

CHAPTER ONE

INTRODUCTION

Background to the Study

Learning is an instinct of living creatures and it has always been an issue of great concern for parents, school administrative bodies, educational policy makers, and students themselves. Learning or latent variable, typically measured as academic performance in continuous assessment and end of term examinations is shaped by a wide variety of factors intrinsic to students and their external environment. In students' performance, the place of non-cognitive variables cannot be overemphasized. Non-cognitive variables can broadly be referred to as 'catch-all' to focus on variables that cannot be measured by cognitive based test scores. Non-cognitive variables are variables relating to mindset, motivation, perseverance, social skills, engagement, self-regulation, self-discipline, and learning strategies which matter in school performance (Jason, Cheri & Ginger, 2012). This suggests that in addition to content knowledge and academic skills, individual student must develop sets of behaviours, skills, attitudes, and strategies that are crucial to academic performance.

Economics is one of the school subjects commonly chosen as a course of study. As a subject, it is concerned with the study of scarce resources allocation to satisfy unlimited want, and it is in the light of this that Yusuf (2014) viewed it as an integral part of human life. Economics occupies a pride of place in the secondary school curriculum in Nigeria as its knowledge is required for the successful study in very many important professions. Economics must be meaningfully learnt for it to contribute effectively to the economic, social and political

life of people. The level of knowledge of Economics a citizen acquires will determine their ability in solving economic problems and making of rational decisions concerning the society.

For Economics to be meaningfully learnt by students, non-cognitive variables must be harnessed. Harnessing these variables could bring about meaningful learning and enhanced academic performance. However, the extent to which students' performance in Economics could be enhanced depends on certain non-cognitive variables such as academic mindset, academic motivation, academic perseverance, and academic engagement. The learning capability of a well-taught student with reasonable level of these variables might be geared up thereby leading to improved academic performance of the student in Economics.

One of the non-cognitive variables capable of dictating students' academic performance in Economics is academic mindset. Academic mindsets are the psycho-social attitudes or beliefs one has about oneself in relation to academic activities both at home and in school. Students' academic mindset affect the quality, duration, and intensity of their engagement in academic behaviours (attending class & studying) and adopt learning strategies that, at the end, can powerfully affect students' learning and academic performance either positively or negatively (Jason, Cheri & Ginger, 2012). Academic mindset according to Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson and Beechum (2012) is a four-fold concept. The first aspect of mindset involves a sense that one has a rightful place in a given academic environment and can fully claim membership in a classroom community. The second aspect of mindset has to do with the belief that one's academic ability can improve in response to one's efforts, rather than being fixed at a given level and outside of one's control. The third mindset relates to beliefs about abilities to succeed at a given task, while the fourth aspect of mindset involves a student's sense that the subject matter he or she is studying is interesting and holds value.

Student's mindset to a subject can either be positive or negative depending on his/her beliefs or attitude about self in relation to school and learning. Positive academic mindsets, in the opinion of Farrington, et al. (2012), will motivate students to persist at school work; which in turn will manifest itself through better academic behaviours (engagement) and consequently lead to improved academic performance. Adeyemo and Agokei (2010) described the positive aspect of the construct as belief about one's ability to perform successfully in a given course. On the other hand, negative academic mindset will cause the students to relent and belief they cannot make headway in their academic race. Academic mindset which is described as personal judgment of one's capabilities to organize and execute course of action to attain designated types of educational outcomes (academic performance) is capable of determining students' level of achievement in their academic race; because it is an imperative part of preparation and performance.

A number of studies have been undertaken on academic mindset at various levels of education. Most of these studies support the notion that academic mindset is a strong facilitator of academic performance and that a positive or negative change in the concept tends to produce a commensurate change in academic performance (Valentine, Dubois & Cooper, 2004; Yara, 2010). Feeling part of a school or classroom environment will make students more likely to engage in productive academic behaviours. Dweck (2008) found a positive correlation between academic mindset and students' academic performance. Academic mindset cannot be exhaustively discussed without reference to academic perseverance.

