximity from the mean.

However, the margin (of ± 2 SD) was deemed appropriate for this sample based on consideration for the low performance generally recorded among northern Nigerian students. The focus was on identifying those who were furthest from the mean for a more investigation, as recommended by Field (2013). In ordinary data, the average case should constitute 95% of the total sample with those lying outside being regarded as exceptional cases needing to be investigated (Field, 2013). In this way, 78 students were identified through case-wise diagnostics as the students (outliers) whose actual scores lay ± 2 SD away from their predicted scores. These groups were identified for further investigation for interview to see why they did not fit with the majority of the students from the model. The underachievers were 43 students while the overachievers were 35 which amount to 6% of the total sample size.

These groups of students might have performed better or worse than expected based on a range of factors that contributed to their AA. In fact, some of the underachievers scored relatively high in the tests just not as highly as expected given the combination of the conceptual and background characteristics. An example was a student with AA score of 69% but the predicted score was 76% (see number 12 in appendix 3. 2). The same can be said about the overachievers, who in absolute terms have higher marks than expected. This shows that the underachievers are not necessarily low-achievers and neither are the overachievers comprise of those with the highest scores (high achievers). It implies that the groups have scored higher or lower than their predicted achievement scores. This has implications in identifying some of the factors and characteristics of the groups in profiling suggestions that can be used to enhance future performance of students. This should help in providing potential areas of focus in the attainment of high AA in future.

Although the focus of the modelling result was more on the underachievers in order to determine some of the factors that lead to a persistently high failure rate amongst students from the northern region of Nigeria. Thus, identifying the factors contributing to the performance of underachieving and overachieving groups was crucial to the findings of this study. On a whole, the results indicate that the overachievers had higher mean score than the underachievers. Table 8.8 and 8.9 present the distribution and characteristics of the three AA groups, indicating their background characteristics, their distribution by type of school and by conceptual variables. Also see appendix 4 for the percentage of the student groups.

Table 8.9 Distribution showing the characteristics of the academic achievement groups and students' background factors

Academic Achievement Groups	N	Gender (%)		Age Group	Ethnicity %	(%) of those who Spoken English at Home	Mother's School Level %	Mother's Main Job	Father's School Level %	Father's Main Job
Over-achievers	35	46	54	Younger	Non-Hausa (Yoruba)	Non-English speakers	Tertiary	Formal sector	Tertiary	Informal
Average-Achievers	1149	45	55	Mixed	Hausa and Others	Non-English speakers (Hausa)	Secondary & Islamic education	Mixed	Others	Formal sector
Under-achievers	43	51	49	Older	Others (Igbo)	English	Primary	informal	Tertiary	Mixed
Total	1227	553	656	Younger	Hausa	Non-English speakers	Tertiary	Informal sector jobs	Tertiary	Formal sector

Table 8.10 Academic achievement groups' distribution of school type, location, and conceptual variables.

Academic Achievement Groups	Type of School (%)			School Location (%)		Self-Concept (%)		Locus of Control (%)		School Motivation (%)	
	Girls	Boys	Mixed	Rural	Urban	Low	High	External	Internal	Low	High
Overachievers	40	41	19	24	76	45	55	33	67	11	89
Achievers	30	33	37	29	71	49	51	26	74	47	53
Underachievers	35	32	33	62	38	58	42	29	71	35	65

8.5 Differences between the academic achievement groups

The distribution in table 8.8 indicates that there were more boys than girls who were overachievers or among the average achievers, while there were more girls in the group of underachievers. This is similar to the results of the descriptive analysis (chapter 6), in which boys had slightly higher mean scores than girls in AA and on the conceptual variables. Table 8.9 further indicates that girls who attended single-sex schools perform equally well, as the boys who attended single-sex schools, unlike the girls in mixed-sex schools. This suggests that single sex-schools may be better for the students than mixed schools after all, even though the establishment of single-sex schools has decreased drastically in recent times, probably due to cost and globalisation.

Table 8.8 shows that the younger students were more commonly overachievers than the older students, who were mostly underachievers, while the members of the average achievers group were mixed in terms of age. It was not surprising that the older students were more as underachievers, as some of them might have been held back at some grade level, and were therefore not able to advance to other levels with their own age groups due to their lower levels of attainments.

Regarding ethnicity, Yoruba was the most common ethnic group amongst the overachievers, which is not surprising as they have been the most highly educated ethnic group in Nigeria since the introduction of Western education in the mid-20th century (Okobiah, 2002). The first schools were built in the south western region that they occupy, from primary schools to university, and they still have the highest number of privately owned institutions in the country (Okobiah, 2002). The finding suggests that the high level of education found amongst the Yoruba generally influences their children who attend schools in the north, even though this is not their region of origin, also considering that they had similar school experience as the northern students.

Most of the average achievers belonged to the Hausa group and other ethnic minorities from the north, whilst most of the few Igbo students in the sample were found to be underachievers. This perhaps may be that most Igbo people could afford to send their children to private schools which are more expensive than attending public schools, as most of them are known to engage in private businesses than all the other ethnic groups in the country. Onwughalu (2011) indicated that as a matter of obligation both parents contribute to the children's in Igbo society including those living in diaspora.

Furthermore, it was found that English was more commonly spoken at home among the underachieving students than overachievers and (average) achievers. This result was surprising because it is seen as the language of the educated class, and therefore it was expected that most of the parents who would introduce the language to their children at home would be those who attained a tertiary education. The results confirm that the Hausa people, irrespective of their educational qualifications have a greater tendency to speak the Hausa language at home compared to speakers of other languages in the country (Kperogi, 2015). The prevalence of English language use among Nigerians has been a cause for concern, for the decay and subsequent demise of some of the indigenous languages except for the Hausa language. This is gradually decreasing the multilingual status and ability of most of the people in the country (Ibid).

Regarding parental education level, it was logically expected that both parents of the overachievers would have attained a tertiary education, but in fact while most of the mothers of the underachieving students had completed only primary school, the fathers usually had a tertiary education. This could be the reason why the mother's educational level was found to be related to the student's AA while the father's was not. Similarly, this result shows the proximal importance of the child to the mother compared to the father, as noted above. The level of parental education amongst the average achievers was mixed for both parents.

The results were different for fathers and mothers when it came to the parents' main jobs. The majority of the overachievers had mothers who worked in the formal sector, while their fathers were mainly employed in the informal sector. The mothers of the average achievers usually worked as civil servants, house-wives, in skilled and unskilled jobs, or were self-employed. Many of their fathers were employed in the formal sector. Amongst the underachievers, the fathers' jobs were mixed, while the mothers were usually employed in the informal sector. The result for the mothers' jobs related more to their educational level than the fathers. In this regard, mothers who are not educated themselves may be disadvantaged in terms of the material provision and educational assistance that they can provide to their children, which was not the case with the fathers' educational levels and main jobs. The fathers of the overachievers had mostly attained tertiary level education but worked in the informal sector, which seems to be a contradiction. This suggests that the tertiary education of the father did not necessarily

transform the nature of his livelihood, which could reflect a problem of employment in the country, and may be having an influence on children's school achievement.

Furthermore, differences among the achievement groups were observed in terms of the type of schools that the students attend. Those that attended single-sex schools performed better than those attending mixed schools while all of the schools had greater numbers of as underachievers, the percentage for the girls' only school was higher than the others. The average achievers tend to attend mixed schools, suggesting that students in mixed schools did not perform too badly only that the single sex schools may provide a more conducive environment for students to perform better. Some advocates of single sex schools claim that there are more distractions for adolescents in mixed schools while those in support of mixed schools maintain that children who attend them are better prepared to cope with life's challenges and adapt more easily (in the society) than those who attend single sex schools (Spielhofer et al., 2007). In addition, the consideration of school location revealed that students from urban areas performed better than those from rural areas, as most of the students from the rural areas were found to be in the underachieving group. This is not surprising due to the availability of qualified teaching staff members and general school facilities in urban areas.

Differences were found among the achievement groups in SC, LOC and SM as well. For SC, the overachievers had more positive SC than the underachievers, who mostly had lower SC. However, the differences between the SC scores of the groups were all less than 10%. It was expected that the differences between the groups would be greater because SC accounted for the highest variation in the model. This implies that the underachievers did not do badly in SC, meaning that their evaluation and perception of their AA was positive even though it was slightly better amongst the overachievers.

The LOC result was more surprising as all of the groups had more students with internal LOC including the underachievers. It was expected that underachievers would have external LOC in line with Rotter's (1966) social learning theory on LOC, as a factor for scoring lower than expected. This is because Rotter linked low achievement to individuals, who attribute their performance to external factors, which, in the long run leads to low ability to achieve and unrealistic goal setting. Arguably, most of the students with external LOC are seen as helpless learners who would not make an effort to improve their future performance. The LOC result was more apparent for the overachievers than

the underachievers. However, over 70% of the underachievers had internal LOC denoting that the students have the potential to improve their future AA.

There were more differences in SM among the groups than in SC and LOC. Close to 90% of the overachievers demonstrated high SM, whereas motivation was lower among the average achievers and underachievers. Although all of the groups had more students with high school motivation, similar to LOC, the overachievers showed greater interest in school than the others. It can be argued that the level of SM of the overachievers led to their greater engagement and high ability to succeed. Groups of such students were noted to develop high levels of aspiration, resilience confidence, and realistic challenges when it came to solving even difficult tasks (Atkinson, 1964). Thus, this discussion of the differences between the AA groups facilitated the drawing up of a profile of each of the groups, which are described in the following section.

8.6 Academic achievement group profiles

Based on the above presentation of the characteristics of the various groups of students in relation to AA, a profile of the students in each of the categories emerged. It was found that the students who were more likely to attain higher AA scores than predicted tended to be male, who were in the age expected for their year group (15 to 16 years old), Yoruba, and attending a single-sex school located in an urban area, with parents who had both attained a tertiary education and worked as civil servants. Moreover, they were likely to have a positive SC, an internal LOC, high levels SM and, surprisingly, to not speak English at home.

The (average) achievers were more likely to be boys, from various age groups, primarily Hausa or from any of the minority ethnic groups in the north, and to speak Hausa at home. Furthermore, their parents are likely to have attained secondary school education, and their mothers are likely to be self-employed or engaged in home duties, while their fathers tend to work as civil servants in the formal sector. They are likely to attend a mixed school in an urban area, had a slightly high SC, an internal LOC, and either low or high SM. The results indicate that 95% of the samples for this study belonged to this achievement group, which are likely to be generally representative of the students in NN.

The final group is the underachieving students, who were the focus of this study, which aimed, to explore potential areas for eventual policies and practices for the improvement of AA. The students that fell into this group were mostly female, older than the age stipulated for the year group, and non-Hausas who speak English at home. Their mothers mostly attained only secondary school education and fathers usually had a tertiary education. Also, the mothers engaged in various forms of informal sector livelihoods, while their fathers were either self-employed or skilled workers. The students most attended single-sex schools in rural areas, and had a lower SC, an internal LOC and high SM.

The profiles of the achievement groups of students derived from the model highlights the common characteristics of members that form each group. Based on the background factors, the most surprising characteristic was that most of the overachievers did not speak English at home while most of the underachievers did. It was expected that frequency in the English language should lead to easy comprehension of the concepts learnt by the students. In addition, among the conceptual variables, SM was higher among the students than SC and LOC irrespective of their AA, as it was the highest indicator among the overachievers. This was despite the fact that SC was found to account for more variation in the students' AA than all the other factors.

8.7 Summary

This chapter primarily focused on the construction of a predictive model for students' AA. It began with the presentation of the frequency distributions (patterns) of the students' background factors to shed more light on the role of these characterises in the relationships between AA and the conceptual variables (of SC, LOC and SM). This included discussions about some of the steps that were taken to ensure that the assumptions for conducting a multiple regression analysis were met. These steps were, for example, verification of multicollinearity and homogeneity of variance in error distribution to ensure that the model fit the data accurately.

In the model results, self-concept was identified as the best predictor of the students' AA, followed by the mother's main job, while the least predictive was gender, together the predictor variables accounted for 77% of the variance in AA. In addition, the ± 2 SD was used as the yardstick for identifying the outliers or residuals that scored below or above

their predicted achievement scores. This led to the emergence of three AA groups of students, and their characteristics were explored together with a profile of each of the groups.

In spite of the discussion about the characteristics of all the three groups, the focus was mainly on the identification of underachievers and overachievers in order to identify the major factors influencing students' performance in NN. Some of the students might not necessarily have scored lower or higher than expected in absolute terms, but only in comparison to what was expected for their particular combination of the conceptual and background characteristics. It was for this reason as well as other issues that arose in the results that interviews were conducted, to identify some of the potential areas for exploration in order for appropriate policy recommendations to be formulated for the improvement of educational standards for students in the northern part of Nigeria. Chapter nine presents the results of the interviews that were carried out with some of the underachieving and overachieving students and discussions on the major themes that were generated.

Chapter Nine

Understanding Students' Differential Academic Achievement

9.1 Introduction

This chapter presents the findings of the interviews with 20 students from amongst those whose scores placed them either below or above their predicted level of academic achievement (AA) in the regression model (see Chapter eight). These interviews were carried out to investigate some of the factors influencing their AA. The aim was to shed more light on some of the issues raised by the quantitative findings regarding the relationships between the conceptual variables (SC, LOC & SM), background factors, and AA in order to identify the reasons for differences in the students' performance from their own perspectives. The students were spread across twelve schools in both urban and rural areas and comprised an equal number of boys and girls. In presenting the data, pseudonyms are used to refer to the students for anonymity and confidentiality.

The chapter begins with a brief introduction to the respondents and the process of selecting them. This is followed by a presentation and discussion of the themes derived from the semi-structured interviews. Three major themes were identified as influencing the students' AA, and each of these has several sub-themes. The themes were derived from literature and from this study's quantitative findings. They include: aspiration, significant others, and the condition of the schools. These major themes relate to all of the conceptual variables that are the focus of the study. For instance, aspiration relates the students' targeted goals and perceptions, significant others relates to influential people both within and outside the school, and school conditions affect the extent to which the environment is conducive to learning, which is related to SC, LOC and SM. In this chapter, relevant quotes from the interviews are used to support and elaborate on the identified themes.

9.2 The Respondents

The profiles of the twenty students were closely examined to determine which variables in the model affected their residual scores. These scores were the only factor that was used to characterise the respondents, yet they had different scores on the conceptual variables and

had different background characteristics. Some overachievers had lower scores on the conceptual variables used to predict their achievement scores, while some underachievers had higher scores on the variables in relation to academic achievement. For instance student number 7 on table 9.1 was an overachiever with an actual AA score on of 47% compared to their predicted score of 26%, while student number 3 on the same table has an actual AA score of 81% compared to a predicted AA score is 51%. Similarly, on table 9.2 the student on number 12 is an underachiever because the actual score was 69% while their predicted score was 76% and number 16 scored a little above average with 58% and a predicted score of 66%. What is important is that the student scores below or above their predicted AA scores as mentioned earlier (Chapter 8.4).

Nevertheless, a proportional sample of respondents was obtained for the interview from the groups (OA & UA). As a result, nine students (cases) were selected from the overachievers list and eleven for the underachievers with the highest residual scores. That includes the scores between ± 2 to 3 standard deviations, as being representatives of the groups. Based on the total number of residual values (78), there were more underachievers than overachievers (see Table 9.1: OA, 9.2: UA and appendix 3 for the comprehensive table of the respondents' profile.). The overachievers had a higher mean achievement score of 50% more than underachievers. The rationale for this selection was the study's greater focus on the underachieving group, but the overachievers still had to be included in order to make comparisons and identify the main problem areas. The purpose of this was to get a substantive understanding of their perceptions on some of the factors that influence their performance. In addition, about 80% of the overachievers were from schools located in urban areas while 63% of the underachievers were from rural schools (Also see Chapter 5.4.4).

Table 9.1 Profile of the Overachievers (OA)

S N.	Actual scores	Predicted values	Age	Sex	Ethnicity	Lang. at Home
1	93	65	1995	Male	Hausa	Hausa
2	77	50	1999	Female	Others	English
3	81	51	2000	Female	Hausa	Hausa
4	83	61	1998	Male	Yoruba	Yoruba
5	88	65	1996	Male	Hausa	Hausa
6	60	37	1998	Male	Others	English
7	47	26	1997	Female	Hausa	Others
8	64	41	1998	Female	Hausa	Hausa
9	93	70	1998	Male	Others	English
Average	77	52	1998	Male	Hausa	Hausa

Table 9.2 Profile of the Underachievers (UA)

S N.	Actual scores	Predicated scores	Age	Sex	Ethnicity	Lang. at Home
10	42	50	1994	Female	Hausa	Hausa
11	36	46	2000	Female	Hausa	Hausa
12	69	76	2000	Male	Others	others
13	20	46	1995	Female	Yoruba	Yoruba
14	36	52	2001	Female	Others	Others
15	25	41	1997	Male	Hausa	Hausa
16	58	66	1998	Male	Hausa	Hausa
17	40	56	1998	Female	Hausa	Hausa
18	39	58	1999	Male	Others	English
19	17	33	1999	Male	Others	Hausa
20	18	33	1998	Female	Hausa	Hausa
Average	27	51	1998	Female	Hausa	Hausa

9.3 Aspiration

The findings from the model showed that students performed better or worse than their predicted scores based on a combination of factors related to the conceptual variables and their background characteristics. One of the key findings that emerged was aspiration, which in the students' view was an important factor that influenced their AA. This was based on whether their current AA corresponded to their academic goals. In this study, aspiration as a theme that was theoretically derived from numerous studies in educational settings in relation to SC, such as Rogers (1966), who found that individuals have the tendency to strive and self-actualise if their self-ideal is consistent with their self-image. Others have indicated that discrepancies in performance can be attributed to the level of aspiration and the goals students have set for themselves (Diseth & Kobbeltvedt, 2010), while some researchers have shown the reverse, that is, that performance determines the level of aspiration (Gutman, et al. 2012). Students with high levels of aspiration tend to have better achievement in school. Therefore, in light of these findings, it was inferred in this study that aspiration was an important contributing factor in the students' AA. In the interviews, the students' views on their future career concentrated on the relationship between the combination of subjects they studied and their desired or probable career, particularly the usefulness and relevance of the subjects to this career.

9.3.1 Subject combination and career choice

In the first year of senior secondary school, students attend various classes within the broad subject classification of sciences and arts. In some schools where there are many students, commercial classes are offered, and these are categorised as a subset of the art-based subjects. Thus, students have the option of taking classes in scientific subjects, that is, they can choose the 'science combination', or in the arts/humanities, they take the 'arts combination'. In the evaluation of their school performance, the students were asked about their career aspirations and the combination of subjects they studied, since it is at this level that they can start to identify their future career path. As expected, all of the students' career aspirations were within the broad subject categorisation. All of the respondents in the science combination indicated that they wanted to be medical doctors, with the exception of two who indicated other science-related fields:

‘By the special grace of God, I want to become a medical doctor or a nurse, that is, if I do not get the required grades to go into medicine at the university, I will go into a nursing school.’ (Farida, UA female student)

‘I am in science class because I would like to be a civil engineer or a computer operator. I am fascinated by buildings and I also love to work with computers. I have not made up my mind yet on any of these two but my dad prefers computers because many fields require computer operation’. (Kudu, UA male student)

The indication of two career possibilities by these underachieving students signifies uncertainty which may be caused by their current AA, whereas the overachievers were unanimous in planning to become medical doctors because they seem more confident in their ability. Some of them stated that they had good grades not only in maths but also in the other subjects, and that they were committed to maintaining the marks. These science students had all scored above 50% in maths, and 60% of them were overachievers.