Perseverance is the ability to stick with the same point of view as previous after negative influences, resistance, or discouragement (in spite of obstacles). It involves dealing with hurdles rationally rather than complaining (to efficiently move further in accomplishing a task instead of

being irritated about the task). It is on this basis that Okunbanjo (2014) described perseverance as a stable and continuous performance of one's work or duties even when it is painful or risky. This could best be understood in terms of individuals' motivation, deterrents, personal dispositions, attitude, beliefs and social economic status. In the academic milieu, academic perseverance means the degree to which a student could continue engaging in academic activities in spite of difficulties or obstacles within or outside the academic environment.

In relation to academics, De-Vera, Gavino and Portuga (2015) posit that perseverance is related to better performance and greater success not only in academia but also in the real-world setting. It is believed that students who persevere tend to work harder and longer and are more inclined to engage in voluntary practices so as to enhance academic performance or success. This is on the notion that academic performances are limited by innate factors and cognitive skills, and therefore require deliberate or voluntary efforts on the part of the student(s) to change or improve particular characteristics of achievement (Ericsson, 2006). Students who persevere are more persistent and diligent, not discouraged by setbacks or failure, more focused on homework or assignment, and more likely to complete academic tasks. In contrast, the less students persevere the less they persist, they are easily distracted by new ideas or academic project, unable to set long-term goals, and lack motivation or focus for long-term achievement.

Regardless of this, conflicting results have emerged on the influence of academic perseverance on students' academic performance. For instance, Mattern (2005) found in his study that students who have perseverance skills and have capability to achieve their goals are able to get more chances and face academic challenges; which will consequently lead to good academic performance. They have best learning skills, positive attitude towards their academic skills, have higher passion of love and explore new ideas. On the contrary, Duckworth, et al.

(2007) revealed that perseverance was related with lower academic performance scores. This, however, makes research on the influence of academic perseverance on academic performance inconclusive. Academic perseverance cannot be exhaustively discussed without reference to academic engagement.

Academic engagement is a set of behaviours that signal serious psychological investment students devote to educational activities inside and outside of classroom setting. In the opinion of Akin (2009), student's academic engagement is the extent to which they are actively involved in significant educational experiences and activities. The definition above factored out two things that are highly salient to student engagement, which are active involvement, and significant educational experiences. In its simple form, academic engagement is a construct that describes behaviours usually related with being a good student. These, according to Farrington, et al. (2012), include frequently attending class, arriving ready to work (with necessary learning materials), paying attention, taking part in instructional activities and class discussions, and devoting out-of-school time to studying and completing homework.

Academic engagement can be said to be a multidimensional construct that is diverse in definition and coverage, and encompasses different aspects of students' life. It is a construct that encompasses components like behavioural, emotional and cognitive characteristics of students (Fredricks, Blumenfield & Paris, 2004). Behavioural engagement references students' behaviour in school, such as homework completion, absence of disruptive behaviours (absenteeism or tardiness), paying attention in class, and taking part in instructional activities. The emotional aspect of academic engagement denotes students' feelings about school, and their interest in the school activities. Cognitive engagement on its own discusses students' investment in learning, such as their desire to go beyond requirements, preference for a challenge and use of learning

strategies to their own advantage (Fredricks, et al., 2004). Academic engagement cannot be exhaustibly discussed without reference to academic motivation.

Academic motivation as a non-cognitive variable has also been explored by scholars such as Ryan and Deci (2000), Omondi (2005) and Slavin (2006). Academic motivation is the energetic force behind student's inspiration to learn and excel in academic work. The place of motivation in academic success cannot be jettisoned because it is what gets one going, keeps one going, and determines where one is to go (Slavin, 2006). Motivation is one of the elements that contribute to academic performance. It is crucial to a student's academic success at any age and any academic level. This is on the notion that development of academic motivation has significant implications for academic careers either in the short run or at the long run. Academic motivation is an imperative concept in academic settings and is linked to increased levels of academic performance. Students with high level of academic motivation are more probable to have increased levels of academic achievement.

The motive behind students' academic success may be intrinsically or extrinsically inclined. Academic motivation is intrinsically inclined if the student involved is highly motivated to do homework and other academic activities out of curiosity and interest, but extrinsically incline if the student is motivated to do homework and other academic works to procure the approval of the teacher or parent. Reasonable numbers of studies have emerged on the influence of academic motivation on students' academic performance. For instance, Krishnamurthy (2000) found a positive and significant relationship between academic motivation and academic performance. On the contrary, Omondi (2005) found that there was no significant relationship between academic motivation and academic achievement of students.

In recent times, academic performances of students in their academic pursuit had not been encouraging. Academic performance refers to the observable and measurable behaviours of students in a particular situation. This is why Abdullahi (2005) referred to it as an individual's attainment after a course of instruction that is commonly designated by test scores. This means that academic performance is an end product of learning. Academic performance as an end product of learning is commonly measured by examination.

When examinations are conducted, students are expected to perform well but reverse is the case in most instances especially in external examinations like the West African Senior Secondary Examination (WASSCE). This assertion is evident in the trends of performance in the result released by the West African Examinations Council (WAEC) from 2008 to 2017 as presented in Table 1:

Table 1: Students' Academic Performance in Economics (WASSCE 2008 – 2017)

Years	Candidates that sat for the Subject	Candidates with pass at Credit Level (Grades 1-6)	%with pass at Credit Level	Candidates with Non-Credit passes (Grades 7-F9)	%with Non-Credit passes
2008	1,204,515	592,588	49.20%	611,927	50.81%
2009	1,270,557	592,939	46.67%	677,618	53.33%
2010	1,228,401	690,949	56.25%	537,452	43.75%
2011	1,413,886	841,258	59.50%	572,628	40.50%
2012	1,540,902	864,273	56.09%	676,629	43.91%
2013	1,532,194	1,025,703	66.94%	506,491	33.06%
2014	1,363,994	698,669	51.22%	665,325	48.77%
2015	1,476,122	687,983	46.61%	788,139	53.39%
2016	1,403,907	627,546	44.70%	776,361	55.30%
2017	1,435,801	677,698	47.20%	758,103	52.80%

Source: WAEC Statistics Division, Yaba, Lagos (2017).

The results presented on Table 1 show that the number of students that sat for Economics in the West African Senior Secondary Certificate Examinations (WASSCE) in 2008 was 1,204,515 and

the percentage that got credit and above was 49.20%. In 2009, 1,270,557 candidates sat for the same subject but only 44.67% got credit and above. From 2010 to 2017, the percentage of those that got credit or above is 56.25%, 59.50%, 56.09%, 66.94%, 51.22%, 46.61%, 44.7%, and 47.2% respectively. This trend is further shown in Figure 1.