Stressing the high scores of the science students, one of the overachieving students in an arts class indicated that the school played a major role in her choice of subjects. Although she indicated that the school did not force her to choose a particular subject combination, they advised her against remaining in the sciences combination on account of her low examination grades in those subjects and this led her to switch to arts subjects, where she had better grades:

‘The school will ask you what you will like to be and if they see your performance is not that good, they will advise you to buckle up but if you start doing well in the other class, they can bring you back to what you want. It is not very common though’. (Nnagi, OA female student)

One of the overachieving students in arts classes lamented that he wanted to attend an additional maths class but was told that it was exclusively for the science students. He believed he needed this course to enhance his maths skills and improve his grades in the subject:

‘Allowing the science students to attend additional maths classes really help them to get better grades in general mathematics than us [arts students]. I believe that if I was allowed to attend the class I would improve my grades in

maths, because they are taught some things that they do not teach us in general maths classes.’ (Abdul, OA male student)

These quotes from the overachievers show that they are more strategic about their subject choice than the underachievers in both Arts and sciences. There were four underachievers in arts classes that indicated the desire to study single honours at the university, unlike those from the sciences that gave more than one option, the arts’ students had not decided yet which career they would like to pursue. Some students gave English, economics (OA) and history as the examples for single honours while the overachieving arts students indicated a professional career such as lawyer, politician, journalist, or university lecturer. The arts students that had identified a particular career aspiration attributed their choice to the high financial benefits associated with the profession. For instance, one overachieving female student indicated that she aspired to become a lecturer in a higher education institution rather than being a school teacher because lecturers earn a lot more than secondary or primary school teachers, and because it is much more prestigious. One of the boys from the rural school described the associations attached to certain professions:

‘I think I will join politics after leaving the university. As a politician people see you as having plenty of money, and there is high level of respect attached to it even if you do not have as much money as some people in the society. People will continue to give you higher regard, than to be an ordinary farmer or teacher.’ (Ndako, OA male student)

As with the science students who were overachievers, some of the arts students expressed a preference careers because of their good grades in subjects related to them:

‘My plans are to be a chartered accountant. Accounting is my best subject because that is the subject that I am best good at, and maths is my favourite because it challenges me the most. I got an ‘A’ in accounting but a ‘D’ in maths.’ (Waziri, UA male student)

‘Economists are very intelligent people, with my grades now I think I would like to be an economist, like the former Central Bank governor...’ (Baba, OA male student)

‘I am doing well in physics, biology and partially in chemistry. I take them seriously, after class I read more on my own and I also engage in group discussions.’ (Yusuf, OA male student)

‘On a general note, I am just an average student. I may not be good in the general subjects but I am doing well in economics and government and maths, which are my subject combination.’ (Nasri, UA male student)

These responses demonstrate that the students’ perception of their academic performance drives their career choices. Both groups of students tended to be well informed about the subject combination needed for their career choices and the need to get good grades in the subjects of particular relevance. This shows that they have high aspiration for the future, also because they all look forward to proceed to university education. Paradoxically, while the science overachievers had one specific profession on their mind, the underachieving arts students mostly wanted to read single honours as subjects at higher institutions and were less unsure of their future professions. They both seem engaged in school but the overachievers seem to exude more confidence in their school performance than the underachievers. As shown above, the school influenced the placement of students in different subject tracks based on their grades, but in the example provided, the student took the advice while still hopeful that if she improved her performance, she could be taken back to the sciences. This shows that students with high ability are able to study sciences, which is an evidence for having high number of overachievers in science classes than arts from the model. Other than that, the students selected their subject combination of their own volition, and it would seem that overachievers tended to have a better chance in being placed in science classes than the underachievers. None of the students mentioned parental influence on their choices, although one mentioned that his father encouraged him to do well in order to be successful. Differences were discerned in their expectations and aspirations. The overachievers were inclined towards getting good grades for the fulfilment of their careers, or because of influential role models or the desire to be intelligent, whereas some of the underachievers associated factors of prestige and financial benefits with their desired career.

9.3.2 Usefulness of the subject and of the chosen career

Another major theme the students indicated influenced their career aspiration was the usefulness of the identified careers to themselves, the country and to other people.

‘The only reason why I want to become a medical doctor is to help people with their health, help with their needs, because in our country, we don’t have enough medical doctors to treat people. In many hospitals there are no doctors and this is bad for us in Nigeria.’ (Galadima, OA male student)

One of the students indicated the need to learn English and maths as a basic requirement not only for educated people but among the less literate members of the society as well. As noted in chapter six, English is the lingua franca for communication among the linguistically heterogeneous ethnic groups of the country. Standard English is common among the educated elites, while ‘pidgin’ English is typically used among less educated people in the market places and elsewhere. This student discussed the use of both forms of English amongst Nigerians for communication as well as the use of basic maths for transactional purposes:

‘English is good in many ways. For example, anywhere you go, you can easily communicate with people, especially when one is in need of assistance. Still, I like maths because it helps too. Even the illiterates learn maths; [they] need it to do some calculations.’ (Maazatu, overachieving female student)

‘I like chemistry because if I study it, it will help me more, ahead in future, to know the chemical composition of things that we use daily, because not all are good for our health.’ (Hassana, OA female student)

The usefulness of the subjects to each student’s career choice is an extension of the intrinsic importance of subjects as well as that of the specific job. For example, some of the students stated in relation to their career choices that medical doctors help to provide care to the sick. Another student interested in studying language said that English serves as a means of communication throughout the wider society, and a science subject track student also justified that chemistry was useful for understanding the chemical composition of items for personal use.

These findings about the students’ aspirations suggest that the students were generally on the right career paths for their subject combinations and in terms of the importance; they gave to potential career choices. In addition, they showed that earning good grades was equally important to achieving their aspiration because there were little differences in their views to this respect (as OA and OA). For instance, one of the students indicated that he wanted to

become an accountant because that was the subject that he excelled at the most, even though, he was not particularly good in maths. Another interviewee suggested that if her grades were not high enough to pursue medicine at the university, then she would attend nursing school instead which would seem to be a sensible decision.

Furthermore, the discrepancies in the usefulness of the subjects was used as a factor to determine their career choice despite variations in AA rather than to other factors such as gender or school location, whether rural or urban areas. The only jobs that students aspired to that were stereotypically preferred by one gender or the other were nursing and teaching, which were seen to be female-dominated; otherwise, none of the boys indicated that they aspired to a stereotypically female career. Careers in politics, medicine, pharmacy, and engineering, which were seen as male-dominated fields, were of interest to the girls as well. Moreover, the underachievers were sure of the importance of excelling in their subject areas, as their grades will be a significant factor in whether they are able to reach their career goals, and they indicated that they were not currently achieving as they should. Both the student groups seemed to attribute their aspirations to various forms of importance of the profession as their underpinning motivation.

The students were generally happy with their subject areas; although some of the underachievers expressed dissatisfaction about not always performing as well as they had wanted which made their choices currently unrealistic. That was why an overachieving female student from the arts class (Nnagi) reverted from sciences due to her low scores in science subjects but is now doing better in arts. Also another example was by an arts student who wanted to attend additional maths classes to increase his scores in the general mathematics shows and urge to seek for improvement in performance. Other issues related to the students' self-concept concerned their teachers and school facilities, and these are discussed in the sections about locus of control and school motivation, with the exception of the issue of the teachers' encouragement. This is presented in the following section.

9.4 Significant others

Significant others encompass those people who exert an influence on the students' academic performance, either positive or negative. It is frequently regarded as an attribute of people with external LOC and is associated with underachievers, who were more likely to attribute their outcomes to external factors rather than to blame their own efforts and abilities (Suphi

& Yaratan, 2011). According to Rotter (1966), individuals with external locus of control are more likely to not want to improve their academic performance. The significant people that the students identified in the interviews were their teachers, their peers, senior students, and their parents. The underachievers tended to have problems in their relationships with the teachers, senior students which affected their performance but the relationship for the overachievers tend to be instrumental to their performance. They had better and happier relationships with their peers, teachers and senior students unlike the underachievers who related better with peers than others. The discussion is organised according to these groups of people.

9.4.1 Teachers

The teacher was a major theme that emerged from the interviews with the students, who identified them as having a significant influence on their academic achievement. The role of the teacher featured prominently in the discussions about issues related to their performance in the subject content and classroom activities. Some of the students viewed their teacher's influence as positive while others who are mostly comprised of the underachieving group had a negative perception. Despite earning low scores in certain subjects, a few of the students indicated that their teacher's encouragement and activities helped to sustain their interest in the subjects. One of the underachieving students who was encouraged by a teacher had this to say:

‘Our English teacher is very nice; she will always explain and will tell us that if we still do not understand we can come to her office and she will explain to us again... In English I got 55, and 54 in civics, but I am happy more with the English score because the teacher is trying her best for us.’ (Aliyu, UA male student)

This comment was interesting because while the scores are similar, he was only pleased with one of them, and this was due to the encouragement that he received from the teacher. It can be inferred that the teacher might have been *too* helpful, to the extent that he did not put much effort into the course, while extra effort was made to read more on the subject in which he did not receive much encouragement and support. However, the student said that the encouragement helped improve his performance in English. Other students who were not encouraged by the teachers had this to say:

‘Chemistry is one of my core subjects but I don’t always understand it. The teacher will explain and I still don’t understand, even though I still like the subject. She is making it difficult for me to understand.’ (Fatima, UA female student)

‘Last term many people failed maths. I think the teacher is the problem. This is because if the teacher comes to the class and did not find chalk or a duster, she’ll just give us the notes that we should just go and make it on our own. She gave that punishment to us the last time.’... (Tahir, UA male student)

‘When she enters the class, she’ll just write it down, and she’ll ask us, ‘Do you know how we get it?’ ‘This is equal to this, that is equal to that,’ she’ll not make us to understand, before you know what is happening, the lesson is over and I will not understand. [Hisses]’ (Faridah, UA female student)

These responses suggest that the students liked the subjects, but the difference is in the teachers’ attitude and degree of concern, which influences the students’ perception of the subject and their achievement in the subject. The responses also indicate externality of underachievers in their LOC by blaming the teacher for low performance. This conforms with Rotter’s (1966) concept of LOC among under achievers who would most likely not want to get involved in future activity that could improve their performance unlike those with internal locus of control even among underachievers. It is perhaps unsurprising that the students’ views varied even among the underachievers considering the different issues that schools face in retaining teachers and the different conditions they had to in especially those in the rural schools.

The teacher’s qualification and status was one of the main issues that came up in the interviews. In all of the schools, many of the teachers are carrying out their required one year of service to the nation after graduation from university. Most of them were not professionally trained to teach, except those that studied in faculties of education or obtained National Certificates in Education (NCE). The students were able to identify the lack of adequate teaching skills by the corps members as a factor in the quality of their teaching.

‘Most of them are corps members (who are temporary staff members/teachers). Like the biology teacher is permanent; some permanent staff are more experienced. Some corps-ers are more serious than others. The chemistry

teacher cares less than the physics teacher. So it affects my grades. She just comes in and talks, nothing more.’ (Nazirah, OA female student)

‘Maths is the problem. When she teaches, I understand, but in the exams, we see different things that she did not teach. I got 20%. What she brings in the examples which are normally different from the exams. Maybe if she completes her service we will not be sent corps-ers to teach maths again.’ (Galadima, UA male student)

‘Our maths teacher is a corps member; she will enter the class, give notes and go outside. She will say that we should call it a day. Sometimes if she explains, she’ll not raise her voice, so that people will not hear... we’ll just copy the notes to go and look for someone to explain it to us.’ (Maimuna, UA female student)

‘Out of nine subjects, only two are main teachers, seven are all corps-ers. The permanent teachers teach better, I understand their explanations better, I prefer their teaching.’ (Ndako, OA male student)

When asked what he considered the problem with the corps member, he replied:

‘I think they have the subject knowledge but most of the time they just give notes and that is it. They do not explain to us. Later, they will come and be asking us questions. They expect us to know it without them explaining it to us.’

The study found pedagogical experience to contribute to underachievement. This area relates to the classroom space and size that truncated teachers’ effectiveness and efficiency. This was an issue due to the large number of students in the classes, because of which the teachers were prevented from moving around freely in the classrooms. Furthermore, students at the back were often unable to hear the teachers:

‘For chemistry, we’re combined in one class, both science class one and two. If you come [late] to the class, the class is full. You will stay outside. How then can you hear what the teacher says?’ (Aliyu, UA male student)

‘She teaches without speaking loudly, only the people in the front can hear her. If we tell her, she will tell us that she did not ask us to sit at the back. This is

why I am not good in English, unlike in other subjects; our physics teacher will tell us to follow her to her office for more explanation. But usually, people do understand so not many people go to see her.’ (Fatima, UA female student)

Such comments about the teachers were made mainly by underachievers. Their statement indicated that they are not satisfied with their performance and have identified areas that they see as possible reasons for their low grades. It has, however, been pointed out in the literature (Arens et al., 20016; Wach et al., 2015) that underperforming students with a positive SC are more likely to improve their performance than those with a negative SC. For instance, the two quotes from the underachievers above reveal different views about the teachers’ efforts. They both noted their teacher’s efforts, but while one was happy with the results, the other one was not. However, the overachievers tended to concur with the proposition that students benefit more when they are in control of their own learning than when they are taught by others (Mei-Mei & Chuing-Mei, 2009). This is why they see their teachers as ‘consistent’ and ‘trying their best’, while the underachievers need someone to explain texts to them, which signifies dissatisfaction.

In one of the schools, an overachieving student noted that the discipline shown by the teachers in his school was the main factor that helped him to improve in his grades because it enabled him to spend more time reading and revising his work. Also, the girls were more critical of the teachers than the boys. An overachieving student said that reason why the arts students failed maths was because of their attitude towards the subject, while another indicated that the teachers had too much work to spend enough time with each student.

‘There is this collective idea that we leave science to the scientists and the social sciences should be our own area of expertise. We concentrate on that. Nobody expects us to be good at maths. Even our teachers.... It’s like ‘we are going to the noisy class, where they are not serious.’ It kind of shows that we are not interested. Granted, it’s partly our fault for giving them that idea, but it still feels that way.’ (Papa, Overachieving male student)

‘I guess if we can get teachers to be more one on one with the students, not just come to class, teach and go, because there are people like me. If I have a problem, honestly, I try to solve it myself. I don’t go to any teacher but I know if I go to them it will only take 10 minutes for them to explain to me personally.’ (Baba, OA male student)

Finally, the students indicated that not all of their teachers encouraged students to meet with them for clarifications. The students could understand based on a teacher's behaviour in class if that teacher was easily approachable or not. This impression affects their confidence in approaching their teachers with a query that they may have in relation to their subjects or other relevant issues, such as health and hygiene (see section 9.4). However from an overachievers' perspective, it appears that they are much more confident than the underachievers in meeting with the teachers but then, he added that they still do not approach the teachers with some of the problems that arose after the lessons. All of their comments indicate a desire for success, but a different focus, which arguably can be used to explain the differences in their academic achievement.

9.4.2 Relationships with peers and senior students

The influence of peers and friends on students' AA has been emphasised by many researchers, as it can either lead to improvement or deterioration in AA (Bankole et al., 2015; Burke & Sass, 2011; Johnson, 2000). This study's findings in this regard are based on the interviewees' responses to questions about their reading strategies and the most influential school factors. In this way, it was established that peer influence contributed to the students' reading strategies, group interaction, and trust building. The social relationship between the peers contributed to the differences in their performance outcome through coordination of the learning activities among the groups. Many of the students described the various types of help they receive from their classmates, identifying in particular the way senior students had helped their performance. One student who was ill for a time acknowledged that while she was away, her classmates updated her notes for her, so that all she had to do upon her return was to read them.

‘I came back to school in the evening. I found out that my friends had written all my notes and I was very happy that I didn't have to do all that, but I still did not have enough time to study hard for my exam, I had just two weeks to prepare.’ (Maimuna, UA female student)

This student's underachievement can be attributed to her illness but would most probably not have performed as she did if not that her friends were able to copy the notes for her. Another overachieving student attributed his performance to his being able to improve his spoken English through the help of a peer.

‘When I first came, I did not understand a lot of things that the teacher was teaching us, but later they made me sit near one of the best students in the class, and because I could not speak much, he spoke English to me all the time and he taught me things that I did not understand. That was how I started to get good marks. He remains my best friend; we do things together in the school.’ (Baba, UA male student)

‘I read in the hostel, there is a very nice sister (senior student) that helps me with my studies. If there is anything that I do not understand, she will explain it to me or sometimes with my friends or I can later explain it to them if she was busy with her studies.’ (Hassana, OA female student)

However, not all of the students benefited from the senior students. Some reported instances of bullying, being forced to run errands, and related various forms of punishments that they had endured from their seniors, on account of which they avoided the senior students rather than going to them for assistance with their school work.

‘Some like to bully us... beat us... like there was a day when we were coming back from class, before I could put my bag down, they told us to go outside and kneel down under the sun and they beat us because one of the junior students had reported one of them, and they got very angry.’ (Sakina, UA female student)

One of the girls mentioned that she was compelled to do laundry for the senior in her room. Upon being asked if she would do the same to the junior students when she becomes a senior herself, she replied that:

‘No, because in my house I am the eldest, I do not make my siblings wash my things nor do I beat them. If I know the things that will make them to learn, I’ll call them to sit near me and help them. They (seniors) are supposed to take care of us rather than punish us for nothing.’ (Umairah, UA girl)

The above comments show that the students have better relationships with their classmates or peers than with the senior students, both socially and academically. The finding on language in this section is contrary to the quantitative result, which showed less importance of the use of English at home to school performance (see Table 7.4) Nonetheless, the findings here affirm the assertion of similarities amongst different age groups which Bankole et al. (2015)

indicated could force an individual to socialise with their own age group. This was seen particularly by the students who had poor relationships with senior students, in the boarding school but was also related to similarities in learning interests and study modes (see section 9.5). Bullying remains a primary issue for students living in the hostels, and because of it, matrons were made to live with the students, but in one of the schools, the students reported that the matron travelled frequently to engage in other private business. Most of the time, the students were left with no one to supervise their daily activities after school; while some younger students were lucky enough to be looked after by the seniors, some were not. The findings show that the underachievers were the ones that had problems relating with the senior students (and were mostly unsatisfied with the teachers as well) while the overachievers had better relationships with both peers and the senior students which contributed to better performance, since they were fortunate to receive some coaching from them as a result.

9.4.3 Parental Influence

The influence of parents on students' school performance has been investigated extensively in numerous studies (see chapter 3.2). Some of the important points identified in the literature include the amount of time spent with children, parent involvement with school, educational level and economic status. The quantitative results from this study indicated the greater importance of the mothers' main job and educational level compared to that of the father. Based on the interviews with the students, the study was able to establish that the parents had a significant influence on the students in terms of encouragement, motivation and their professions. These factors affected both students' career choices and their performance in school. For example, one of the overachieving boys indicated that his father continuously emphasised to him the need to perform well in school in order to get good job as an adult, because he himself was not highly educated and consequently could not attain a higher post in his profession till his retirement from service.

‘My father tells me that he is old enough to be his boss's father, but because he did not go beyond primary school he cannot rise beyond the level that he was till he retired. I see that as one of the reasons to take my studies seriously, so that I do not end up like my father, who remained a junior staff member in his office for many years.’ (Abdul, OA male student)

Similarly, one of the underachieving students that spoke very good English yet performed poorly in English class explained that he always spoke English with his parents and siblings at home. However, this did not result in him performing well in the subject at school because, according to him, *‘English isn’t just about speaking, there is also writing, and reading aspects. And in those areas, I am weak... it’s not one of my best subjects’* (Underachieving male student). Similarly, one of the overachievers stated that professionalism has always been stressed in his family rather than to study a single subject at the university it would be better to identify a professional career path early. He mentioned that he especially admired, and took as role models, people who were successful, seasoned professionals.

‘My parents are professionals in different fields. I have always heard my dad telling people to choose a professional career so that after school they’ll have better chances of getting good jobs than those that study single subjects at the university. I have always admired people who are lawyers, bankers, engineers, and architects. My interest is in building and construction, which is similar to my father’s job, who is an architect, and my mother, who is a quantity surveyor.’ (Yusuf, OA male student)

‘I have to read every day. My father is a lawyer and my mother is a teacher and I want to study medicine in the university. They told me that I need to get good grades because only the best get admitted in the available space. This is why I put in more effort to be the best in my class.’ (Galadima, OA male student)

One of the students believed that his grades were sufficient to allow him to become a successful economist like his father and the country’s former Central Bank governor:

‘Economists are very intelligent people. With my grades now I think I would like to be an economist like the former Central Bank governor... just like my dad.’ (Baba, OA male student)

Amongst the sample were also students whose parents were subsistence farmers who had never gone to school. One of them said that her older siblings helped her with school work. She relied mainly on her elder sister for help in English and on her brother for science subjects. Another one said that after school she has to help on the farm and consequently had no time to revise at home.

‘My parents are farmers. They did not attend secondary school. Whenever I need help I always go to my elder sister. Since she did not study sciences, I also seek my brother’s help in sciences, but my sister is more helpful. They have been the ones helping me to understand my studies.’ (Maazatu, OA female student)

Another respondent, whose underachievement was caused by her unhappiness to be in the present school, blamed her low performance on her parents’ choice of school for her. According to her, the previous school suited her better because they offered extra activities that were not available in the present school. Also, she missed her friends, with whom she used to study, as she was yet to make those kinds of friends in her present school. This might explain her underachievement.

‘My parents chose the school for me because they felt that this school is better, but when I came, I did not like the school. I preferred my former school’. (Fatima, UA female student)

The study’s findings on parental influence from a socio-economic perspective extend to include the provision of extra lessons at home after school or during the holidays. One of the students said that her parents organised lessons at home for her and her siblings so that they would not spend all of their time playing video games. In her opinion, the one on one time with the teacher assisted her even in topics that had not been covered in class. She lamented that her school did not give homework assignments to students because the teachers had too much work to do. According to her, it would help others to engage with their studies at home.