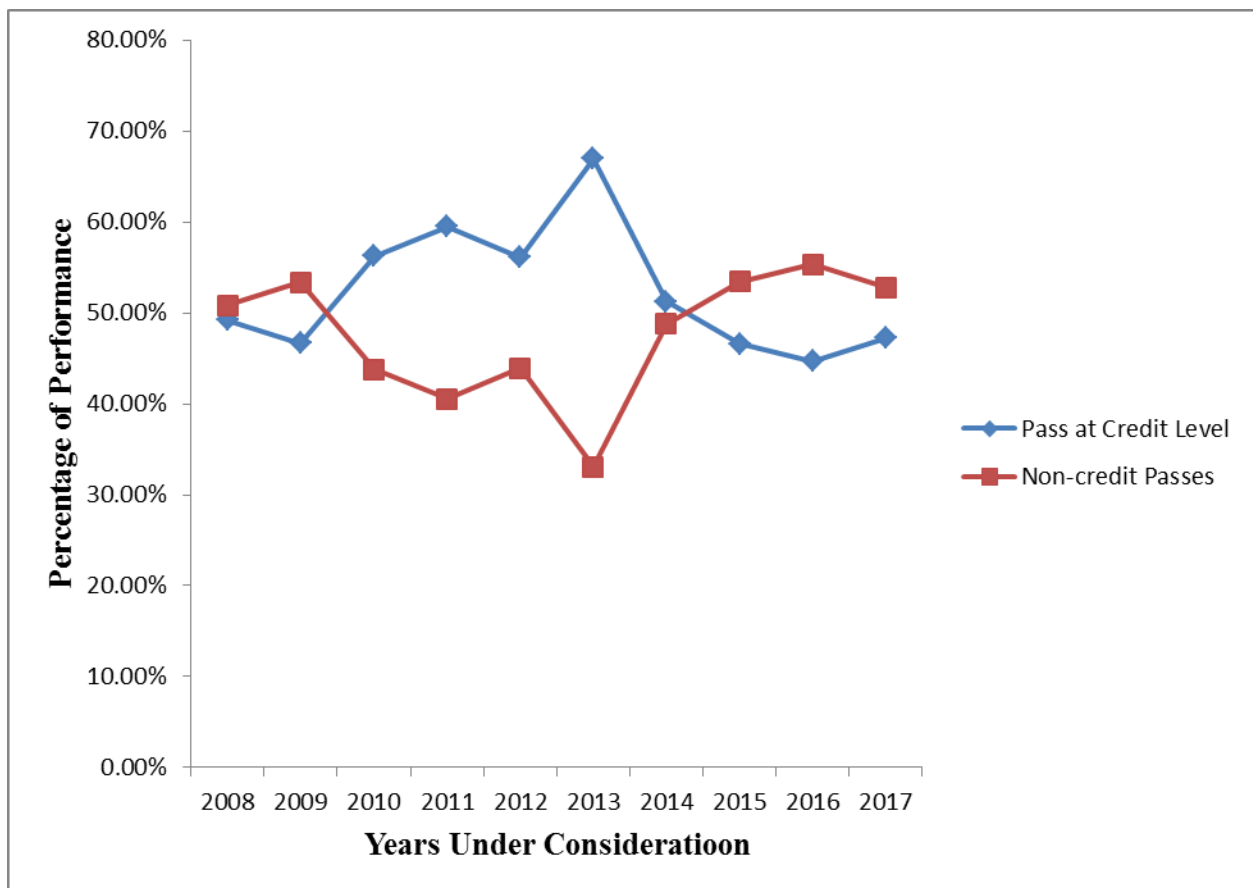


Figure 1: Line Graph of Students' Academic Performance in Economics (WASSCE 2008 – 2017)

Figure 1 presents line graph of the trends of performance in the result released by the West African Examinations Council (WAEC) from 2008 to 2017. Though, pass at credit level of 56.25%, 59.50%, 56.09%, 66.94%, 51.22% were recorded between the year 2010 to 2014, but except for the year 2013 in which 1,025,703 (66.94%) recorded at least pass at credit level, the results in Table 1 and Figure 1 show that the performance of students in Economics over the years have been fluctuating around average and below average. These, however, are not good

enough considering the fact that social sciences students need at least credit in the subject to gain admission into a university in Nigeria. The level and permanence of academic performance are affected by various conditions intrinsic to students and their external environment. Among the conditions or factors affecting academic performance, the place of non-cognitive variables cannot be left out.

To simultaneously look into how non-cognitive variables influence students' performance in Economics, there is need for sophisticated analytical tools like structural equation model. Most of the researches conducted in the past were on the effects, relationships or influence of different variables individually on students' academic performance. However, due to increasing awareness of the interactive nature of various variables, there is the need to investigate the composite and just not individual effects of these variables on academic performance. This has necessitated a gradual shift away from single variable studies to studies that look into the combined effect of related variables, hence, the need for structural equation modeling.

Structural Equation Models (SEM) is a statistical method used in testing hypotheses about the relationships among observed and latent (unobserved) variables. Structural equation models comprise both a measurement model for each latent variable and a structural model. SEM is used in several analyses such as causal modeling, causal analysis, simultaneous equation modeling, path analysis, analysis of covariance structure or confirmatory factor analysis. According to Werner (2010), SEM as a statistical technique subsumes elements of traditional multivariate models, such as regression analysis, factor analysis and simultaneous equation modeling; and thus is applicable in cases of latent variables that are not observed directly and in cases of intervening variables that have the role of dependent and independent variable at the

same time. Structural Equation Modeling (SEM), in its nature, uses varieties of models to depict relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model hypothesized by the researcher. Moreover, the method enables researchers to assess the quality of the latent variables and the strength of the relationships between them in one step (Schumacker & Lomax, 2010).

Studies carried out by Adedayo (2008) and Huang (2011) on how non-cognitive variables related with academic performance reported controversial results or findings. Also, there has not been any study conducted to model the influence of non-cognitive variables of academic mindset, academic perseverance, academic engagement and academic motivation on performance in Economics in South-west zone of Nigeria known to the researcher. When other studies were examined, it was observed that the studies examined the influence of non-cognitive variables on academic performance using correlation analysis. The indirect and direct effects or relations among the variables cannot be distinguished completely in the studies which data analyses were made only by relational analysis.

Statement of the Problem

Academic performance is one of the measures of the extent to which academic outfits, especially schools, have gone in meeting the expectations of their founders. It is so important that parents, teachers and the society at large are always worried and apprehensive about how it can be sustained and improved. When examination is conducted, students are expected to perform favourably well but it is disheartening to observe that students' performance in the subject, at the end of their secondary education, have not been encouraging. This is evident in the results presented in Table 1 in which the students' performance dwindled around and below

average. Poor academic performance as observed in the subject among secondary school students is not only frustrating to the students and parents, its effects are equally grave on the society in terms of dearth of man power in all spheres of the economy and politics (Adebule, 2004).

In spite of the efforts of all stakeholders to salvage the situation of poor performance in Economics, secondary school students' performances in Economics have remained unchanged. As a result, researchers have been forced to shift attention to identifying non-cognitive variables that may be responsible for the dwindling performance scores recorded in Economics by secondary school students. It was in relation to this that Affum-Osei, Eric, Barnie and Forkuoh (2014) investigated the relationship between academic mindset and academic performance of high school students and reported a significant correlation between academic mindset and academic performance.

In relation to structural equation model, Burnett (2002) examined relationships between teacher praise and feedback, and students' perception of the classroom environment using structural equation model. The instruments exploited were Teacher Feedback Scale (TFS) and My Classroom Scale (MCS). The result showed that Chi-square ($\chi^2=94$, $df=39$) and other fitness indices were within the acceptable ranges. The results also indicated negative teacher feedback and effort feedback were both related to students' relationships with their teachers, while ability feedback was associated with perceptions of the classroom environment. Praise was not related to classroom environment or teacher-student relationships. Similarly, Adegoke and Ajadi (2016) examined the relationships between teacher characteristics and teacher teaching skills and the concomitant effects of the relationships on senior secondary school students' achievement using

structural equation model and found a significant and positive relationship between teacher characteristics and students' achievement.

While the variables examined above were found to influence students' performance, none of these studies has been done on the combination of academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics using Structural Equation Modeling. Also, most of the studies were conducted outside Nigeria which might deterred the generalizability of their findings to Nigerian context due to cultural differences. These left gaps in the body of knowledge which this study was set out to fill. This study was, therefore, amply justified as a complementary study to the existing knowledge.

Purpose of the Study

The major purpose of this study was to examine structural equation model of selected non-cognitive variables and secondary school students' performance in Economics in South-west, Nigeria. Specifically, the study:

- a. examined the extent to which academic mindset, academic motivation, academic perseverance, academic engagement and performance in Economics fit into the hypothesized structural equation model;
- b. determined the more parsimonious causal model for providing explanation of students' performance in Economics given academic mindset, academic motivation, academic perseverance and academic engagement;
- c. examined the directions and the strengths of causation of students' performance in Economics by academic mindset, academic motivation, academic perseverance and academic engagement;

- d. determined the proportions of the total effects that are (i) direct and (ii) indirect;
- e. determined the causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics; and
- f. determined relative contribution of academic mindset, academic motivation, academic perseverance and academic engagement to the prediction of secondary school students' performance in Economics.