Thus, this study found that significant others, specifically teachers, peers, seniors, parents and siblings, had considerable influence on the students’ AA. The overachievers tend to have good relationship with other people which helped in improving their performance unlike the underachievers. Amongst those interviewed were students who benefited from their teachers’ encouragement but remained underachievers, and those who were not happy with their teacher’s attitude and had to study a great deal to perform satisfactorily. Some factors that characterise the students were sometimes mixed. There were students who indicated that their friends contributed significantly more than the senior students were underachievers who fitted in to both groups. Those that acknowledged parents influence on their performance were mainly the overachievers than the underachievers. However, prior studies on LOC, such as Rotter (1966), established that the influence of others is only substantial with individuals who

have external LOC, i.e., who believe that they do not have control over events in their lives. Such individuals are the least likely to try to improve themselves in the future where as those who feel that they have control of factors that influence their lives have the tendency to attain good performance than expected compared to those that would not want to improve and eventually perform below expectations. Thus, these findings further explain the quantitative finding that most of the students have internal locus, even among the underachievers. Their views are more distinctive than the survey result and provided better insights into some of the findings at the first phase of the data collection.

9.5 Study Mode

The theme of study mode emerged as one of the factors affecting the students' grades, in particular, whether or not they relied solely on their teachers' guidance. In this regard, both the underachiever and the overachievers indicated that they engaged in personal study activities in addition to the lessons received by the teachers, which they thought helped them achieve better grades. There were students who felt that they did not gain much from their teachers, but studied on their own or depended on group discussions with classmates for comprehension. The underachievement of some of these students could possibly be because of poor teaching.

‘Sometimes in situations where teachers are weak, and I don’t understand or most of the students complain that they don’t understand, we read more from the available textbooks that we have. That is why sometimes students fail in those exams. The teachers will then blame the students while it is the fault of the teachers but you still need someone to explain it to you.’ (Umairah, UA female student)

‘I blame myself most of the time, but sometimes I blame the teachers. I do not ask if I do not understand. After class, I read more on my own and engage in group discussions. Anybody that has a problem will say it, if I know, I will explain it and they too will explain to me if they know it better’. (Fatima, UA female student)

These comments are evidence of external LOC, in line with the general LOC literature and the quantitative findings of this study, made by the underachievers. Some of the students

that believed that the teachers were not the problem, and who said that they understood the lessons, still reported engaging in personal study, practical, and group discussions. These students were exclusively overachievers.

‘We practice [by doing] some experiments on our own after classes; we have our personal timetables. After the group discussion, we then go to read. Sometimes we give topics to ourselves to read, depending on your performance in the subject or topic... I don’t blame my teachers; some teachers are actually trying their best’. (Yusuf, OA male student)

‘I think it contributes to two major factors. One is myself because I know there is more I can do to attain higher grades, which I am not doing, maybe I am not perfect... Our teachers are consistent.’ (Galadima, OA male student)

‘Since I get the best mark in chemistry, my friends expect me to explain it to them. So I have to read extra hard to understand it myself to be able to explain it to them. If I told them that I don’t know some things they don’t believe me. They think that I don’t want to help them. That is why I have to read extra hard to assist them.’ (Nazirah, OA female student)

These findings indicate that both groups of achievers engaged in extracurricular study activities outside of the lessons their teachers gave in class, but the overachievers showed more independence and greater focus than the underachievers, who still blamed the teacher at some point. In some ways, this finding is comparable to a previous study (Bodill & Roberts, 2013) which found that the mode of study differs between students with internal LOC and those with external LOC because the latter study less than the former.

Moreover, the study found that the exertion of effort on the part of the students was linked to their aspirations for jobs and for gaining admission to higher education. Such ambitions formed a critical aspect of their commitment to and seriousness about their performance. Ali, an overachieving student, stated that he must be the best in the class.

‘I have to study every day. My father is a lawyer and mother is a teacher, and I want to study medicine in the university. They told me that I need to get good grades because only the best get admitted in the available space. This is why I put in more effort to be the best in my class.’ (Galadima, OA male student)

‘In my thinking, the only way I can improve is through practice and through finding a group of friends that can help me with it. Maths is essential to becoming a chartered accountant.’ (Waziri, UA male student)

These comments confirm the variety of the students’ frames of reference. While the overachieving student indicated that the need to earn good grades was not only in order to become a medical student but also to stay on top of the class, the underachiever was focussed on personal improvement. This resonates with Marsh’s (1989) ideas about internal verses external frame of reference being used by students as the basis for their SC (see Chapter 4.2). Also Waziri despite being an underachiever still wanted learn and be successful.

The internality expressed by both low and high-achieving students in this study demonstrates that the underachievers have the desire to improve their performance as well as the overachievers. Nwankwo et al. (2012), in their study on well-functioning adolescents in south eastern Nigeria, found a higher correlation between those with internal LOC than those with external LOC. They explained that the exertion of effort amongst the underachieving students indicates a desire for success that comes from resilience and a strong sense of hope for the future. In this case, the effort taken towards obtaining better grades is a source of encouragement and a morale-booster. This result suggests that underachievers with internal LOC are better able to cope with academic rigour than those with external LOC. Also those who are considerate of others experience a more favourable school climate compare to others that are socially alienated (Bandura, et al., 1996). The similarity in the trends observed between students with internal and those with external LOC among the achievement groups points to the minimum contribution of the variable in the model of predicted AA.

9.6 School conditions

The conditions in schools has been noted by various authors (e.g. Lawrence & Vimala, 2012; Schaps, 2005) to be an important factor in AA, and to play a significant role in the development of learners’ innate potentialities. The findings from the quantitative data analysis showed that about 90% of the overachievers had high school motivation, compared to the 65% of underachievers who had low school motivation. However, despite the high level of school motivation amongst this group of students, the interview focused on determining which factors in the schools might have contributed to low academic achievement. The themes identified under this category were derived from the students’ responses and were based on

related themes that emerged from the literature review. These include the physical environment, well-being, and school programmes and activities.

9.6.1 The physical environment of the school

The physical environment comprises the buildings, instructional facilities, laboratory equipment, library material and services, and classroom settings and management. During the process of data collection, observations were made of the deplorable conditions of the school infrastructure (see Chapter 6.2). The conditions inside the classrooms were one of the main areas that came into focus during the interviews with the students. In particular, lack of space was identified as restricting the teachers' movement in the classrooms because of the overcrowding. The students' remarks indicated that in such situations, teachers found it difficult to navigate the classrooms to ensure that students were actually paying attention to the lesson.

‘For extra lessons we’re combined in one class with other science classes. If you come when the class is full, you’ll stay outside. If you stay outside, how can you hear what the teacher is saying? We copy the notes from the students that got to sit inside and look for someone to explain it to us.’ (Jummai, OA female student)

‘Like when the Antie [teacher] came in, our seat is at the back, so the class is too crowded. She teaches without speaking loudly. Only the people that sit in front of the class can hear what she is saying. If we tell her, she would say that she did not ask us to stay at the back. This is the problem, why I am not doing well in chemistry. The physics teacher will explain and tell us to go with her to the office if we do not understand, but people do understand so not very many people would follow her.’ (Maimuna, UA female student)

These comments show that the lack of space creates discomfort for both the teachers and the students. In addition, the distance between them can result in the teacher not being heard, which can prove to be a serious setback for the students, irrespective of their intelligence level. This finding affirms the high teacher-to-student ratio in Nigeria, which, according to UNESCO (2013), is one teacher for close to one hundred students. UNESCO recommends one teacher to a maximum of forty students. It was observed in one of the boys' schools in the

rural areas that the seats were bench seats that were supposed to have two students, but had four students each instead. Lawrence and Vimala (2012) found that an inadequate learning environment leads to a lack of motivation, alienation, and poor performance of the students and the teachers alike. Some students also pointed out the inadequacy of classroom utensils, such as dusters and chalk.

‘...but last term, many people failed maths. I think the teacher is the problem, because if the teacher came to the class and did not find chalk or a duster, she’ll just give us the notes and say that we should just go and make it on our own. That’s the punishment she gave us last time.’ (Fatimah, UA female student)

The study found that schools located in urban areas had better infrastructure and fewer underachieving students than those that were located in the rural areas. The result of the quantitative analysis of this study, relates to most literature (Alokan & Arijesuyo, 2013; Owioye, 2011), indicated that students that attended urban schools performed better than those in rural areas.

‘The place is well built and beautiful but sometimes the drugs are not much there, sometimes when you go for a stomach ache they will give you the same medicine that they give to others that complained of different sickness.’ (Sakina, UA female student)

‘Only SS (senior secondary) students attend computer lab. We go there on Thursday. There are many students but when there are external exams, we are not allowed to attend until the exams are over’. (Tahir, UA boy)

These comments indicate that the urban schools have better facilities than the schools in rural areas, which was also observed during the visit to the schools. Most of the schools with computer pools are located in the cities due to the availability of generators used during standardised examinations. These schools are centres for taking the university matriculation exam, which is computer based. Students that have never had access to a computer will therefore be at a disadvantage in preparing to go on to higher education, and not because of lacking knowledge of the subject matter. The issue of inadequate facilities cut across both groups of students, and even in schools that were seen to be better equipped.

9.6.2 Inadequate library and laboratory facilities

The issue of inadequate facilities was one of the major factors that were identified by the students in their library and science laboratories. One of the students noted that there were no recent textbooks in their library and that they had to depend on the textbooks that they brought from their homes and those who did not have books share with the friends that had them.

‘We do not go to the library because there are no books. Most of the books are very old books and are not interesting; we only use our own books or share with our friends that have the ones that we do not have. Sometimes I tell my parent to buy for me if I see any good science textbooks with my friends.’
(Galadima, OA boy)

Also when the students were asked how often they attended the library one of them said that neither she nor the other students went to the library throughout their stay in the school. This may signify inappropriateness of the library as a place to study.

‘I have never been to the school library but we know where it is. No one goes to the library since I came to this school, we read in our classes and our hostels.’
(Mainuna, UA female student)

The study finds that the laboratories were ill-equipped and were not properly furnished. The laboratories were highly needed for science practicals which is an integral part of the standardised examinations in subjects like biology, chemistry and physics. The inadequacy of the laboratory facilities can lead student to low performance when all the grades in the different areas of the subjects are added together.

‘I want the school... like this... in the school premise... let me, let me say for examples for our labs, we don’t have enough equipment. Some of the things that we are supposed to do we do not do them but read about them in the books or during class lessons by the teachers.’ (Hassana, OA female student)

‘We want enough equipment in our laboratories, we want enough equipment in our laboratories like this: furniture; we want. And students need.. in the school, we need more water...’ (Galadima, OA male student)

The issue of inadequate facilities are presumably one of the reasons for the underachievement of most science students in their final year examinations, which is an eternal factor to the

students. For this reason parents would rather send their children to private schools where the facilities are better equipped (Olasehinde & Olatayo, 2014).

9.6.3 Health and well-being

Students' health and well-being was another theme that was identified from the students. This theme emerged as one of the aspects of the school that did not motivate the students and impact negatively, making them to underachieve. The study found that the areas that created the most discomfort for the students in terms of their well-being, such as physical discomfort and ailment, were the inadequate water supply and health facilities

Inadequate water supply. Inadequate water supply was a prevalent factor in many of the schools and one which affects the students' school attendance, AA and the environment (Lawani et al., 2014; Oloruntoba et al., 2008). This study found that lack of an adequate water supply was an aspect of many of the issues that affected the students' performance. In most of the schools, boreholes were dug to supplement pipe-borne water, which was always in short supply. This was a sign of the government's efforts as well as of collaboration from international organisations (UNICEF, and the International Water and Sanitation Centre) to assist the country in meeting the millennium development goal in ensuring adequate water supply for schools (Vanguard News, 2012). However, the students' responses in the interviews indicated that they experienced hardship in obtaining a consistent supply of water for personal use. The students showed that the provisions made were insufficient for the large population of students in the schools. Furthermore, there were times that the boreholes were damaged and it took time before they were repaired, yet they remained more constant than the pipe-borne water supply.

‘It's only 3 boreholes that we have in the school, which hasn't been easy for us. They were provided to support [supplement] the tap water, but since the second term, there had not been water from the tap, so we have been managing with the boreholes. They are not connected to the pipes; we come and fetch water with our buckets. Presently, one of the boreholes has spoilt; we are left with two for all the students in nine hostels. This is how we have been surviving, without water and good toilets.’ (Nnagi, OA female student in an urban school)

‘...like in the hostels sometimes the boreholes will spoil and the students will be suffering to get water. Sometimes we get late to class in the process of looking for water and the teachers are not happy about that’. (Suleiman, underachieving male student, in a rural school)

‘If we did not get water early, [then] either we get to brush our teeth or wash parts of our body, then we just wear the uniform to class. When we come back from class, we’ll go there early to fetch water with our buckets, then we take our bath afterwards.’ (Saadatu, OA in urban school)

‘At the weekends we go to the stream to wash our clothes when there is no water in the school’. (Ndako, OA in rural school)

These excerpts suggest that the difficulty of obtaining water cuts across schools irrespective of their location and the overall performance level of the students. Many of the students’ responses support Lawani’s (2014) finding that 80% of the respondents used borehole water, while 20% walked meters away from their schools to obtain water for domestic use, most of who were students in the boarding house. One of the respondents indicated that when they get water, it is often so cold that it is difficult to use in the mornings.

‘When we wake up early in the morning to pray, it’s so cold, we don’t get warm water to perform ablution or to bath. After that, we are usually rushed to do every other thing, because like we have just one hour to clean your room, to shower in the morning, most times we leave everything to afternoon.’ (Abdul, OA male student in a rural school)

As pointed out by some of the respondents, the inadequate water supply affected toilet use, and because this is a critical human necessity, they had to resolve it to find the means to relieve themselves.

‘We are managing with the toilets but if students want to defecate they will go to the ‘bola’ [open space] and defecate, but we are managing. Some have their bath outside, some enter the toilet to have their baths, but everybody is... managing’. (Fatimah, UA female student)

When asked about the cleaning of the toilets, the surprising answer was that, in some schools, there were no custodians; rather, it was the responsibility of the students themselves.

‘Students are trying their best to wash the toilets to keep them clean’.

‘You don’t have cleaners that clean your toilets?’

‘The cleaners that we have in the school clean only the school compound, while we clean and sweep the classrooms and the hostel areas. We cut the grass when we return back from a long vacation or as punishment for resuming late to school’. (Hassana, OA female student in an urban school)

‘Well, they clean the bathroom, that’s really it. We do the rest - our own dormitories, we take care of ourselves.’ (Waziri, UA male student)

These findings confirm Vanguard News’ (2015) summation of the lack of alternatives available to people that practice open defecation, or who neither wash their hands with soap and water before eating nor after using the toilet. In addition, Oloruntoba et al. (2008) extended the argument of inadequate provision of water and sanitary school facilities to include ‘trust to use them properly’, particularly among the girls. The lack of sanitary facilities in the schools has been listed as a major factor in why some girls stay out of school (Maikudi, 2013). Most of these studies have indicated that many incidences of students’ illnesses were caused by water and sanitary-related diseases, such as parasitic and helminthic infections. Also, they have noted that environmental pollution can lead to the spread of contagious diseases, detrimental to both the environment and the populace. This was seen recently in the outbreak of Ebola. Insufficient water supplies and sanitary facilities adversely effects enrolment rates, school engagement and academic performance while increasing absenteeism and the dropout rate. The next section details some of the findings on illness and health related issues.

Illness, clinics, and medicine. A number of participants brought up issues related to medical facilities and the poor treatment of students when they were ill. At the time of the survey, one of the participants was sent home for medical treatment and had to complete the questionnaire two weeks later when she returned. As a result, of her illness, she missed classes, which negatively affected her performance, as revealed by the fact that she scored below her predicted scores. The students confirmed during the interviews that the schools provide treatment but that when illnesses persist, they are sent home to their parents. In some cases, the students requested that they be sent home in situations where medicine is unavailable.

‘They will start to give us treatment from the school clinic, but if they see that there is no improvement, they will take you to the hospital, although in my case I requested to be sent home. My mum will go and have the test done by herself’.
(Umaira, UA female student)

‘The place is well built and beautiful but they don’t have adequate drugs because when you go for a stomach ache they will give you different medicine’.
(Faridah, UA female student)

AA: ‘How do you know that the medicines are not appropriate?’

Faridah: ‘It is different from the one that the doctor prescribes for me at home, if you insist, the nurse will tell you that it has finished, and they’ll give you Panadol irrespective of your kind of sickness. That is always the problem.’

AA: ‘What if you don’t get well?’

Faridah: ‘We’ll inform the principal and she’ll give us a pass to go home’.

One of the students explained that his school allows two weeks’ medical leave, but that students could stay at home longer if they wish because, in the absence of any follow-ups from them, the school assumes that they might still be taking medications. In such an awful situation, it not surprising that some students were doing less well than others in schools. The student said that:

‘When my mother came to take me home, the school did not provide us any vehicle to take us, so my mother had to hire public transport. She did not know that I was very sick because the school did not inform her officially, and when I went home, they did not even care to check if I was fine or not. I only came back that term to take my exams without attending any lessons.’ (Nasri, UA male student)

These responses indicate the care provided to ill students was insufficient, to the extent that the students had lost faith in the schools’ medical facilities, as indicated by the student who said that her parents preferred to have their own doctor run medical tests. It is expected that the students should be adequately looked after by the schools as a means of necessity. To that end, they should have access to the general hospital as well as to ambulances in the case of emergency. This goes to show the general welfare of the students in the sampled schools was

poor, and consequently, irrespective of their positive SC, SM, and internality in LOC, many of the students are unable to perform satisfactorily in school. This leads to another sub-theme under school conditions, that of programmes and activities.

9.7 School programmes and activities

The study established that schools' extracurricular programmes and activities, where they are offered, contribute to students' academic achievement. Nearly 80% of the overachievers noted that their grades had improved due to extra lessons that they received from the school, although this was not available to all the students in all the schools. Some of the issues they raised on this point were in the number of days and the amount of time on those days allotted for extra lessons, the subjects offered, and the lack of attendance by the teachers. The study found that emphasis was placed on the general subjects, such as maths and English, which may be due to their importance and the need for all students to have credits in them regardless of their subject combination in order to secure admission into tertiary institutions in the country.

‘There are extra lessons only on Wednesdays and Thursdays. After school, at 2 o'clock (pm), we go back to the hostel, and then by 4, we come back for [extra] lessons, and close by 6 (pm). We are offered only 4 (pm) subjects for lessons [tutoring], and it is one hour each in a week: maths and English on Wednesday, while on Thursday they teach chemistry and biology. That is all. For all the others you are on your own.’ (Quassim, OA male student)

‘Only maths and English teachers come for tutorials to revise the topics that we covered in the morning. Except in situations where students do not have problems with the earlier topic, [only then] new topics are discussed.’ (Nnagi, OA female student)

One of the students, who had transferred from another school, described her dissatisfaction with the present school for not organising evening tutoring sessions, which she maintained had helped her considerably at her old school.

‘The difference is that in this school, they only do afternoon lessons, they do not do evening prep and morning devotion, but in my former school we always used to do evening prep after food, but here there is nothing like that. I have to

endure and continue here, maybe things will change.’ (Farida, underachieving female student)

Farida appears to have been alienated in the present school and thereby think and behave in a way that negatively affects her AA. One of the students, who seemed happy with the organisation of the school programme and timetable, stated:

‘The things I like most about being in boarding school is that the school is set in a way that I have time for everything. Everything is pre-planned for me; there is time to read, to rest and to play.’ (Yusuf, overachieving male student)

However, having stated their views on the extra lessons offered by their schools, the students indicated that they had their own individual reading strategies and schedules that helped them achieve better grades. Seventy percent of the interviewees had such individual or group discussion timetables.

‘We have our own personal timetables and we arrange group discussions too. Teachers don’t come during prep. Sometimes we give topics to people who perform better in particular areas to explain to us’. (Fatima, UA female student)

‘I have some textbooks that I read. Anytime she [the teacher] gives notes without adequate explanations, I go through my textbooks and have some understanding’. (Baba, OA male student)

‘We used to do group discussions and every time I have my personal timetable that I use to go to class every day, I have my subjects which I made for myself’. (Yusuf, OA male student)

‘I think it [is because of] 2 major factors. One is myself, because I know there is more I can do, maybe I am not perfect... I know there is more I can still do to attain higher grades...’ (Nasri, UA male student)

Regarding school activities, the students noted the lack of homework, especially during the holidays. They believed that it would help them to be occupied while at home because not all of them could engage in academic activities at home. Two of the underachievers, however, did not feel there was a need for assignments during the holidays because this time was supposed to be a break from school, and another said that she helped her mother sell in the market every day except Sundays.

‘I prefer them to be giving us holiday assignments, it will help us not to get totally carried away and it will help us in the future to work even when we are no longer in school. Students get so busy doing other things that are not related to academics.’ (Papa, OA male student)

One student raised the issue of feedback from the teachers. He stated that they do not always receive test scores or results, which would apprise them of areas in which they did well and those in which they did not excel. This would help them identify subjects or topics in which they needed to exert more effort.

Overall, the findings about extracurricular programmes and activities reveal the students’ awareness of the factors that have helped them as well as of what the schools need to do to help them improve their performance. Some of them suggested that increasing the number of days on which tutoring is offered, including more subjects, and increasing the teachers’ involvement would be beneficial. Others were enthusiastic about receiving homework assignments at term time and over the holidays, in addition to immediate feedback. Furthermore, it was clear that the overachievers were more engaged in academic activities outside of their lessons than the underachievers. This could be due to availability of some of the activities in some of the schools, since some students complained of lack of extra lessons in their school for instance. Some of them actively sought out group discussions, read textbooks beyond what the course required, and had tutors organised by their parents.

9.8 Students’ levels of communication and interaction within the school

The study identified different forms of communication channels that the students utilised in the schools. These various forms of communication and interaction were found to influence the students’ self-concept, locus of control, school motivation, and academic achievement. They were discerned in particular in the classroom interactions between the students and the teachers. Based on the teacher’s mode of interaction with the students and their enthusiasm for doing so, the students were able to infer his or her level of willingness to engage with them and support them beyond the basic level of instruction in their lessons and the scores they obtained. For example, one student with an average mark of 50% in two subjects was happy with the score in one of the subjects but not in the other, based solely on the teacher interest and show of concern.

‘Our English teacher is very nice, she will always explain and will tell us that if we still do not understand we can come to her office and she will explain to us again... In English I got 55 and 54 in civics but I am happy more with the English score because the teacher is trying her best for us’. (Tahir, UA male student)

‘She teaches without speaking loudly, only the people in the front can hear her. If we tell her, she will tell us that she did not ask us to sit at the back. This is why I am not good in English, unlike in other subjects; our physics teacher will tell us to follow her to her office for more explanation. But usually, people do understand so not many people go to see her.’ (Nnagi, OA female student)

‘When she enters the class, she’ll just write it down, and she’ll ask us... Do you know how we get it?’ ‘This is equal to this, that is equal to that, she’ll not make us to understand, before you know what is happening, the lesson is over and I will not understand. [Hisses]’. (Fatima, UA female student)

These comments demonstrate the various levels of teachers’ communicativeness and their different attitudes, which elicited either positive or negative perceptions from the students. With the teacher that welcomed communication outside of the classroom, the opportunity was found to be unnecessary by the students because her lessons had already been effectively communicated in the classroom. This shows the wide range of skills and competences among the teachers which can have a direct influence on students’ learning and performance, unlike in some developed countries like UK and America where teachers may have similar education and competency levels. Brown (2007) asserted that students can improve their AA and self-perception when teachers are responsive to them and create a more conducive atmosphere for them to connect beyond the classroom. This means that the vast differences in teacher quality might have constituted a big effect in learning for the different groups of students in this study. One of the students acknowledged that they were not prevented from meeting the teachers, but according to him, ‘*It’s not something you feel invited to do*’. This suggested low levels of communication and interaction with the teachers outside of the classroom.

Another level of communication identified by the study was the interaction between the senior and junior students, which are seen as a major factor that made the students to underachieve. There were those that had good relationships with the senior students (as explained earlier), which made it easy to approach them to seek help with their studies. Others

reported being treated very badly by the seniors, because of which they could not seek assistance. The students in this group would rather not ask for assistance from any of the senior students in respect to school work. Those that had good relationships with the senior students benefited and had higher achievement. The students' relationships with their classmates and friends were not intense like those with the senior students. Discussion groups were frequently formed among students at similar levels and age groups, and these did not involve difficult power relationships.

The relationship between the students and the matrons was another form of interaction that was identified. One of the respondents mentioned that the students were left alone in the hostel without their matrons, who are charged with ensuring that there are no problems in the hostels. This participant stated that the matron who was supposed to live with them was engaged with other business that required her to travel all the time. It can be argued that if the matrons performed their duties effectively there would be fewer cases of senior students bullying juniors. Another respondent acknowledged that the principal continuously warned against bullying, but that it persisted nevertheless. She added that actions were taken against those that were found guilty but that the victims did not like to report it because of fear. Studies (Fareo, 2015; Aluede, 2011) have indicated that bullying in Nigerian schools does not cause only physical harm but also psychological trauma that made schools less secure, safe and conducive to learning. In all, the different levels of communication and interaction were found to greatly affect the students' self- concept, locus of control, school motivation, and academic achievement.

9.9 Conclusion

This chapter focused mainly on analysing the interview data, in order to clarify the results of the quantitative data. The findings highlighted the students' perceptions of their self-concept, locus of control and school motivation as well as various factors that affect their differential academic achievement. From the students' responses, there were multiple and complex factors that influenced their AA. In their views, the students tried to engage in some activities in order to improve their performance. In support of the quantitative findings on motivation, many of the underachievers seemed just as motivated as the overachievers. Despite that, some differences were identified that differentiate the groups (OA & UA) in their performance in school.

One of these factors was variations in aspiration, where the overachievers had clearer ideas on their career choice than the underachievers because of their AA scores. Others factors identified were different modes of study, including group discussions, the involvement of senior students, and reading beyond what the classroom lessons require. In addition, the influence of significant people, such as teachers, peers, and parents, on students' performance was described. These findings indicated that the underachievement of some students could perhaps be attributed to factors beyond the students' control rather than being based on personality factors alone. Some of these provided difficulties in specifying the certain characterising to the groups. However unlike in the quantitative result which shows that the underachievers were mostly internals in LOC, the interview show that overachiever attribute outcomes to internal factors such as effort and ability than the underachievers. This may be the reason for the low relationship between LOC and AA (Chapter 7.3.3) and made little contribution in the AA model (Table 8.8). The following chapter discusses the findings further in the next chapter.

Chapter Ten

Discussion and Implications of Findings

10.1 Introduction

Following the analysis of the empirical data in the previous chapters, this chapter discusses the findings of the study and their implications for the Nigerian education system. The discussion is based on the research questions raised in chapter one, which had to do with examining the factors that might be responsible for the low academic performance of students in northern Nigeria. This is of interest because the improvement in academic achievement (AA) witnessed in Nigeria in recent times has been mainly among students from the southern region (see Chapter One). As expected, improvements in educational standards in the country require collective improvement throughout all of the regions. The educational disparity between the regions can be traced to historical antecedents such as the late introduction of Western education to the north and northerners' reluctance to embrace it. This was largely due to religious factors such as the fear of conversion to Christianity, which was the initial aim of the missionaries that introduced it to the country in the 19th century. Eventually, when Western education started to spread into the northern region, it reduced the autonomy of Islamic education on the one hand, and on the other hand, the prevalence of the Islamic religion in the north slowed the development of Western education in comparison to the rate of development in the southern region. At the same time, students in the two regions were expected to perform according to a common standard set by the Ministry of Education despite the discrepancy in infrastructure. Consequently, southern students still manage to perform better on standardised examinations than northern students. The higher educational attainment among southerners over the years contributed to greater economic prosperity in their region than in the northern region (Okobiah, 2002).

Nevertheless, personality aspect of AA has not been well-researched in NN in comparison with the southern region that has higher educational progress over a century. Such research is essential to indicate some of the major areas of potential focus for efforts at improvement and to provide much needed information for effective future policies and practice. Of the studies that have been conducted on AA in the north, most have focused more on social and structural facilities (Ali et al., 2014; Lekwot, et al. 2014) than on psychological, personality or affective factors. Moreover, one major finding on AA that sets this study apart from similar previous

empirical studies is the way the terms overachievers and underachievers were applied to indicate differences in academic ability. This focused exclusively on psychological conceptions of the terms. Conversely, in this study, students were described as underachievers and overachievers not because they had low or high test scores (grades) but because they performed below or above their expected level of AA as the case may be (see Chapter 8.4). This is similar to Smith (2002) who argues that an underachiever would be someone who achieved lower than expected given a set of predictive variables. Thus, there were students with low scores (and some with high scores) that performed better than expected when explanatory variables are taken into account; these were identified in this study as overachievers. In addition, the focus on the students' demographic factors, including age, gender, ethnicity and SES, helped in grouping the students across different ability ranges, which is an improvement from previous studies on AA. This in essence includes combination of sociological and psychological factors influencing students' attainments in school. The reason for considering these factors was to identify the leading factors hindering students' AA.

Hence, a mixed method approach to data collection and analysis was used. The aim of this chapter is to bring together the findings from the empirical phase of the study into a coherent whole, although a substantial amount of analysis and interpretation has already been done alongside the presentation of the findings in the previous chapters. This presents an overall summary of the thesis' findings and contributions to the conceptual framework on which the study is based. The next section of the chapter presents the discussion about the descriptive findings related to each of the conceptual variables (SC, LOC, and SM) as well as the background factors in relation to AA. This is then followed by the discussion about the regression model, the division of students into achievement groups, and the differences between these groups. The chapter concludes with the implications of the findings for the Nigerian educational system.

These discussions were based on an exploration of each of the five research questions that the study set out to answer. This begins with a discussion of the relationship between SC and AA, followed by the relationship between LOC and AA and between SM and AA, which were the first three (and main) research questions for this study. These relationships were explored in more detail in chapter four. The section on the regression discusses the contribution and impact of the conceptual framework and the background factors in order to answer the fourth and fifth research questions.

10.2 Academic achievement in relation to self-concept and background factors

Self-concept has been defined in terms of students' personal perceptions and evaluation of their academic performance and achievements (Burns, 1982). In order to answer the research questions, each of the concepts (SC and AA) were measured separately before the relationships between them were explored (see Chapter Six for the results). Since SC refers to the students' perception of their performance, data were collected on maths and English SC. Perceptions of the students' academic ability in these subjects form the students' academic SC (in this study) that was correlated to their actual achievement scores in the two subjects. The results indicated a mean of 3.25 on a scale of 5.00 for maths SC and 2.29 for English SC; this yielded a total mean of 3.05 for their (academic) SC. Based on this result, the study found that about 65% of the students had high self-concept while 35% had low self-concept. The result for AA score was 47%, consisting of a 50% mean for maths AA and 44% for English achievement scores. This indicates that even though there were more students with high SC than with low SC in both subjects, the students had higher attainment scores in maths than English.

The scores for the two variables were then correlated, and the results indicated an 83% coefficient of correlation between SC and AA. This showed a strong positive relationship between these two variables. This demonstrates that the students who scored highly in SC also had high scores in AA, while those that had low scores in SC also had lower achievement results. This result affirms the findings of other studies about the relationship between SC and AA (Moller & Pohlmann, 2010; Pinxten et al., Obilor, 2012 and Marsh, 1999) which all reported high positive relationships between SC and AA. The patterns of the relationships found in these results support the specificity of SC and AA (Marsh & Yeung, 1997; O'mara & Marsh, 2006; Huang, 2011). In Obilor's (2012) study, maths SC correlated more with maths AA (0.74) than with English (0.33) or combined AA (0.64). This was similar to the result for English SC and AA in this study (AA: 0.76, MA: 0.48, EA: 0.81).

Whilst this finding confirms the positive aspects of the relationship between specific domains of AA and SC in Maths and English described in the literature (see Chapter 4.2), this study found that the combined SC related more with the combined AA than either of the specific domains. With regard to the relationship between SC and AA, based on the combined and specific scores, Pinxten et al.'s (2015) study found a negative relationship between the combined SC scores in maths and verbal ability and each of the specific AA scores, across the specific domains. This is contrary to the findings of this study, as here, the relationships

between the combined scores related to each of the specific domains of AA (maths and English) but the coefficient of correlation was lower. Pinxten et al.'s (2015) study found a negative correlation. The results for this study were expected because each of the participants' scores formed part of the combined AA scores.

Overall, the findings about the positive relationships between SC and AA in this study does not imply a causal relationship between the variables, which was the argument presented by the reciprocal effect model of SC (see Chapter four). Scholars have not been able to establish clearly which variable, SC or AA, precipitates the other (Marsh & Yeung, 1997; Guay et al., 2004; O'mara & Marsh, 2006). Marsh and Yeung (1997) asserted that the relationship did not reveal which of the two had an effect on the other, but indicated that they were reciprocal. Based on Marsh's (1987) longitudinal study of adolescents in Australia, he determined that prior SC influences subsequent AA in the same way that prior AA contributes to subsequent SC, irrespective of which among them preceded the other.

Furthermore, considering the aim of improving performance, the results of the relationship between SC and AA would be better linked to the self-enhancement model of SC (Chapter 4.2.1), since it posits that SC improves AA. This implies that greater effort towards the development of SC would be at the detriment of AA. In order to sustain high-quality performance, both SC and AA need to be fostered simultaneously (Marsh, 1990). Other studies (Helmke & VanAken, 1995; Skaalvik et al., 2001) that found support for the skill development model reported that AA improves as a result of increased SC, a notion which does not conform to the focus of this study. In addition, other studies (Ockey & Abercrombie, 2012) found no relationship between SC and AA. However, it is clear from the analysis of the positive perceptions of the students in this study that it indeed had an impact on their AA.

Having explained and linked the relationship between the main findings and the literature, the combined AA results and the SC models, the next sub-section discusses the findings about the influence of the background factors on SC and AA. It begins with discussing the influence of gender, parental profession and mother's educational level.

10.2.1 Background factors, self-concept and academic achievement

The study also found that some of the students' background factors influenced the relationship between SC and AA. This finding helped to identify which students were likely to have good

AA. Regarding gender, the findings showed a similar relationship between SC and AA for both boys and girls (Tables 8.1). Amongst both genders, those who performed better also had high SC, but the coefficient of correlation for the boys was 10% higher than the girls. There were more boys with high scores in both SC and AA than girls. This result shows some areas of similarity and differences with Wach et al.'s (2015) whose study had three categories of findings. In the first instance their findings showed that girls had higher ability in verbal tests than boys which negates the findings of the present study. Apart from the fact that the boys surpass the girls in some tests (maths) which are similar to this study and lastly differences (between boys & girls) were not found in self-perception in the specific domains. Wach et al.'s findings (2015) can be linked to the influence of 'gender-stereotype beliefs' in line with many other studies on gender (Speilhofer et al., 2007). Also studies by Arens et al. (2016), Helmke et al. (1995) and Moller and Pohlmann (2010) reported no gender variation between SC and AA among different ages and school levels, at preschool school, elementary schools and secondary schools.

The study also established (from the analysis of the results in chapter seven) the influence of the parents on the relationship between SC and students' achievement. The results showed that the mother's occupation had the greatest effect (1.21), followed by the father's job (0.65) and then the mother's educational level (0.18). The students whose parents worked in the formal sector and those whose mothers had attained a tertiary-level education had a better perception of their AA and had higher achievement scores than those whose parents worked in the informal sector and those whose mothers did not attain tertiary education. This result is consistent with most of the literature (Ghaemi et al., 2014; Osuafor et al., 2013; De Serf, 2002), signifying the importance of socio-economic status (SES) in children's school performance. This result was not surprising because the people employed in the informal sector tended to be self-employed, unemployed, engaged in home duties, or doing skilled and unskilled jobs (Chapter 6.3.6), which would mean a lower income and in most cases educational level compared to those working in formal sector jobs. Most of the parents working in the formal sector could afford to provide better educational facilities and a more enabling home environment (which might include hiring tutors) than parents with informal sector jobs. In addition, low-income parents tended to work longer hours (Udida et al., 2012) to earn more money and consequently may have had less time to spend with their children.

The results regarding the influence of the mother's educational level (chapter 3.3.1) revealed the mother's greater proximal importance to the child compared to the father. This suggests

that educated mothers were better positioned to easily identify and assist with school tasks than fathers. They desired and required higher academic performance from their children largely than the less educated mothers (Onzima, 2011), as this result has shown. Therefore, mothers with a higher educational level would most likely improve their children's SC and AA. It is, however, surprising that more than 50% of both parents had attained a tertiary education but fewer than 40% of the students had above-average AA and only 56% of the students had high SC. This simply shows that the influence of the mothers' education is greater on SC than on AA. Arguably, children's SC can be enhanced much earlier in life by listening to their parents talk about their own school experiences (especially if they were positive) and by the parents taking an active role in preparing to leave the house in the morning together to take the children to school before they go to work (Ibrahim & Jamil, 2013). However, a ten year longitudinal study by Guay et al. (2004) did not find differences in the pattern of relationship between SC and AA based on SES of the families. The inconsistency between their finding and that of this study perhaps may be due to the missing values found on the indicators of SES during their data analysis. Some of the students might have left the school for one reason or the other, since it was a longitudinal study. The next section discusses the findings relating to the second research question, which concerns the relationship between LOC and AA.

10.3 Academic achievement in relation to locus of control and background factors

Locus of control is defined in terms of students' attribution of performance outcomes to internal or external factors (Suphi & Yaratan, 2012). In exploring the relationship between LOC and AA, the variables were measured separately before determining their correlations. The achievement score comprised students' mean scores in maths and English, as discussed above. The study established that 73% of the students had internal LOC while 27% had external LOC. The results for AA indicated that 40% of the students had above average scores in AA while 60% had below average scores. The study therefore found a low but positive relationship between LOC and AA (0.38). This finding shows that most of the students, irrespective of their AA scores, had internal LOC. This suggests that the majority believed that the outcome of their AA depends primarily on their own efforts and ability.

This result resonates with most of the literature on these variables (Curtis & Trice, 2013; Mei-Mei & Chiung-Mei, 2009; Hrackova et al., 2012; Chan, 2010). A weak level of association

conforms to the findings of Suphi and Yaratana (2012), who attributed deep learning strategies to students with internal LOC and surface learning to those with external LOC, which makes them less successful achievers than those with external LOC. Also, Shell and Husman's (2008) study affirmed that the attribution of success or failure to grades and learning is typical among younger groups of students with different achievement levels. Moderate levels of academic expectations and anxiety (which are characteristic of students with external LOC) among the students who attributed their performance to their own efforts and strategies, justified the weak relationship observed in their study. This is similar to the situation among this study's sample, where 82% attributed 'doing well in school' to their own efforts, although their AA was low. The findings here demonstrate that the perceived source of success or failure underpins LOC. Students with different AA scores can have similar LOC. However, those with internal LOC spent more time on assignments, studied longer hours and set more realistic goals than those with external LOC (Grantz & Kurth-Schai, 2006).

Studies that found a greater degree of positive correlation than this study align more with Rotter's (1966) model of LOC (see Chapter four). He theorized that internal and external LOC is on a continuum. A person can either have an internal control or external control beliefs, and these will serve as reinforcement towards future activities. According to him, those with internal LOC feel that they are the reason for their own outcomes that is why they attribute success or failure to their efforts, skills and abilities rather than to such factors as luck, chance, other people or faith, which is common among those with external control. These factors, in Rotter's view, make the internals more successful than the externals because even in the face of failure, they are more likely to work towards progress than the externals, who will not be motivated to improve. Given that most of the students in this study had internal LOC beliefs, there is a tendency among them to want to engage in activities that would lead to improved AA.

However, Weiner's (2007) theory of causal attribution argues that the conceptualisation of LOC on a continuum was inadequate to explain peoples' control beliefs, which he extended to include stability and controllability (see chapter 4.3). A person's locus of control can be stable or unstable over time and on particular issues, and may or may not be controllable. Thus, the focus and findings of this study resonate more with Rotter's (1966) theory, considering the study's framework and the academic levels of the students. Weiner's scale was considered for the study, but experts in the field found it to be beyond the understandings of the least ability students, since the scale measures also the controllability and stability of

the LOC belief which had heavily loaded items that might confuse the students (see Chapter 4.3.2). This is therefore not linked to using the scale for data collection.

Locus of control thus relates to the thinking process that leads people to act and learn in different ways. It is indicative of aspects of strength and weakness in a student's engagement of tasks towards high achievement (Herbackova et al., 2012). The internal LOC found among the students in this study relates to the expectancy value theory, which shows that people pursue desirable, interesting and enjoyable outcomes. The students in this study stated that hard work, practice and resilience would yield good results. Those with external LOC tend to give up easily because they perceive their expectations to be beyond their control and resist further attempts at school work.

This finding is consistent with the study carried out by Herbackova et al. (2012) among university students in the Czech Republic. They reported influences of internal LOC on AA, but not the same for external LOC. They identified three metacognitive processes used by students with internal LOC to perform better. These were personal knowledge, task knowledge and strategy knowledge. They added that the application of all of these helps the internals to be aware of their personal limitations (memory, attentiveness and comprehension levels), understand task demands and use different strategies to approach learning. This is similar to Suphi and Yaratan (2011) and Chang (2012), whose studies linked internal LOC to deep learning approaches. The students in this study with internal LOC as well as high AA were probably those who applied the three metacognitive processes, while the others applied only one or two of the processes. Those with external LOC and low achievement scores can be said to have used none of the processes, which is why Suphi and Yaratan (2011) findings relate well with this study's findings. Thus, the findings indicate positive feelings towards study and improved AA among the students. The next section discusses the influence of the background factors on the relationship between LOC and AA.

10.3.1 Background factors, locus of control and academic achievement

The study found small differences among various groups of students who differ in terms of gender, age and SES. With all of the background factors, small effect sizes were found (see Chapter 8) according to gender and age, while the parents' professions had a moderate effect size and parental educational level had a close to zero effect size.

Regarding gender, the study revealed differences in internal LOC and AA. The girls with internal LOC were mostly low achievers while the boys were mostly high achievers (effect size: 0.17). The results showed a similar pattern between the girls and the boys who had external LOC, most of whom had low achievement scores. Affirming this finding is a longitudinal study by Wang and Su (2013) showing changes in LOC in male and female students over a period of three years. The study revealed changes among the male students who had internal LOC in the first two years of their study and changes to external LOC in their third year, while the girls remained externals throughout. This result is in line with the literature indicating that men are more likely to have internal LOC than women. This is because girls are notably more susceptible to social influences than boys, who desire to have control, or believe they have control, based on their own efforts (Phares, 1976).

Smith et al. (1997) linked the differences by gender (in LOC and AA) to the communal and agentic attributes of men and women. Men have agentic attributes due to their assertive and independent nature, while women have naturalistic and interpersonal sensitivity. In addition, Eisenkopf et al. (2014) found support for single sex schools for female students based on the findings concerning the students' high performance in traditionally male-dominated subjects (maths and sciences). They posited that this would make women's achievement less dependent on personality factors. This aligns with the findings of this study on the types of schools based on gender. Students at single sex schools had higher scores on LOC and AA.

The difference found regarding age was small in favour of the younger group of students. Previous studies have demonstrated age difference in the relationship between locus of control and AA (Litvinova et al., 2015). Advancement in age and grade level are associated with an increase in knowledge and independence regarding the influence of others, such as parents and teachers (Gullota et al., 2008). As children grow older they become more internal than external in LOC, but when children are held back at particular grades, they tend to be external in LOC. Most of these children find explanations for their delay in factors such as luck, situation, and the influence of others. A similar study (Litvinova et al., 2015) with a contrary finding on age in Nigeria emphasized the promotion of personality traits of internal LOC due to its long term effect on achievement, while Grantz (2006) advocated the inculcation of these attributes in children at an early age, in order to encourage the development of diligence and resilience from the start.

Regarding the parents' SES, the study established differences in the pattern of relationships (between LOC and AA) among students with high and low SES. The students whose mothers work in the formal sector (i.e. professionals and civil servants) performed better academically irrespective of their differences in LOC, while those whose mothers worked in the informal sector group achieved lower scores, whether they had external or internal LOC. The result for the fathers was similar to those of the mothers in the informal group but differences were found among the formal sector groups; while the internals (in LOC) had more high achievers, most of the externals achieved lower scores in AA (see tables 8.3 and 8.4). This suggests then that family SES is a more important determinant of AA than LOC. However contrary to an earlier study by Maqsd (1983) that found SES be an insignificant factor in LOC and AA, which according to him demonstrate class indifference among the people in Hausa communities.

Nevertheless, the results signify the importance of the parents' professions on children's performance in school. Although data were not collected to ascertain the parents' level of income, because the students were not expected to be privy to that information, it was assumed that those that worked in the formal sector earned more than those in the informal sector. This was based on the classification of jobs in the two groups (see Chapters 4 and 8). The group of parents who were formally employed were in a position to make adequate provisions for their children's needs, whereas students with low SES may be more likely to have depressive tendencies, anxiety and tension emanating from home and financial problems (Grantz, 2006). Other studies have found neutral or negative results in favour of students with low SES (Ghaemi & Yazdanpanah, 2014). Ghaemi & Yazdanpanah (2014) noted the possibility that high welfare among children of high family SES can reduce the motivation and effort towards learning. Such children may not see the need to exert effort unlike their counterparts from low SES who might wish for better life, dedicate more time to study and have the drive to obtain higher grades. This is a situation when internal locus of control is present among students with low SES and less prevalent among those with high SES, which was not the case with the students in this study.

As for the parents' educational levels, only the mother's educational level made a difference in the pattern of the relationship between LOC and AA. Differences were not found among those whose fathers attained tertiary certificates and those who did not. Those in the tertiary group were mostly internals (in LOC) and scored highly in AA. The externals showed a difference of two percent in favour of the low achievers (see Table 8.2). Amongst those whose

mothers did not attain a tertiary education, the internals were more likely to be low achievers than high achievers, while the externals were mostly low achievers. In general, all of the groups contained students with internal LOC but they differed with regard to their AA. These findings offer support for the importance of the mother in the overall development of children, beyond her educational level to include psychological wellbeing.

In addition, most studies have found differences in the LOC of people across religious beliefs, cultures and ethnicities (Gleitman et al., 2011; Santrock, 2003). People who were religious were reported to have external locus of control more often than those who were less religious or those who did not have any form of religion linked to the belief in a supernatural being (or power); those in the latter group mainly had internal LOC. Also, people from Western cultures are reported to have internal LOC due to the society enhancement of etic perspective and individualism, while people of Eastern cultural origins are associated with emic and attributes of external LOC due to their strive towards collective goals rather than self-promotion and personal attainments (Hingginis & Bhatt, 2001; Gleitman et al., 2011). Even in Nigeria, differences can be observed between the northern and the southern people. The southerners, who are mostly Christians, are shown to have internal LOC and a higher level of education compared to the northerners, who are mostly Muslims (Balarebe, 1989). However, as this study was concerned mainly with determining the factors in AA of the northern students, no data were collected on the students' religious background to either affirm or disprove some of these findings. The findings on ethnicity showed no differences between the Hausa and non-Hausa ethnic group of students in AA and LOC. This could be a result of the small number of other main ethnic groups, dominant in that part of the country, who participated in this study. The Yoruba constitute 8% and the Igbo are 7% of the total sample size.

In summary, apart of the parents' profession that had moderate relationships with LOC and AA, the other background factors showed little to no relationship. Even the pattern of the relationship for the parent's profession was clearer in AA than it was for locus of control. This further demonstrates that LOC is less significant in the students' performance as shown in the model result. The next section considers the discussion between SM and AA as an attempt to answer the third research question.

10.4 Academic achievement in relationship to school motivation and the background factors

School motivation is the interest that students have in engaging in school activities (Tella, 2012). This study found a positive relationship between SM and AA (0.536). Although the strength of this relationship was less than that of SC with AA, it is more than that of LOC and AA. At the univariate stage of the analysis, the students had higher scores in SM than in either SC or LOC (SM 88%; ILOC 76%; SC 53%). Specifically, the study focused on various aspects of school, including the mastery of tasks and grades, school facilities, and relationships with peers and teachers (see questionnaire in appendix 1). School motivation is multidimensional, hierarchically organised depending on the focus of the study (McInerney & Ali, 2007; Wang & Holcombe, 2010). In some studies (McInerney and Ali, 2007), aspects of SM have been categorised under cognitive, affective and structural needs, while Ryzin (2011) explored school facilities available in schools for students similar to part of SM in the present study.

All the various aspects of school (Table 6.13) were found to relate to students' performance. Most of the students agreed that the availability of extra school lessons (tutoring), good grades, small class size and teachers were some of the main motivational factors. This finding aligns with the achievement goal theory which holds that people have various goals that motivate them towards achievement (Meece, et al., 2006). The theory explains how an orientation towards mastery and performance goals influences achievement. Students who have mastery goals focus on effectively comprehending tasks and derive success through earning high grades and personal improvement. On the other hand, students that have performance goals focus on getting good grades, engage in less challenging tasks, and use competition and social comparison as a frame of reference to gauge their success. Meece et al. (2006) found that an orientation towards mastery goals correlated more with academic achievement and linked it to the adoption of deep learning strategies by the students, while students with performance goals tended to adopt the surface strategy. Students at SS1 in this study grade level were expected to exhibit certain level of autonomy as well as support from their teachers to develop self-regulated strategies to gain mastery and promote learning.

The findings of this study resonate more with the orientation towards performance goals due to the high level of SM among low achievers, although the findings did not take into consideration students' comparisons with each other. Most of them (80%) agreed with the importance of getting good grades and working with others. However, the high SM detected among low performing students is contrary to most findings on students' achievement motivation because even the low achieving students had high SM. Students with high AA are the ones expected to have high SM. McInerney and Ali (2007) in describing their findings on

cross cultural validation among students from Africa, Europe America and Asian samples, on SM stated that the high level of correlation in their findings represented both mastery and performance goal orientations but that cultural variation (upon which their study was based) should be considered. Cultural differences among the participants in this study did not constitute an area of concern since they all followed the same syllabus for all public schools in the country. The role of the home was noted in the literature review to be crucial and ethnicity did not show much impact among the sample of this study. This are perhaps the related aspect of culture slightly linked to this study.

Wang and Holcombe (2010), whose findings support a strong relationship between SM and AA, identified school engagement as an indicator of SM among students. Students that engaged more with the school had fewer behavioural problems, were more focused on their studies, were punctual and had higher scores than those that were less engaged. Many aspects of the school environment and classroom situations can promote or reduce school motivation and engagement, and can hinder effective learning, thereby leading to a persistently high failure rate among the students. This seems to be the situation among this study's sample due to the dilapidated facilities in many of the schools, as described in chapter six (section 6.2). Inadequate school infrastructure in most public schools in Nigeria is due to an increase in enrolment without a corresponding expansion of provision commensurate with the large number of students in the schools. This has led to an increase in the teacher-to-student ratio from the UN recommended average figure of 1 to 25 to 1 to above 100 in the worst cases, which puts Nigeria as one of the four countries with the highest number of students per class (UNESCO, 2012, also see chapter 2.5). Other three countries are Pakistan, Malawi and Eritrea. However, many private schools in Nigeria as well as state schools in other countries have reduced the teacher-to-student ratio to provide effective teaching and learning opportunities, especially for young and learning-disabled children (Udey et al., 2009), although private schools were not included in this study.

The importance of teaching practice in influencing SM and AA cannot be over-emphasised. Most of the students in this study indicated that their performance and AA depended on being listened to, getting extra help from the teachers, and having teachers that use teaching aids such as pictures, video, books and audio. They reported that their AA was unaffected (70%) by having a teacher of opposite sex. It has also been observed that the teacher-student relationship is reciprocal in that students that have good grades tend to be the teachers' favourites, and students are happiest with teachers in whose subjects they score highly, and

they also look forward to these lessons the most (Chapter 9.4.1). Similarly, teachers who lack adequate teaching skills and knowledge of the subject matter were more likely to cause students to lose interest in the subject and the teacher, and this is one of the major factor that lead students to underachieve in school. Low motivation has been found to be the cause of students performing poorly in mathematics (Tella, 2007). In the present study, maths achievement correlated more than English achievement with SM. Overall, the students scored slightly better in maths than in English as discussed above. The next section discusses SM and AA in relation to the background factors.

10.4.1 Background factors, school motivation and academic achievement

The study found no differences in the relationship between SM and AA based on gender, age, ethnicity, language at home or parental educational level, but did find a difference based on the parents' professions. Regarding gender, this finding supports the decline in gender parity, negating the nature and nurture perspective (see Chapter 4) that saw women as underachievers in comparison to men in all aspects of educational endeavours (See Francis & Skelton, 2005). Tella's, (2007) found differences related to specific domains, such as maths, sciences and sports in favour of boys while girls were more motivated toward and performed better in arts and language-related subjects.

However, recent studies (Bugler, 2015; Bramley et al., 2015) have shown that girls tend to be higher achievers than boys in all subjects. This is the same in some parts of Nigeria, where there are reports of high academic performance of students (Agbejaye et al., 2015). Other differences observed by some of the previous studies have been linked to age and grade level. For instance, Yeung and McInerney (2007), who examined students' school motivation and aspiration over their high school years, found that students relied less on praise and comparing their grades to those of their peers. Corroborating this, Singh (2011) stated that as children advance in age and grade level, they become more focused on learning and require intrinsic forms of motivation that surpass extrinsic forms. As adolescents, the students in this study would perhaps have been accustomed to receiving a lot of praise at lower educational levels, especially in primary school, but similar or external forms of motivation would no longer have an impact on their performance. However, given that students at this grade level (SS1) have been placed in various classes which will lead to their future career paths (Chapter 9.3.1), the shift in focus should be towards getting the good grades required for their desired careers,

which should serve as a form of intrinsic motivation towards high AA. Although aspects of the schools constitute external sources of motivation, the students' desire for a certain career constitutes internal motivation for high achievement that is independent of significant people in their lives. It is, however, not surprising that aspiration has been found to have a positive influence on both SM and high AA (Yeung & McInerney, 2007). Students who have higher levels of aspiration for advancement in education and for getting a good job after graduating will be more motivated to earn good grades.

Consequently, the evidence for invariance found regarding gender and language use at home in SM and AA in this study further suggests decline in the gap in the country. This is contrary to most reports on ethnicity and native language use among students (DIFD, 2013; UNESCO, 2013, FME, 2012). For instance, a comparative study by Balarebe (1989) of speakers of the three major Nigerian languages found that Hausa students were more likely to speak Hausa at home and had lower motivation to attend school than students from Yoruba or Igbo backgrounds. The explanation provided in the study in depiction Hausas as (likely) under-achievers with low SM was as a result of the value the people from the Hausa community placed on education. This is because they seem to place more emphasis on the Islamic education than western form of education from the onset (See Chapter 1.2). This finding therefore indicates the value placed on education and a positive attitude towards it has increased amongst the student groups in SM and AA.

Regarding SES, the differences found based on the parents' educational level and profession were surprising. The results for the mother's main job showed that 71% of students whose mothers were employed in the formal sector had high AA and SM, while 65% of those whose mothers worked in the informal sector had high SM but low AA. The same pattern was observed for the father's main job in favour of those in the formal sector. Parents with formal sector employment might have found SM and good grades to be beneficial and would therefore provide all of the necessary support to encourage their children in school. However, given high overall levels of motivation among the students, it is not surprising that some students from low SES backgrounds might also be motivated by school. Only that the higher level of those with high SES than those with low SES indicated that parents' occupation still serves as a source of reference for students to engage more with their schoolwork in order to have high AA. Thus, the education of students' needs collaboration between the school and the home.

The high SM across the various group of students' background factors and AA seem to be the most surprising result among the three conceptual variables in this study in relation to AA that may demand further exploration. As said earlier that those with high SM should be the ones that performed better. Arguably a continuous high motivation with low performance may eventually lead to frustration and deterioration in motivation that is detrimental to performance. This level of motivation will have to be linked to good and sustained performance among the students. This therefore leads to the identification of the important variables in the students' AA.

10.5 The determinants of academic achievement

In relation to the fourth research question, which sort to identify the variables that were the strongest predictors of AA among the background factors and the conceptual variables. The study found nine out of fifteen variables adequate at predicting AA. In the final model, three groups of variables accounted for (R^2) 77% of variance in AA. They include the conceptual variable (of SC, LOC & SM), the background factors (parental profession, mother's education and gender) and the type of school (based on gender & location) that the students attend (see Table 10.1). In addition, the proportion of variance contributed by each of the variables is shown in Table 10.2, indicating their importance in the model.

Table 10.1 Multiple regression analysis for the final academic achievement model

Model	R	R Square	Adjusted-R-square	S E of Estimate
9	0.880	0.774	0.772	6.392

This result indicates that 23% of variation is accounted for by factors that were not captured in the model including error. The type of school variables of gender and location were the later variables that were added to the model that increased the explanatory power by 3%. School location made a slightly greater contribution than the type of school based on gender. This implies that attending urban schools had a more positive impact in achievement outcomes than attending a rural school. The discernible difference in gender leading to small impact in the model was further supported by the small impact of the type of school based on gender compared to location. This confirms the relative importance of the other variables that aren't

gender related, which supports the decline in gender-segregated schools as a declining factor in AA in most areas. Table 10.2 shows the contributions of each of the variables in the model.

The study found SC to be the highest predictor of students' AA, with a beta value of 0.619. This demonstrates that a single unit increase on a scale of 1 to 5 in SC leads to a 10% increase in AA. Following the general trend of the results of this study, this result is not surprising, because even the specific domains of SC had higher levels of correlation than any other variable in the study, which indicates that the importance of having high SC is greater than for other variables in the model.

Mother's profession' was found to be the second most important factor in determining AA, and the most important background factor in the model. Having a mother in a formal sector employment could lead to an increase of 4% scores in AA above those whose mother work in the informal sector. School motivation was fourth, with only a 2% increase in marks, and locus of control was fifth, with only 1% (slightly above gender), which is the least contributing factor in the model. Several studies (Perry & McConney, 2013; Ewumi, 2013) have emphasised the importance of parents' SES for AA. Among the SES variables in the model, only mother's profession was found to contribute substantially to the students' performance; father's profession and mother's educational level were the least important variables among this group of students.

Table 10.2 Explanatory Variables for Academic Achievement Analysis

Variables	Adjusted R Square Change	Std (Beta)	t	Significance Level
Constant			2.73	0.006
Self-concept	0.715	0.619	31.84	0.000

Mothers in the formal sector	0.022	1.46	9.11	0.000
School motivation	0.016	0.129	8.22	0.000
School location	0.005	0.073	4.66	0.000
Locus of control	0.003	0.065	4.31	0.000
Fathers' in the formal sector	0.003	-0.053	3.99	0.000
Single-sex schools	0.002	0.056	3.39	0.000
Mothers' with tertiary educ.	0.003	0.051	5.07	0.000
Male Students (Gender)	0.002	0.051	4.63	0.000

N = 1227

In addition, the model was able to classify the students into three distinct achievement groups with a bench-mark of one to two standard deviations (see Chapter 8.4). The students are grouped, based on a combination of the variables listed in the table 10.2 as the overachievers, achievers and underachievers. Their identification was important in order to detect some of the major problems that influence students' performance in NN. Some of the aspects that most distinguished the overachievers from the underachievers are school location, SM and LOC. Overachievers were mostly found in urban schools, had positive SM, and spoke Hausa at home. The underachievers were mostly located in the rural schools, were mostly internals in terms of LOC and spoke English (English or Pidgin) at home. The use of pidgin might have been taken as equivalent to English, which should not be due to its simplistic form. This probably might account for the invariance in the students AA in this study. Nevertheless, it signifies proficiency level of English language use among Nigerians at home, schools and most social gatherings (Balogun, 2013). Its use among students at home will not be surprising because Kaduna is a heterogeneous society with several ethnic linguistic groups as shown

from the data on ethnicity. Another surprising finding here is that external LOC was less prevalent amongst the underachievers than the overachievers (see their profiles on Chapter 8.6 & 8.9). This suggests that attribution of performance was not a very important issue among the students as indicated in the literature (see Chapter 4.3). The interviews with the students to highlight and clarify some of the findings on the differences and similarities among the over and under- achievement groups and in getting the views of the students on factors that influence their performance in school.

10.6 Differences between the Overachievers and the Underachievers

Interviews were conducted with nine over and eleven under-achievement groups to clarify some of the quantitative findings, for instance the high level of high SM among the different achievement groups, and the prevalence of external LOC among high-achievers. Three main themes were explored in the interview, including aspiration, significant others and conditions in the schools. The study found differences in their views to support their achievement grouping, although in some cases they expressed similar views. However most of the differences were not linked to gender, desire for success or school location.

Regarding aspiration, slight differences were found in their views regarding career choices and subject combinations. The students were assigned to two subject routes which are sciences and arts based subjects. These two subject tracks are prevalent in the analysis. The underachievers were aware that they had not performed as expected for their desired career choices, while the overachievers were more confident that their performance was adequate to attain their aspiration. This suggests that the students have a realistic view of their AA and how it might affect future career prospects. For example, most overachieving science track students wanted to be medical doctors, and nothing else.

‘I want to study medicine in the university. They told me that I need to get good grades because only the best get admitted in the available space. This is why I put in more effort to be the best in my class.’ (Galadima, OA male student)

One underachieving science student stated that if her scores were not high enough for medicine, she would apply for nursing, which was reasonable and a realistic fall-back plan by the student.

‘By the special grace of God, I want to become a medical doctor or a nurse, that is, if I do not get the required grades to go into medicine at the university, I will go into a nursing school.’ (Farida, UA female student)

Also, the study found that the subject track (Arts or sciences) that students follow might be important because most of the overachievers were studying science, while the underachievers were mostly taking an art-based subject combination. The sciences were seen to be for more ‘serious’ students with higher grades, by both the students and their teachers. This shows that the higher attaining students are more likely to follow science subjects than arts. For instance, an underachiever in an Arts class was prevented from taking the subject ‘additional maths’, which was allowed for science students only; the student had thought that the subject would help improve his maths grades, since it was similar to the general maths.

‘The school will ask you what you will like to be and if they see your performance is not that good, they will advise you to buckle up but if you start doing well in the other class, they can bring you back to what you want. It is not very common though’. (Nnagi, OA arts track female student)

‘Allowing the science students to attend additional maths classes really help them to get better grades in general mathematics than us [arts students]. I believe that if I was allowed to attend the class I would improve my grades in maths, because they are taught some things that they do not teach us in general maths classes.’ (Abdul, OA arts track male student)

On this point, Long *et al.* (2009) indicate that students that are goal-oriented seek out help and adopt self-regulating strategies, leading to good performance even in the face of difficulty, as they know that they will eventually succeed. That serves a strong motivating factor for students to be resilient thereby leading to overachievement as seen from the Abdul and Nnagi above.

Consequently, the attitudes of the students toward some subjects were observed to be different. In maths, for instance, teachers’ attitudes indicated to students in arts classes that they were less serious than science students, who were mostly overachievers, and considered more serious and more engaged.

‘There is this collective idea that we leave science to the scientists and the social sciences should be our own area of expertise. We concentrate on that. Nobody expects us to be good at maths. Even our teachers.... It’s like ‘we are going to the noisy class, where they are not serious.’ It kind of shows that we are not interested. Granted, it’s partly our fault for giving them that idea, but it still feels that way.’ (Papa, Overachieving male student)

‘Last term many people failed maths. I think the teacher is the problem. This is because if the teacher comes to the class and did not find chalk or a duster, she’ll just give us the notes that we should just go and make it on our own. She gave that punishment to us the last time.’... (Tahir, UA male student)

Tella (2007) noted that the issue of attitude is reciprocal, which demonstrate that science students exhibited seriousness that was why the teachers took them as such, and the arts students that were not as serious also affected the teachers perception and had less enthusiastic in teaching the arts students compares to the science students. This might not be the case with a professionally trained teacher. Nonetheless, all students deserved to be taught well because it is part of their training to have good class management at all times. In addition, none of the overachievers had a negative view of teachers, instead they seem to empathise with the teachers for having too heavy of a workload, due to the large number of students, believing that they did their best and feeling confident to approach teachers if they needed to. This demonstrates that an internal LOC is an attribute of a positive academic outcome. These and other pedagogical factors in view of the interviewees were linked with poor teaching and classroom management; these factors are based on teachers’ experience and training, which is beyond the control of the students, and are major causes that made the students to underachieve.

Language spoken at home was found to be a cause of underachievement in the interview phase which was not the case in the quantitative result. In chapter seven (7.2.4), the evidence showed no relationship in the performance of those that spoke English at home and others who do not. Drawing up the profile of the achievement groups showed that the underachievers mainly comprised of those that spoke English at home while the overachievers were mainly Hausa speakers. One of the underachievers explained that the help he received from a high achieving student that he sat close to in the classroom by explaining some things to her in Hausa

improved his performance and gradually he picked up in English language. The student transferred from a different school to the present school.

‘When I first came, I did not understand a lot of things that the teacher was teaching us, but later they made me sit near one of the best students in the class, and because I could not speak much, he spoke English to me all the time and he taught me things that I did not understand. That was how I started to get good marks. He remains my best friend; we do things together in the school.’
(Baba, UA male student)

However, this was expected, as not understanding a language can hinder effective comprehension, communication and learning. However, the study found that overachievers had greater autonomy in their learning than underachievers, and they were more helpful in assisting the other group of students. It was found that most of the overachievers read more, studied for longer and engage in more difficult tasks than the underachievers, who still needed others to help them after reading textbooks and having group discussions with colleagues.

‘Sometimes in situations where teachers are weak, and I don’t understand or most of the students complain that they don’t understand, we read more from the available textbooks that we have. That is why sometimes students fail in those exams. The teachers will then blame the students while it is the fault of the teachers but you still need someone to explain it to you.’ (Umairah, UA female student)

Some of the overachievers demonstrated positive relationships with peers and seniors, which helped their performance, whereas underachievers had difficulties with senior students and preferred to interact with peers of the same grade level.

The study further found that overachievers were also performance goal-oriented, and they shared these attributes with underachieving students. An overachieving student stated that they would continue to work hard in order to remain at the top of the class. This corresponds to Marsh’s (1989) big fish little pond effect BFLP effect, which demonstrates that high ability students in lower ability classes have more positive SC than low ability students in high ability classes. Students can hereby use others as a frame of reference and exert greater effort toward AA and to obtain favourable judgement from others, irrespective of differences in orientations and performance (Elliot & Harackiewicz, 1996). Research evidence (Wentzel & Wigfield,

1998; Arai et al., 2011; McInerney & Ali, 2007) show support for mastery goal-orientation for overachievers than underachievers who are seen to have performance goal orientations than the overachievers. In addition, inadequate school facilities were found to constitute a hindrance to performance for both groups of students which led the students to underachieve. Some of these include: inadequate desks, distance from the teacher meaning students could not hear what teachers were saying, proper medical care when students were sick, inadequate supply of portable drinking water, cleaning and toilet use, unclear scribe on chalkboard were among some of the factors contributing to students' underachievement.

In conclusion, many factors contributed to students' performance, causing them to perform below or above their expected AA level. However, this study found that numerous factors led to differences in the achievement of the student, some which include the background characteristics. The overachievers were mostly more engaged, put more effort in learning difficult material. They were more committed, had better relationships with their teachers, seniors and peers, had more positive and accurate perceptions of their AA than underachievers. In the same vein, issues pertaining to the teachers and school facilities are beyond their control, which, in their view, is a major cause of underachievement. Aside from the general school-related factors hindering their performance, the two groups showed a similar interest in success at school, and made efforts to achieve better attainment.

10.7 Implication of Findings

The study set out to explore poor AA among senior secondary school students (SS1) in NN. The aim was to identify some of the major areas where performance improvement efforts might potentially focus. To this end, the study examined the relationships between SC, LOC and SM in relation to AA. This section discusses some of the implications that the findings hold for the Nigerian educational system, especially educational practitioners, policy makers and parents.

The study found SC to be the greatest contributor to students' AA. The results showed that students with high SC were more likely to have high AA while those with low SC are expected to have low AA. This implies that students who have a positive perception of themselves tend to perform better and achieve more than those who think negatively about themselves. Not being an accurate evaluator of one's own performance indicates in itself some form of personality disorder, as individuals should have accurate understanding of their performance,

whether they are doing well or not. Hence, positive and adequate self-perception promotes desirable outcomes and protects against negative behaviours and performance outcomes, such as exam anxiety, frustration, learned helplessness, low grades and impaired motivation (Craven & Marsh, 2008, O'mara & Marsh, 2006). It is therefore necessary to develop strategies to enhance students' SC in response to poor AA.

Also, since SC correlates to a significant degree with AA, diagnostic measures and interventions can be aimed at specific domains that constitute problems rather than focus on general academics areas for particular groups of students that are having problems in school. For instance, those with problems in English can be further diagnosed to identify particular aspects of the subject that they have problems in, e.g. reading, writing, speaking or listening. Further studies can be explored to include these specific domains of academic SC and AA within particular subject areas. Identifying particular problem areas can lead to general improvement in AA. In addition, Arens et al. (2016) show that SC of particular domains should include both affective and cognitive aspects, as their study found that cognitive aspects correlate more with early and prior maths AA than affective ones. Cognitive aspects include statements such as *I have good scores in maths*, whereas affective is *I like maths*. Although the self-description questionnaire (SDQII) adopted in this study is comprised of both aspects of SC, they were not segmented during the analysis. This should bring forth the various aspects that can be explored depending on potentials of the disadvantaged groups of students. Further studies can be conducted to examine the various aspects of AA as well as SC.

Another important finding relates to the impact of the mother's profession. The study demonstrates that children whose mothers were employed in the formal sector perform better than those whose mothers work in other sectors. The implications of this perhaps extend to the failure rates of children of different social classes in the state. This calls for more involvement of parents from all social classes in the educational system to ensure the necessary support and provision for children's needs. The impact of mother's job could serve as a proxy to other indicators of SES, which indicate that the parents were of low SES which is a major problem contributing to poor performance.

Those that can afford it can provide tutoring at home; some of the educated parents should devote time and effort for the children's academic activities and engagements both at home and in the school when there is the need. It is not enough for them to be worried as stakeholders but not support the schools by assisting their children at home (see Chapter 6.3.6). As most of

them attained a tertiary education, they should be able to help their children with assignments and other school tasks, and this can lead to the students performing better in school. It is important that parents create a supportive, conducive and healthy home environment because this leads to good self-image, confidence, self-esteem and psychological stability, all of which are necessary for a positive impact on AA irrespective of parents' SES.

Similarly, the relationship between mother's (and father's) professions and children's education implies lifting of people out of poverty in order to prevent poor children from becoming poor adults. In a recent interview with the commissioner of education in Kaduna state, he stated that the introduction of feeding programme from January to March in primary school doubled the enrolment of students, and it was expected to increase in the coming academic session (Usman, 2016). This shows that poverty was the factor that prevented such children that are now being enrolled to initially stay out of school for the simple reason that they could not afford the associated cost of schooling. If education is a right of every child, it must be totally free and devoid of any forms of fees. This means that the feeding program should be extended to the secondary school as well or the British system of feeding poor children can be adopted.

School motivation is another important factor in the students' AA. Students had high SM among the achievement groups, which seemed contradictory. Scholars and motivational theories (McInerney & Ali, 2007; Tella, 2007; Wentzel & Wigfield, 1998) indicate that students with high AA have high SM while those with low AA have low levels of motivation. Although many things motivate people at different times, various school factors were found to especially drive students' interest and engagement in this study. Students who had high interest engaged more and were happier with the teacher and their performance, would lend support to others, and were able to improve their performance. Some of them still had low scores but scored higher than expected. Such students comprised the group of low achievers who were also overachievers. Two of them were among those that were interviewed.

The implication is that if students are highly motivated, it shows readiness to learn, but the school perhaps failed to capitalise on the students' interest in order to translate it into high AA. Some factors from the study that were involved in this include teachers' attitudes, inadequate professional knowledge, accessibility to the teachers after lessons when students had queries or difficulties in solving tasks, and the restriction of subject choice to a particular group students. Other school factors that mitigate against such students' ability to achieve

include structural factors of the school, such as dilapidated classrooms, chalkboards, desks, unavailability of water for drinking, washing and toilet use, and lack of adequate medical facilities. These conditions made it impossible for even highly able students to perform satisfactorily. Some high achieving students that were classified as underachievers should have performed better since most of them pointed to structural facilities as key obstacle to their performance. Some others were linked to crowdedness of the classrooms which prevented the teacher from roving around the class and the proximity of most students that were unable to hear the teacher during the lessons. This is the same thing as not attending the lesson. The teacher not having space to move around the classroom cannot be linked to inadequacy on the part of the students, neither is it the fault of the teacher but that of the authorities whose duties are to make adequate provisions for such infrastructure.

Most of the structural problems might have been caused by inadequate funding from the government. Since the facilities lacked refurbishment, renovation and replacement as the case may be. As a solution, schools can reduce enrolment rate in order not to overburden existing infrastructure, to create an effective atmosphere for teaching and learning. The government on the other hand, will have to establish more schools and employ additional qualified teachers to provide adequate education for every child in the country. Dilapidated structures would need repaired at the same time. Some of the students that did not have space in other schools could be sent to schools with low enrolment rates in the interim. Also, schools can organise programmes to aid corps members in teaching and classroom management rather than allow them to manage the students on their own without any form of guidance and supervision. More experienced teachers can follow up periodically on the corps members to see how they are progressing in teaching and also obtain feedback from the students.

As for problems in the hostels, schools can either have live-in matrons or employ people to perform matrons' duties in shifts, in case if that is not possible to have someone stay on a full-time basis. If they are paid well and it is their job then it ought not to be impossible to someone on a full term basis. It is not acceptable for young people to be left alone without adult supervision in these situations nor should they be made to clean rooms or run errands for senior students. Students can choose mentors among the teachers or senior students, so they have someone that they can approach easily with their personal and academic problems.

Also, since the students indicated that extra classes and group discussions improve their performance, remedial classes and tutoring can be organised for students with problems in

different subjects, at no cost to the students. This will increase the proximity between teachers and underachievers, and improve the social relationships between the teachers and students. Students that seem withdrawn or alienated can be engaged at these times. Students recognise when teachers are caring, concerned, and supportive (Wentzel & Wigfield, 1998). Positive social relationships with teachers affect motivation and subsequent performance (Tella, 2007). All this requires financial investment in the education system, which arguably is the key problem that needs to be addressed mainly by the government.

Gender factor was not found to constitute discernible difference in AA, although there were slight differences in the concepts and AA in favour of boys, indicating that it still has some effect. Some of these were related to gender stereotype factors and the status of women as against men in the society (Legewie & DiPrete, 2012). Girls sometimes face early child marriages and are often expected to engage in domestic activities when they come back from school than boys (Maikudi, 2013). The evidence from this study show that 37% of the students indicated that family demands prevent them from having enough time for assignments (Table 6.12). At work places, men usually occupy higher positions than women which might have arisen from the perpetuation of gender role in some communities that undermine feminine capabilities and abilities (Francis & Skelton, 2005). It was these conceptions and subsequent imbalance in treatment of women as separate and different from men perhaps that led to oppression and social dominance of men over women. In this respect, the rise of feminine advocates against relegation of women in all spheres of the society, lead to development of male activism, in response to overwhelming media support for underachievement of girls in schools (Francis & Skelton, 2005). As it became apparent, that girl was achieving highly than boys, male activists complained that organisation of schools, and educational policies (of some western countries like UK) were made to favour girls than boys. According to them, there were more female teachers in schools, which can make boys to lose control of their lives because of attacks by assertive women (Epstein, et al. 2002). In some instances, the (high number of) female teachers can smother boys with matriarchal values; rub them off educational male role models, which could constitute lack of motivation and social interaction (ibid).

However, equal attention should be given to improving the performance of both male and female students so that in the future, boys are not discriminated against, and there may be a need to start developing policies to raise the AA of boys in the same vein. In Nigeria, records show that girls are underrepresented and underperform in school, which is the reverse of most

Caribbean countries like Trinidad and Tobago, where more girls attend school and perform better than boys (UNESCO 2013). Accordingly, the study found that, in terms of students' performance, it was inconsequential whether schools were mixed or single sex. This means that less emphasis could be given to single sex schools in consideration of improving AA, but such schools could be retained for religious and cultural reasons. Similar to a UK study (Speilhofer et al., 2007) that reported a decline in single sex education, as it indicates that girls benefit more academically than boys because they have better opportunities to participate in classroom situations and engage more in the traditionally male dominated subject areas compared to if they were to be in mixed schools.

Also, differences were found in school location, with rural schools having lower level of academic achievement than schools located in urban areas, which are probably link to inadequate infrastructure and less qualified teachers. This can lead to a larger number of urban schools due to the demand for better achievement. Students found in this situation may have to travel to attend school in other places order than their area of residence. These are appropriate for those in boarding schools. Arguably resourcing the rural schools could be the best option in order to make adequate provision for all the schools and make education accessible to all the people in different locations. In addition, new schools can be established to expand access and to decongest some of the schools, as the old schools are upgraded in both rural and urban areas. This will also enable teachers and other school personnel posted to rural areas to remain at their stations.

In addition, focusing on grades as a mark of achievement can lead students to have performance orientation rather than mastery goal orientation, which it they have can lead to improvement in performance, since it is linked to the development of deep and self-regulated learning skills (Diseth & Kobbeltvedt, 2010; Wang & Holcombe, 2010). Labelling schools such as rural schools, as low achieving would negatively affect the students attending those schools, and this, in turn, could have negative impact on both their perception and achievement ratings while certain schools (urban and high achieving schools) will be pressurised in terms of request for admissions and space. This implies the need to move away from using only attainment as the most tangible outcome of schooling and to consider other forms of outcomes as well. It could continue to be used as a feedback to assess students' learning outcome and an indication for further areas to focus on during the teaching and learning process.

For tests, teachers can use different types of positive reinforcement, instead of just scoring students with high marks, for most improved and high performing students, so that only few students would be acknowledged. Therefore, those with low achievement would not be discriminated against as there would be more that are unacknowledged. In the same vein, wrong scores should be avoided instead encouraging statements can be used, students can be made to try the task again or the teacher can assist them to through extra lessons.

The concept of underachievement is relevant to identify the most improved students rather the high-achievers only. Therefore, an internal frame of reference proposed by Marsh (1996) would be most appropriate in advancing students achievement rather than the external frame in which student achievement are compared with that of others. This relates to mastery goal orientation rather than performance goal which is a common trait of overachievers, in addition to deep learning strategies compared surface learning approach. Adaptation of these learning strategies can help to enhance both personality factors and improvement of the students' academic achievement. It is significant is for students to be better equipped to advance to higher levels of education and for their performance to prepare them to reach their career aspirations, live fruitful lives and contribute to the development of the country. This section leads to the next chapter (11) which considers the summary of the thesis, conclusions and recommendations.

Chapter Eleven

Conclusion and Recommendations

11.1 Introduction

This chapter concludes the study with the discussion of some of the major contributions of the study, a summary of the findings and recommendations for policy and practice and further inquiry. To guide this study, five research questions were posed in attaining an understanding of some of the factors that lead to the low academic achievement (AA) of students in Northern Nigeria (NN). The questions involved the exploration of self-concept (SC), locus of control (LOC) and school motivation (SM) in relation to AA, and discovering which of the concepts was the most influential on the students' performance. The fifth research question explored the social and demographic factors linked to AA. The first section summarises the empirical, theoretical, and methodological contributions of the study by addressing the research questions. This is then followed by itemised summary of findings, limitations, recommendations for policy and practice, and suggestions for further studies.

11.2 Empirical contributions

In exploring some of the factors that determine a student' AA, data was collected on three conceptual variables (SC, LOC & SM) and background factors (age, gender, language spoken at home, ethnicity and SES). These results, presented in chapter six, show the descriptive characteristics for the students regarding each of the variables. The study found that almost all of the students (88%) had high levels SM, many (67%) had internal LOC and about half (53%) had a positive perception of their AA. This demonstrates that the students have high level of interest in school, happy to be in school and want to engage with the school. It also show that the students belief that their success and failure are predicated on efforts and ability but while some have positive perception of their AA others do not.

In chapter seven, the study found that SC, LOC and SM correlate positively with the students' AA. This suggests that the students with high scores on self-concept, LOC and SM also scored highly in AA. This is in line with the literature on these concepts (e.g. Pinxten et al., 2015; Suphi et al., 2011; Wang & Holcombe, 2010).

However, there were differences in the relationship between each of these variables and AA. Self-concept related more positively with AA, SM had a more moderate relationship with AA, and LOC had a low relationship with AA. Among the background factors cited most commonly in the literature as affecting AA, only parental profession was found to correlate highly with AA. Students whose parents worked in the formal sector employment were more likely to perform well in school compared with students whose parents belong to informal employment or those that are not employed. Other factors, such as gender and mother's education, had only a weak relationship, while no evidence of a relationship was found for age, ethnicity, language spoken at home and father's educational level.

In the final AA model, 9 variables were used which include both the three conceptual variables and the students' background characteristics. The study found that these nine variables explained (R^2) 77% of the variation in AA. Self-concept explained the highest proportion of variance (10%), followed by mother's profession (4%) and then SM (3%). Overall, this is a good model as it accounts for a lot of variation in outcome compared to the remaining 23% which probably could be attributed to errors and other variables that are not captured in this study such as IQ level, prior AA and parental income. The variables of LOC, father's profession, gender, and mother's educational level were relatively weak in predicting the students' academic performance. School location had an impact in that attending an urban school led to better achievement than attending a rural school, while the type of school based on gender (i.e. mixed or single sex) was less relevant. The model established three achievement groups amongst the students, the most notable of which were the overachievers and the underachievers (see Chapter 8.4). The overachievers attend mostly urban schools, have positive school motivation, and spoke Hausa at home. The underachievers attend mainly rural schools, have internal locus of control and speak English at home. The third group comprised those students who achieved as expected. The profile of the achievement groups provided insight into the students' characteristics, identifying those that were more likely to perform better than others and some of the factors mitigating against their AA.

Three achievement groups identified by the model are based on the students' actual performance relative to their expected performance, which is derived from their scores on the conceptual variables and their demographic characteristics. This means that the overachievers are not necessarily high achievers with good grades but rather were students that scored higher than their predicted achievement scores. Correspondingly, the underachievers were those who scored lower than their predicted scores, whether their overall grades were high or low. It is

the expected compared to the actual performance that is important here. Consequently, in both the underachieving and overachieving groups, there were students with high scores, likewise, low achievers could be either overachievers or underachievers. Nevertheless, in this study, most of the overachievers were high achieving students, not low achieving. See table 11.1.

Table 11.1 Illustration of the achievement groups of students

Achievement group level	Individual achievement level
Overachievement	High achievement
	Low achievement
Underachievement	High achievement
	Low achievement

Source: Smith (2002)

In addition to the survey, more data were collected through interviews with selected overachieving and underachieving students to determine their perceptions on factors influencing their AA. In this regard, three major themes were generated which include career aspirations, significant people that impact their performance and the general conditions of the schools. However, not much difference was found in relation to gender, school location and SES. Also both achievement groups of students (OA & UA) equally had high levels of aspiration in their track subject areas (sciences of Arts), although most of the science students were mainly overachievers and the arts students were mostly underachievers.

The study found that students who had good relationships with their teachers, senior students, and peers obtained assistance with their studies more readily and performed better than expected (OA) compared to those (UA) who were not so lucky in their relationships with senior students and teachers. Most of the students exhibited both performance and mastery goal orientations. The overachievers were more oriented towards mastery than performance, with the exception of those that aimed to outperform other students. Overall, the students showed a high interest in school and aimed at high AA. Most of the problems were related to inadequate school facilities and pedagogical problems on the part of the teachers. The

interview data highlighted the students' views in relation to their schools and their performance, specifically on the aspects of school infrastructure and interpersonal relationships, which were not captured in the survey.

Overall, the study came up with various empirical findings indicating some of the students' characteristics that related more highly with AA than others. All the conceptual variables were related to AA but at varying levels, with SC having the highest impact demonstrating the importance of the personality characteristics in influencing performance need to be enhanced. In addition, the impact of parental profession especially that of the mother indicates the relevance of the family's SES on AA which cannot be ignored as well.

11.3 Methodological contribution

The aim of this study, towards identification of the major contributing factors to low performance of the students, leans more to critical social science research philosophy (see Chapter 5.2) This is due to its advocacy towards revelation and solutions to problems in order to assist people to change for themselves, irrespective of any method used in the process as long as it can lead to resolution of the problem. As a result, the study utilised a cross-sectional research design with a sequential mixed methods approach to data collection and analysis. The first phase involved the administration of questionnaire to measure the students' SC, LOC, and SM while also gathered data on the background factors. The questionnaires were adapted from standardised instruments developed for measuring the concepts.

The SC scale was adapted from SDQII (Marsh, 1992), developed for SC of adolescents in secondary schools to test their maths and English SC. Many studies (see Chapter 4.2.2) on ASC adapt the scale and affirm similar result with Marsh's theory of self-concept in relation to AA as with the result of this study, which found relationships between SC and AA. Students with high SC also had high AA while those with low self-concept also had low achievement scores. However, some of the studies including Marsh's studies (Pinxten et al. 2015; O'mara & Marsh, 2006) used a longitudinal approach to study SC over time to measure changes that occurred within a period of observation. The reason is that, Marsh's study was based on reciprocal effect model but this study is based on exploring factors that influence AA. Interviews were also used to obtain deeper insight into the relationship between the concepts which is really used in SC studies.

The LOC scale was mainly derived from Rotter's (1966) scale but was modified to be a five-point Likert scale rather than containing Rotter's original two statements which the students were expected to choose from. This was to show whether they have internal or external locus of control. Rotter's scale was modified to suit the students because the original version was found to be too general. For example, Rotter's scale which is a standard measure of LOC that could apply to different fields, contained topics that were non-academic, unlike the SDQ, which was subject and age-level specific and appropriate for the students. Some of the issues in the scale include political items relating to 'war' which was considered irrelevant to SSS in academic setting. However, only the items that related to academic areas were found appropriate for use and were selected for the study. The chosen items were validated by experts in the field in relation to this study and judged appropriate for use among the participants. Pilot studies were conducted with ninety students from three SS schools and yielded a similar result to Rotter's validity and reliability values of 0.7.

The SM scale was a combination of items from PISA (OECD, 2013) and McInerney and Ali's (2007) ISM instruments for measuring aspects of SM. Three major areas of the school experience were covered, namely the school facilities, achievement goals of students and inter personal relationships. Standardised scales were not found that included these three aspects of the schools that were what led to the selection of appropriate items from the two scales to measures SM concept in this study. A similar study (Yeung & McInerney, 2007) on SM also utilised aspects of the ISM inventory that measures the students' academic goals and aspirations (See Chapter 4.). As described above (Chapter 6.2) the school observations that were undertaken during data collection supports the students' views from the interviews which revealed that the facilities were grossly inadequate for effective and appropriate teaching and learning (Chapter 9.).

Accordingly, the use of the two different instruments (questionnaire & interviews) provided different perspectives on concept of SM. The survey showed that the students had higher SM across the ability range than SC and LOC but the interview with the students showed aspects clearly major aspect of the school that constitute hindrance to their performance. Each of these results would not have these provided this deep insight into the students SM, which helps to identify some of the potential areas of focus towards school improvement desired for the students. For this reason, this present study used a cross-sectional design that included students from fifteen various schools. Therefore, mixed methods were used to obtain deep insight into the relationship between the concepts.

On a personal note regarding methodology, the use of mixed method increased my understanding of various methods and processes for conducting research. The connection in research process from the selection of topic, development of research questions, literature reviews, data collection and analysis to presentation and recommendations of findings. The use of various methods to unearth multiple realities of human endeavours achieved and problems, to think critically and improved my writing skills. I would cherish forever the quantitative skills that I have acquired in the process of the data analysis, which I am confident that I should teach my students and coding of the data into computer programme such as SPSS to conduct their own analysis rather than having to send the data to a statistician. This could help reduce the students' lack of confidence in using numbers and improve their use of quantitative methods on a whole. The quantitative skills go beyond academics to various sectors of employment including Health finance, media, politics, public and private sectors. Also the qualitative method is not frequently used in Nigeria, as most research studies use only quantitative methods and for that mixed method is rarely used. In essence, the methodological skills have greatly impacted my personal development in research which I am happy to share with my colleagues at the doctoral school in Leicester and others in my country.

11.4 Theoretical contribution

This study examined the psychological determinants of AA. Three personality variables, SC, LOC and SM, were evaluated as the conceptual variables in relation to AA. The results of the study affirm the findings of previous researchers (Guay et al., 2004; Moller & Pohlmann, 2010; Pinxten et al., 2015; Yeung, 2015) in support of positive relationships between the conceptual variables and AA. The study found a high positive relationship for SC, a moderate relationship for SM, and a minimal relationship for LOC in relation to AA.

The findings on SC in this study seem to align more with the self-enhancement model, which states that self-concept causes AA than with the suggestions of proponents of this model (Calsyn & Kenny, 1977) that efforts should be devoted towards intervention to improve self-concept rather than AA. This is because the goal of this study is to advance AA and not SC, since SC is not the only determining factor in AA. However, the findings did not relate to the reciprocal effect model (REM) (Marsh, 1986) because it was a cross-sectional study and not longitudinal. Marsh (1989) and colleagues suggest that since SC and AA are reciprocal both

deserve to be enhanced at the same time. The proposition by REM sits better with the findings of this study than the self-enhancement model. Continued enhancement programs geared towards SC will sustain the long term AA of students as one amongst other forms of intervention because SC accounts for the highest variation in AA of the students.

Rotter's (1966) theory of LOC was used as the framework for this study. The results showed low levels of association between LOC and AA, as 67% of the students had internal LOC. The high percentage of low achievers with internal LOC was the cause for the low level of the relationship, which challenges Rotter's theory. The results imply that the attribution of outcome to internal or external factors does not necessarily influence AA among this group of students. It could, however, be caused by other factors but not by their LOC. Locus of control's position in the model affirms its low level of correlation with AA.

The study found high SM among the students despite low levels of performance and infrastructural inadequacies. This finding does not conform to similar studies on school motivation. Wigfield et al. (2002), for example, found that students with high school motivation were more likely to have high academic achievement than those with less interest in school. Tella et al.'s (2009) study identified that the teachers' teaching method, the learning environment, and peer relations were the factors with the most influence on school motivation. In this study, the school environments were not favourable; they were inadequate and not conducive to learning. Peer relationships were good, but those with teachers and senior students were mixed. The overachievers had better relationships with the latter, and the underachievers' poor relationships with their teachers and senior students affected their AA.

The results of this study negate the findings of McInerney and Ali (2007), whose 'Inventory of School Motivation' (ISM) formed part of the survey items for SM in this study on the aspect of students' goal orientations. Their study found variances in the SM of students from a range of cultures (Australia, Hong Kong, USA and Africa). Although the students for this study came from different ethnic groups in Nigeria, there were no differences in SM among the ethnic groups. Another comparative study (Balarebe, 1989) on the SM of students from the three major ethnic groups in Nigeria found that the Hausa students performed lower than the other groups, which contradicts the findings of this study. The different achievement groups of students revealed a widespread performance goal orientation, but mastery goal orientation was more prevalent among the overachievers than the underachievers.

The findings of this study on socio-economic status (SES) emphasised the mother's profession, which is similar to Parsons's (1970) finding on the importance of occupation and family status. Although the father's profession and the mother's educational level made some contribution in the model, they were not as strong as the mother's main job. This shows the importance of women's careers and education, as an aspect of the family's SES, to the child's education and performance in school. This finding supports the notion that men are not the only or even the major determinant of a family's SES. It also supports investment in girls' education equal to that of boys'. Maikudi (2013) noted that support for girl's education is considered by parents in the north to be a waste since they would be married off into another family and would not contribute to her parents' support as a boy is expected to.

In conclusion, the mixed methods approach to data collection and analysis in this study has shown how the methodological limitations of previous studies can be overcome to provide valuable insight into students' AA and the role of the conceptual variables. Most previous studies that examined these concepts relied solely on quantitative analysis, including most of Herbart Marsh's studies, whose works on SC earned him as the 'most productive educational psychologist' ever. This could be that most studies in educational psychology use more of quantitative methods than qualitative or mixed methods for data collection and analysis. In this study, the two distinct stages of data analysis revealed various dimensions that broaden the understanding of influencing the students' AA as it relates to the main variables and how they contribute to the students' performance.

11.5 Summary of major findings

Below is a summary of the major findings presented in the empirical chapters:

Self-concept, locus of control and school motivation correlate with academic achievement (SC: 0.837; LOC: 0.380; SM: 0.536);

R square value (0.774); the amount of variation in AA explained by key conceptual variable and background variables.

Unstandardized coefficient: SC: 10.4; LOC: 1.4, SM: 3.3; this indicates the percentage increase in AA as a result of a unit increase in the conceptual variables. E.g. a unit increase in SC leads to 10% points.

Overall, the students have higher SM (88%) than SC (53%) and LOC (67%);

Parents' profession influence students' AA more than all of the other background factors, especially the mother's profession;

Boys have slightly higher AA, SC and LOC than girls but similar SM;

More boys than girls in the study (single sex schools and mixed schools);

Girls have the lowest mean age (16/17);

All student groups (based on SC, LOC, SM and gender) performed better in maths than in English;

Most students have low SES;

Low attainment cut across different levels of SES

Most of the parents attained a tertiary education;

Three achievement groups were identified: Overachievers, Achievers and Underachievers;

Not all low-achievers are underachievers, and not all high-achievers are overachievers;

Both OA and UA have high levels of aspirations,

OA are mostly science students, mostly speak Hausa at home, have high SM and had better relationship with others and the parents engage in informal employment.

UA are mainly internals in LOC, speak English at home

Most of the school facilities were inadequate to support effective teaching and learning, which are the major causes of underachievement

Inadequate basic and medical facilities resulted in stress and sickness, causing the students to miss out in school;

There were pedagogical problems among in-service corps members.

11.6 Limitations

This study focuses on identifying some of the major factors causing low AA of secondary school students in NN. It was however not possible to conduct the study among all the secondary school students in that part of the country, also considering the limitation of time for conducting the study. The study therefore covered only the first year senior secondary school students in fifteen schools of Kaduna State. The use of mixed methods was to collect an in-depth data from the sample to have various perspectives in determining some of the major factors hindering their AA. Delays were witnessed during the data collection processes in piloting the questionnaire and main data collection. This affected the time-line for data collection and completion of the study in due course. The first was the Ebola scare that made the government to delay resumption of schools for a month until assurances were provided by the Federal Ministry of Health that the spread was curbed and that it was safe for students to go back to school. The second was the collection of data for the main study. At first, election dates were postponed and after the elections, many parents feared that there might be violence heralding election result and refused to allow their children to resume school for a period of two weeks.

Another important limitation was the exclusion of the information on the subject tracks which was not captured in the survey. Although in the interview with the students, the study found that the overachieving students were mostly in the science subject track rather than the art track. There was also no information to show differences in the performance of students in the boarding schools to those that were day students. The information came up in the interview which would have been more useful in the survey since it had more respondents to see their influences on the students' performance. The study however focused on the general subjects, which are English and maths, offered by the students in all schools for easy comparison of performance among the students.

In addition, during the interview, one of the students did not permit recording her interview, so not all that she said was captured but important points were noted. One other student preferred to speak in Hausa which was not much of a problem since the researcher was fluent in the language. The ethical procedure had to be followed, even then not all the data from the students were used as well explained. The relevant data was used in presenting the major themes.

Also based on the focus of the study on the performance of students in NN, similarity among the achievement groups from the same school was not possible. This should eliminate or

reduce any possible explanations for differences due to difference school experience. Thus, some of the areas that are limited in this study are suggested for further studies.

11.7 Recommendations

Having reflected upon the findings of the study as well as the literature and my own experience both as a researcher and as a practitioner, the recommendations are not based solely on the findings of this research. Some of them are theoretically derived on similar previous studies on the concepts in relation to AA. The summary of major findings (in this chapter 11.5) contains some of the factors influencing the students' AA in school. Most of the factors were related to the educational infrastructure, which is the responsibility of the government to improve. The government needs not only to increase funding for schools but also ensure that the facilities are adequate and conducive for effective teaching and learning. A conducive school environment with adequate facilities will lead to good teaching and learning experience that should result in high performance, and sustain interventions towards improvement of SC and the other personality variables that can maintain prolong AA of the students.

However, the argument that similar school conditions exist in the southern part of the country, they follow the same curriculum and sit for the same standardised examinations, yet the students still perform better at aggregate level also holds the same for some students in the north. Regardless of these, a low standard of education prevails in the country as a whole only that the northern region tends to be worse off which is the focus areas for this study. In essence, improvement in infrastructure will go a long way in bringing about improvement in educational standards for the whole county.

In the same vein, some findings such as prevalence of poverty, inequality and disadvantage of students from the rural schools are major factors in AA that the schools cannot compensate for, but rather the government can develop strategies towards the improvement of the families SES. This is hinged on the evidence that most parents attained tertiary education but are not employed as expected in the formal sector. This result was higher for the mothers who were mostly found in the category of the informal sector jobs compared to fathers. Employment opportunities need to be provided which can lead to eradication of poverty or improved finance that can enable families to improve on standard of living and contribute more to the children's education. Also some evidence from this study show that schools can make a difference in enhancement of the students' personality perceptions that can lead to

improvement in their AA. Based on the literature review and conclusion drawn from the findings of this study, the following further recommendations are made for policy and practice.

11.7.1 Recommendations for policy and practice

Self-concept emerged as the greatest cause of variation in the students' AA. It is therefore important to initiate intervention programmes aimed at developing positive SC and other personality attributes amongst the students in schools. Since SC and AA have specific facets, the intervention should be targeted to impact their specific aspects. Craven et al. (1999) in support of REM suggested skills training to target outcomes that can constitute long lasting effect. For instance in English where students had lower AA than maths, students can be trained to improve in specific aspects of the subject that is giving them problems can be focused on. Some of these include improvement of reading, writing and speaking skills which can enhance both positive SC and improve performance in the subject. The use of positive statements by the students and other important people in school such as the teacher is another form of intervention strategy for developing students' SC (Burnett, 1996). Burnett's (1996) study found that positive self-talk lead to leads to positive SC or disposition while negative self-talk can lead to negative SC and self-defeating outlook. The evidence from this study shows that 77% of the students agree that they perform better when teachers listen to what they have to say (Chapter 6:7). This further shows that positive statements from the teachers can make a significant impact on students SC and performance compared to harsh statement by the teachers. In line with this is the use of positive feedback by teachers. Students with low scores or wrong scores on items can be given encouraging statements or constructive suggestions that can lead to improvement in SC and AA and need not to be judgmental. Negative reinforcement serves as punishment and should be avoided rather teachers need to show compassion and openness to their students. This can make them approachable for students to discuss some of their difficulties with them even outside the classroom settings. Also suggestions were provided for the use of internal rather than external frame of reference in comparing students' achievement (Marsh, 1985; Rotter, 1966). Marsh (1985) stated that placement of students in high ability schools can lead to low SC compared to being in conventional schools. Students' progress can easily be noticed when internal frame of reference is used in assessing student's improvement or attainments.

These are examples of intervention programmes used in developing students' positive SC to enhance AA. However, the schools can select some of the intervention programmes that they find most appropriate for their students. Irrespective of the intervention programme that the school chooses, it will need to adequately prepare the personnel to implement the intervention which should include the teachers, school guidance and counsellors and the head teachers. They can be given intensive in-service training on the importance and adequate involvement for better results. These programmes can then be incorporated into the teacher training curriculum and development plans. Corps members need to be trained in teaching and classroom management. They need to be mentored and adequately supervised throughout their stay in the schools. Guidance and counselling programmes can be organised periodically for all of the teachers in the form of workshops and conferences to equip them with necessary skills to help students to develop appropriate problem solving strategies, which would improve their performance. Every school should have a guidance and counselling unit to assist students with identifying their potential and to help them overcome some of their psychological problems in order to strive to achieve academically.

In addition the intervention programmes, this study recommends that teachers should try to know all of the students in their classes and call them by their names, especially among average sized classes. In the case of large classes, teachers can try to know some of them for particular reasons such as the best, troublesome ones, quiet ones and so on. Others may think that they are also known by the teacher. Teachers need to interact with students, encourage them, and make them to feel a sense of worth and importance. The teachers need to be positive, show interest in their subjects, engage the students in classroom activities, make the lessons interesting and be flexible in teaching to show consideration to less-able students. Different teachers can teach particular topics, according to their field, preferences, and strengths, rather than having only one teacher to teach all of the topics of a subject. This will provide the students with a variety of teachers, thereby alleviating the problem of teachers who are themselves hindrances to the students' performance in that subject. In the same vein, the government will need to encourage the teachers to be more engage with students by improving on their welfare package which is indicated by the literature to be a factor for not being able to retain quality teachers in the teaching profession in the country (Adeyemi, 2008, DFID, 2013).

School principals and counsellors can periodically organise seminars for students to enhance their positive perception of their AA and SM, and to promote internal LOC as their attribution

belief with regard to their performance. At such meetings, successful individuals can be invited to meet and talk to the students. This would provide students with the opportunity to see and meet people from different careers or fields who could become their role models. This has the potential to heighten their level of aspiration and may lead to increase effort to achieve greatly. At such meetings, students need to warn against bullying and to be friendlier towards one another.

Tangible and non-tangible rewards can be offered to reinforce academic and social accomplishments in and outside of school. Acknowledgement of non-academic areas can help students improve their positive self-image and instil a sense of worth that could lead them to improve academically (Mayana, 2011). Pictures of students can be placed on a bulletin board in recognition of various accomplishments. In order not to demoralise the students; a positive grading system can be used. When students did not answer correctly, encouraging remarks can be given rather than marking it wrong.

Also, since parents are quite significant people to the child and their performance in school, they need to be more engaged and committed to their children's academic activities and general well-being. Adequate provision and care needs to be provided at school and at home. The home environment needs to be conducive to learning as well as to emotional and psychological stability. For those that are in boarding school, parents can spare time to check on their well-being through frequent visits. Parents who can afford it can hire tutors at home or during holidays. Older siblings can be encouraged to assist the younger ones when necessary, especially in situations where the parents are less educated or cannot afford tutors. Fathers can be equally more involved as the mothers, especially as more of the fathers hold tertiary certificates than the mothers.

Finally, most of these recommendations do require effort, time, and space but do not entail much fund allocation from policy makers, schools, teachers, and parents. All it takes is adequate engagement on the part of stakeholders to come to the aid of the students in order to help them attain good AA. However, the study notes that the government still has a major role to play in the provision of adequate infrastructure, development of programmes to eradicate poverty level of families and improvement of staff welfare. There would be long lasting effect of the intervention programmes and student AA. The commitment to the provision of quality education and strong political will from the government in partnering with education stakeholders such as the schools, parents and educationists would lead to great improvement

in the students AA of the students. The government can also seek the support and contributions from the NGOs, multinational organisations and other private companies in providing and sustaining quality education in the country. In addition, during the course of this study and exposure to literature, a number of areas have been identified as questions and gaps that will need further research investigation. The next section lists some of the areas that require further research study.

11.7.2 Suggestions for further study

Some of the compelling areas that may need further examination based on the findings of this study involve:

Longitudinal studies to examine long-term effects of the relationships between the concepts in this study with academic achievement

Comparative studies could also be carried out between southern and northern students, using similar constructs, and among public and private schools in the northern region.

Comparative studies between day and boarding students into the relationship between academic achievement and the conceptual variables.

An exploration of the relationship between the conceptual variables and academic achievement of the students in science and arts subject tracks.

A study involving characteristics of underachievers and overachievers from the same school.

Appendix 1

Questionnaire



Academic Achievement among Senior Secondary School Students

My name is Amina Ahman and I am a PhD student at the University of Leicester in the UK. I am researching the academic achievement of secondary school students in Nigeria. This questionnaire will ask about your experiences in school and your ideas about how you learn. The findings from this study will help teachers understand more about what motivates young people of your age to learn and will help them offer better support when preparing students for final examinations.

Taking part in this study is completely voluntary and there will be no penalty for not participating. You have the right to withdraw from the study at any time without consequence.

I have asked you for your name so that I can match your responses on the questionnaire to your test scores and to select a few students that will be interviewed. Your name will not be shared and your answers will be kept confidential.

There are no right or wrong answers but please try and answer every question either by ticking the box or writing out your answer in full.

There are 4 sections in this questionnaire. Please read the instruction on each section first and feel free to ask any questions.

Thank you for your co-operation and for helping me with my research.

Section A: What do you think about learning maths and English in school?

In this section, I want to ask for your thoughts about your performance in mathematics and English. Please use the scale to tell us how much you agree or disagree with each statement.

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Mathematics is one of my best subjects					
2.	I look forward to mathematics classes					
3.	I enjoy studying for mathematics					
4.	I get good marks in mathematics					
5.	I have always done well in mathematics					
6.	I often need help in mathematics					
7.	I have trouble understanding anything with mathematics in it					
8.	I do badly in mathematics tests					
9.	I never want to take another mathematics course					
10.	I hate mathematics					
11.	I look forward to English classes					
12.	Work in English classes is easy for me					
13.	English is one of my best subjects					
14.	I get good marks in English					
15.	I learn things quickly in English classes					
16.	I am hopeless in English classes					
17.	I do badly on tests that need a lot of reading ability					
18.	I am not very good at reading					
19.	I hate reading					
20.	I look forward to reading					

Section B: What do you think about your performance in school?

In this section, I want to understand whether or not you think your grades are as a result of your efforts or other factors. Please use the scale to tell us how much you agree or disagree with each statement.

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	If I put in enough effort I can succeed in my school work.					
2.	Whether or not I do well in my school is completely up to me.					
3.	Family demands or other problems prevent me from putting a lot of time into my school work.					
4.	If I had different teachers, I would try harder in my school work.					
5.	Whether or not I do my homework has little to do with the kind of grade I get.					
6.	Practice will enable me to have better grades in my school work.					
7.	The idea that teachers are unfair to students is nonsense.					
8.	When met with problems in school, I give up easily.					
9.	It is almost useless to try hard in school because other students are just smarter than me.					
10.	Being successful in school is a matter of hard work; luck has little or nothing to do with it.					

Section C: About your school

This section asks about the features of your school that you think encourage you to perform well. Please use the 5 point scale to indicate your agreement or disagreement with each the following statements.

S/N	School Motivation	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Extra lessons in my school would improve my grades					
2.	I get good grades in subjects where teachers listen to what I have to say					
3.	If the class is small, I can follow lessons more easily.					
4.	I do my best work at school when I work with others					
5.	If I need extra help, I receive it from my teachers					
6.	Getting a reward for my good school work is important to me					
7.	I do best when teachers use teaching aids to support their lessons (e.g. pictures).					
8.	I attend classes because the school provides food for students					
9.	I feel comfortable when taught by teachers of a different sex to me.					
10.	I do better in school when water is provided for toilet use.					

Is there anything else you want to tell us about your attitude towards school? Write in the box below.

--

Section A: About You

This section asks for some basic information about you.

1) Student Name _____
(Family name first)

2) On what date were you born?
(Please write the month and year you were born)

_____ _____
Month Year

3) Are you female or male?
(Please tick ✓ only one box)

Female Male
☐ ☐

4) Which ethnic group do you belong? (Please tick ✓ only one box)

Hausa	☐	Igbo	☐	Yoruba	☐	Others	☐
-------	--------------------------	------	--------------------------	--------	--------------------------	--------	--------------------------

If others, specify _____

5) What Main language do you speak at home?

- I. English
- II. Hausa
- III. Igbo
- IV. Yoruba
- V. Others (specify) _____

6) What is your mother's (or female guardian's) highest level of schooling

- I. Primary
- II. Secondary
- III. Tertiary
- IV. Others (Specify) _____
- V. Don't know

7) What is your mother's (or female guardian's) main job?

- I. Civil servant
- II. Business
- III. Home duties
- IV. Self employed
- V. Others (Specify) _____
- VI. Don't know

- 8) What is your father's (or male guardian's) highest level of schooling?
- I. Primary
 - II. Secondary
 - III. Tertiary
 - IV Others (Specify) _____
 - V Don't know

- 9) What is your father's (or guardian) main job?
- I. Civil servant
 - II. Business
 - III. Farmer
 - IV. Self employed
 - V. Others (Specify) _____
 - VI. Don't know

Thank you for taking part in this study. Your help is greatly appreciated. If you have any other thoughts on what you been asked please let us know in the box below.

Appendix 2

Semi-structure interview Schedule/Guides

What will you like to become when you finish school?

What is your subject combination?

How good are your grades in the subjects?

How do you feel when you have high or low grades?

What do you have to do to get good grades?

How would you compare your performance in English and maths with your main subjects?

When faced with difficult problems in school, what do you have to do?

Is it better to be clever than to be lucky, why?

Do you like to be praised for good school work, why?

What level of education do you aspire to?

How long do you spend doing extra work with your friends?

What kind of work do your parents do?

Do they help you in your school work?

Do you enjoy working in school or at home?

Where do you get help from whenever you are in trouble?

What subjects don't you look forward to and why?

Which subjects do you look forward to and why?

What aspect of the school are most interesting to you?

Appendix 3

Sample of the Interview Extracts with students

- Interviewer What is your best subject in school?
- P I like English, maths and chemistry, but English is my best subject.
- Interviewer Do you have any reason for that?
- P English is good in many ways. For example, anywhere you go, you can easily communicate with people, especially when one is in need of assistance. I also get good grades in it and I like our English language teacher, she teaches us well.
- Interviewer Do you already have a future, career that you will like to become when you finish school?
- P Yes, I want to become a medical doctor or a pharmacy
- Interviewer Do you have a reason for wanting to be a doctor or just to give people injection?
- P Smiles:
- The only reason why I want to become a medical doctor is to help people with their health, help with their needs, because in our country, we don't have enough medical doctors to treat people. In many hospitals there are no doctors and this is bad for us in Nigeria. They are still looking for doctors. So I want to become doctor to help people. It is not that I want become a doctor for something ease for other reasons.
- Interviewer So that is your reason?
- Do you think you are doing the right subjects for that?
- P1 Yes I am studying chemistry, physics and biology.
- Interview Are you getting good grade in the science subjects as well?
- P1 Yes, I did very well in them but in maths I am trying harder on it
- Interviewer Why do you think you are not getting good grade in maths, is there any reasons why you can think about?
- P1 Sometimes it is not the students, it is the teachers. Some teachers will enter classes. They will just give notes. They will not explain. Some teachers are trying their efforts to see that students understand everything but students will not listen to understand. That is why.

Interviewer Sometimes it is the problem of the students and sometimes _ _ _

P it is the problem of the teachers.

Interviewer So do you think that there's the way that you can be helped to improve on your grades since you need it and you have interest in it. Do you understand and you need it?

P Yes

Interviewer What would you suggest for improvement?

P My suggestion is that like in our class our maths teacher is a cooper. 'Kuma' we are over populated in our class. She will enter and give notes and go outside. She will say that we should call it a day. Kuma we are over populated. Sometimes if she explains she'll not raise her voice to explain so that people will not even hear. For the extra lesson we'll joined in one class both science one and two. If you come to the class, the class is full. You will stay outside. If you stay outside where will you hear? We will copy the notes to go and look for somebody to explain it for you.

Interviewer what kind of help do you think you need?

P I need guidance, someone to be guiding me

Interviewer Is the teacher not doing enough?

P She is doing but ma you know but some teachers if the work is too much for them even when they explain it will be like they are reading; something like they are reading a novel and you will not understand, they will not follow it gradually they will just be rushing, like they are reading.

Interviewer So many people failed

P Yes. Many people failed maths

Interviewer What was your score?

P I scored 8 over 70

Interviewer What should the teacher do to improve your grades?

P She should stop reading as in when she enters the class, maths is not all about giving notes, then just write and be explaining. If she enters she should give question number 1 as in example, then let her solve it 'do you understand'. By that we can be better.

Note: This is to show example of the interview with the students. For ethical reasons students names are excluded throughout the presentation of the result in this study.

Appendix 4(a)

Demographic profile of the residuals for interview

Overachiever (OA)

S N.	MA A	EAA	AA	DOB	Sex	Ethnicity	Lang. at Home	Mothers Education	Fathers Education	Mother's Job	Father's Job
1	90	95	93	1995	M	Hausa	Hausa	Secondary	Tertiary	Civil S.	Skill jobs
2	87	66	77	1999	F	Others	English	Secondary	Primary	Civil S.	Professional
3	91	71	81	2000	F	Hausa	Hausa	Tertiary	Tertiary	Civil S.	Professional
4	90	76	83	1998	M	Yoruba	Yoruba	Primary	Secondary	Skill jobs	Civil S.
5	90	85	88	1996	M	Hausa	Hausa	Tertiary	Tertiary	Civil S.	Others
6	60	60	60	1998	M	Others	English	Tertiary	Tertiary	Civil S.	Skill jobs
7	64	30	47	1997	F	Hausa	Others	Primary	Secondary	Business	Skill jobs
8	83	45	64	1998	F	Hausa	Hausa	Islamic	Primary	Business	Civil S.
9	90	96	93	1998	M	Others	English	3 Tertiary	Tertiary	Skill jobs	Skill jobs
Total	82	69	77	1998	M	Hausa	Hausa	Tertiary	Tertiary	Civil S.	Skill jobs

Underachievers (UA)

10	22	20	21	1994	F	Hausa	Hausa	Secondary	Secondary	Skill jobs	Civil S.
11	28	24	26	2000	F	Hausa	Hausa	3 Tertiary	3 Tertiary	Business	Skill jobs
12	70	68	65	2000	M	Others	Others	1 Primary	Primary	Civil S.	Skill jobs
13	18	22	20	1995	F	Yoruba	4Igbo	Don't know	Don't know	7	5 Business
14	52	20	36	2001	F	Others	other	Secondary	Primary	Professional	2 Civil S.
15	19	30	25	1997	M	Hausa	Hausa	1 Primary	Primary	Civil S.	2 Civil S.
16	41	55	48	1998	M	Hausa	Hausa	6 Islamic	Primary	Civil S.	2 Civil S.
17	35	45	40	1998	F	Hausa	Hausa	1 Primary	Don't know	Skill jobs	4
18	27	51	39	1999	M	Others	English	Secondary	Primary	Professional	7
19	14	20	17	1999	M	Others	Hausa	3 Tertiary	Tertiary	Islamic	Business
20	24	12	18	1998	F	Hausa	Hausa	6 Islamic	Secondary	Skill jobs	Skill jobs
Total	29	30	27	1998	F	Hausa	Hausa	primary	Primary	Civil S.&3	Civil S.

Appendix4 (b)

List of the interviewed students showing distribution on the conceptual variables and the type of school

Overachiever (OA)

S N.	Cases	AA	Predicted Value	Residual Value	MSC	ESC	SC	LOC	SM	School Type	Name of School	Location
1	50	93	65	28	4.3	4.5	4.4	3.8	4.1	Boys	4	2
2	242	77	50	27	2	2.8	3	3.3	4.2	Girls	2	2
3	244	81	51	30	1.6	3.6	3.6	4	4	Girls	2	2
4	333	83	61	22	4.4	4.2	4.5	2.7	3.6	Boys	13	2
5	345	88	65	23	3.9	4.2	4.5	3.9	4	Boys	4	2
6	380	60	37	23	1.6	2.4	2.5	3.3	2.8	Boys	13	2
7	463	47	26	21	3	2	2.8	2.2	1.2	Girls	5	1
8	464	64	41	23	3.3	2.3	3	2.6	3.3	Girls	5	1
9	804	93	70	23	4.5	4.8	4.6	4.4	4.7	Mixed	14	2
Underachievers (UA)												
10	1057	42	50	27	1.6	3.1	2.3	3.4	3.6	Girls	12	2
11	1118	36	46	22	2	2.3	2	3	3.7	Girls	12	2
12	1164	69	76	24	4.5	4.5	4.5	3.7	4	Mixed	15	2
13	781	20	46	26	4	2.4	3.2	2.8	4	Boys	10	1
14	29	36	52	16	4.2	1.5	2.8	4.2	4.3	Girls	1	2
15	63	25	41	16	1.8	2.3	2	1.4	3.6	Mixed	6	1
16	65	48	66	18	3.7	4.3	4.2	4.1	3.6	Boys	4	2
17	70	40	56	16	3.6	4.3	3.9	3.4	3.7	Girls	1	2
18	142	39	58	19	2.2	4.7	3.5	4	3.3	Mixed	6	1
19	922	17	33	16	3	1.8	2.4	2.9	2.7	Boys	9	1
20	696	18	33	15	2.4	1.4	1.9	4	3.6	Mixed	11	1

Appendix 5

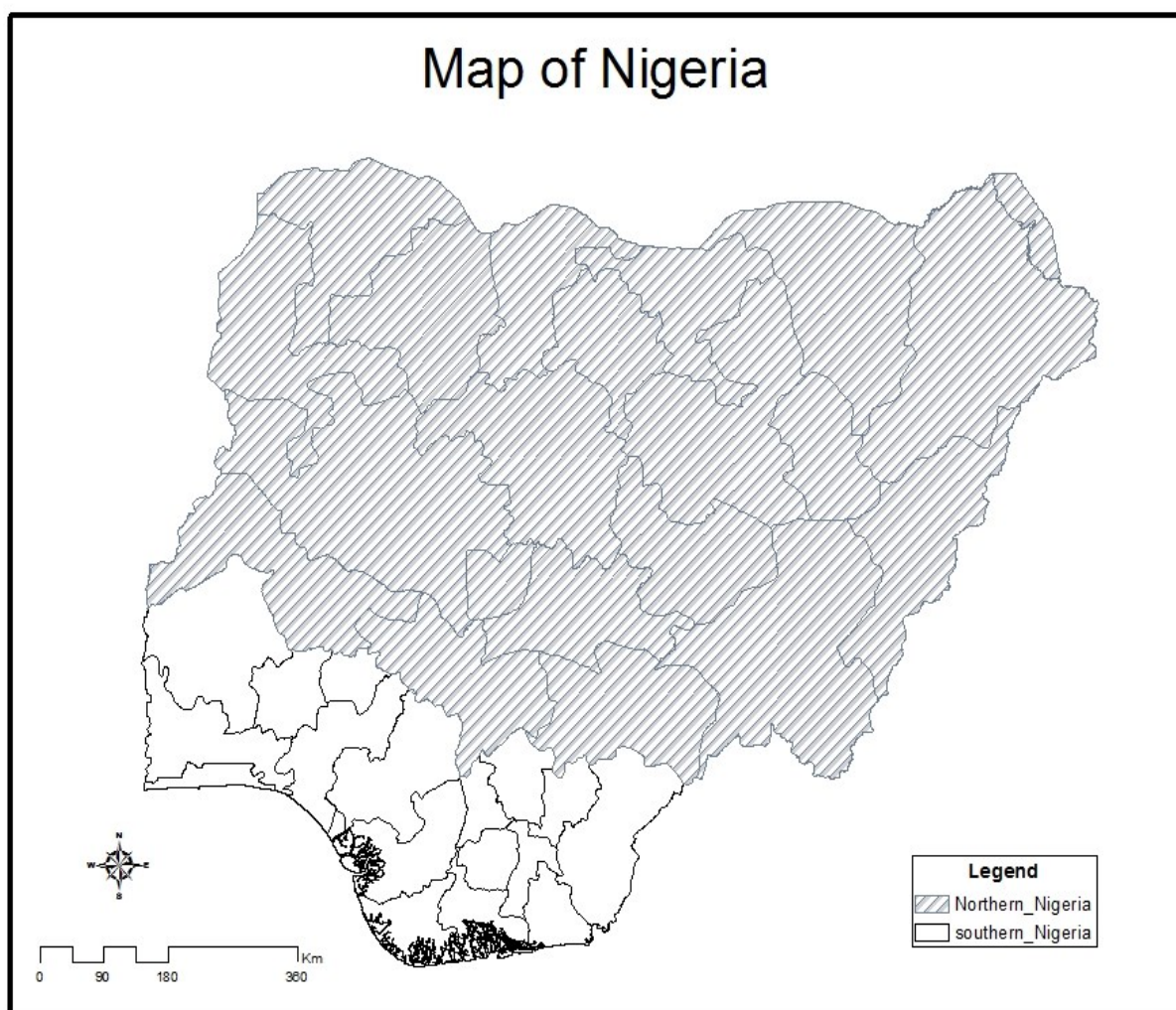
Distribution showing the characteristics of the academic achievement groups and students' background factors

Academic Achievement Groups	N	Gender (%)		Age Group		Ethnicity %		(% of those who Spoken English at Home	
		Female	Male	Old	Young	Hausa	Non-Hausa	English	Non-English
Over-achievers	35	46	54	27	73	41	59	27	73
Average-Achievers	1149	45	55	52	48	54	46	50	50
Under-achievers	43	51	49	82	18	52	48	68	32

Academic Achievement Groups	Mother's School Level %		Mother's Main Job (%)		Father's School Level (%)		Father's Main Job (%)	
	Tertiary	Non-tertiary	Formal	Non-formal	Tertiary	Non-tertiary	Formal	informal
Over-achievers	70	30	77	23	66	34	40	60
Average-Achievers	43	56	48	52	44	56	63	37
Under-achievers	35	65	24	76	56	44	48	52

Appendix 6

Map indicating the north and south of Nigeria



Source: Developed for this study by Mosa Al-Riymi (2016), Department of Geography University of Leicester.

Appendix 7

Ethics Approval from University of Leicester

To: **AMINA AHMAN-MAHMUD**

Subject: Ethical Application Ref: **aa771-ea62**

(Please quote this ref on all correspondence)

19/05/2014 12:48:04

School of Education

Project Title: **Self-Concept, Locus of Control and School Motivation in Relation to Academic Achievement among Secondary School Students in Northern Nigeria**

Thank you for submitting your application which has been considered.

This study has been given ethical approval, subject to any conditions quoted in the attached notes.

Any significant departure from the programme of research as outlined in the application for research ethics approval (such as changes in methodological approach, large delays in commencement of research, additional forms of data collection or major expansions in sample size) must be reported to your Departmental Research Ethics Officer.

Approval is given on the understanding that the University Research Ethics Code of Practice and other research ethics guidelines and protocols will be complied with

- <http://www2.le.ac.uk/institution/committees/research-ethics/code-of-practice>
- <http://www.le.ac.uk/safety/>The following is a record of correspondence notes from your application **aa771-ea62**. Please ensure that any proviso notes have been adhered to:-

--- END OF NOTES ---

Ethics Approval from Kaduna State Ministry of Education

MINISTRY OF EDUCATION
KADUNA STATE

Telephone: 242222 PBX
Commissioner: 249721
Perm Sec.: 062-249722
Telegram: SECEDUCATE
NCE/STAT.3/Vol.II/.....

Ref:



State Secretary
Independence W
Private Mail Bag No. 21
Kaduna Nige

Date: 25-2-15

The ZONAL
DIRECTOR(S)

PERMISSION TO CONDUCT RESEARCH

The bearer Mal/Mr./Mrs./Miss/Messrs: AMINA AHMAN
MAHMEIN is a student from LEIBES
TER, UK

conducting a research on: SELF CONCEPT LOCUS
OF CONTROL AND SCHOOL MOTIVATION IN RELA-
TION TO ACADEMIC ACHIEVEMENT OF SECONDARY
SCHOOL STUDENT IN NORTHERN NIGERIA.
for the award of PHD (EDUCATION RESEARCH)

I am directed to convey the Ministry of Education's approval for the above research.

Give him/her your maximum co-operation please.

Officer's Name YAKUBU U. SALEH Signature
Designation AD/PRS Date 25-2-15

(
For: Hon. Commissioner

KADUNA STATE
MINISTRY OF EDUCATION
ZONAL EDUCATION OFFICE
KADUNA

Tel: 062-218499
Email: zonaleduckad@yahoo.com

ADDRESS:
Doka Crescent
Private Mail Bag No. 2169
Kaduna - Nigeria

Your Ref: _____
Our Ref: KDZ/GEN/1018/VOL. I/110



Date: 20/3/2015

The Principal,
College
Govt. Girls' High School &
475 Regasa (GNA)
Girls' High School (GNA)

RE: PERMISSION TO CONDUCT ACADEMIC RESEARCH FOR THE
BEARER AMINA AHMAN MAHMUD

I am directed to inform you that above bearer is a student from Leices Ter UK conducting a research on "Self Concept Locust of Control and School Motivation in Relation to Academy Achievement of Secondary Schools Student in Northern Nigeria" for the PHD (Education Research).

Approval has been granted for her to carry out academic research. Your are therefore requested to assist and give her the necessary co-operation to conduct the research in your School, Please.

edu
Sign
Zo
Head
23/3/15
Martha James

Martha James
CPO
For: Director.

**KADUNA STATE
MINISTRY OF EDUCATION
SABON-TASHA ZONE**

*All Correspondence
to be addressed to
the Zonal Director*

MOE/STZ/G.187/Vol.1/
Your Ref:

Our Ref:



ADDRESS:
Zonal Office
Sabon-Tasha
PMB 0003
Kaduna-South

Date: 16th March, 2015

The PRINCIPAL
G. G. S. BAROAWA
KADUNA

PERMISSION TO CONDUCT RESEARCH

Amma Atman Mamud

Reference to the above subject matter. I am directed to forward the above named student from: LEICESTER, UK

to conduct research on: SELF-CONCEPT, LOCUS OF CONTROL AND SCHOOL MOTIVATION
IN RELATION TO ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOLS
STUDENT IN NORTHERN NIGERIA
in your school for the award of: PHD (EDUCATION)
RESEARCH

2. You may wish to offer him/her your maximum cooperation, please.
3. Thank you.

J. T. Alkali (Mrs)
CPO
For: Zonal Director

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