Research Questions

In line with the statement of the problem and purpose of the study, the following research questions were raised and answered in the course of the study.

- a. To what extent do academic mindset, academic motivation, academic perseverance, academic engagement and performance in Economics fit the hypothesized structural equation model?
- b. What is the more parsimonious causal model for providing explanation of students' performance in Economics given academic mindset, academic motivation, academic perseverance and academic engagement?
- c. What are the directions and the strengths of causation of students' performance in Economics by academic mindset, academic motivation, academic perseverance and academic engagement?
- d. What proportions of the total effects are (i) direct and (ii) indirect?
- e. To what extent do academic mindset, academic motivation, academic perseverance and academic engagement predict students' performance in Economics?

- f. What is the relative contribution of academic mindset, academic motivation, academic perseverance and academic engagement to the prediction of secondary school students' performance in Economics?

Research Hypotheses

The following null hypotheses were tested in the study.

- a. There is no significant causal relationship of academic mindset, academic motivation, academic perseverance and academic engagement with students' performance in Economics.
- b. There is no significant relative contribution of academic mindset, academic motivation, academic perseverance and academic engagement to the prediction of secondary school students' performance in Economics.

Scope of the Study

The study was designed to examine structural equation model of selected non-cognitive variables and secondary school students' performance in Economics in South-west, Nigeria. The study covered all senior secondary school students that offered Economics in South-west, Nigeria during the 2018/2019 academic session. Specifically, the study involved only selected SS 2 students that offered Economics in public and private secondary schools in South-west, Nigeria. Thus, 45 schools were selected from three states in South West. From each of the schools, 25 students of Economics were selected to make total of 1125 Economics students.

The non-cognitive variables considered in this study were academic mindset, academic perseverance, academic engagement and academic motivation. Economics achievement was also

considered as a dependent variable in the study. Academic engagement scale developed by Fredericks, Blumenfeld, Friedel and Paris (2005), academic mindset scale developed by Hanson (2017), academic motivation scale developed by Alvernimi and Lucidi (2008), and academic perseverance scale by Duckworth and Quin (2009) were adapted to measure the students' academic engagement, academic mindset, and academic motivation and academic perseverance respectively. In addition, past WAEC Economics objective test questions (2016 – 2018) reviewed based on SS I and II syllabus was adopted as an instrument for the purpose of measuring the students' academic performance. Multiple regression and path analysis were used to analyze the data obtained in the course of the study.

Operational Definition of Terms

The following terms were operationally defined in the context they were used in the study.

Academic Performance: students' score in Economics measured with economics performance test.

Selected Non-cognitive Variables: are academic engagement, academic mindset, academic motivation, and academic perseverance.

Academic engagement: students' active involvement in significant educational experiences and activities inside and outside school environment. It was measured using a 15-item academic engagement scale with a minimum score of 15 points and a maximum of 75 points.

Academic mindset: students' belief about self in relation to their academic activities both at home and in school. It was measured using a 15-item academic mindset scale with a minimum score of 15 points and a maximum of 60 points.

Academic perseverance: students' ability to continue engaging in academic activities in spite of challenges. It was measured using an 8-item academic perseverance scale with a minimum score of 8 points and a maximum of 40 points.

Academic Motivation: energetic force behind students' inspiration to learn and excel in their academic work. It was measured using a 15-item academic motivation scale with a minimum score of 15 points and a maximum of 60 points.

Latent variables: latent variables in this study are academic mindset, academic perseverance, academic engagement, learning strategies, academic motivation and academic achievement.

Observed variable: in this study, observed variables are the behaviours that represent the presence of latent variables in the students involved in the study. The behaviours were measured using questionnaires.

Structural equation: form of multiple regression, in which standardized regression coefficients are computed by stipulating the structure of hypothesized relationships between the latent variables and observed measures of non-cognitive variables considered in this study.

Significance of the Study

The outcome of this study could be of immense benefit to the government, teachers, school administrators, school counsellors, parents, students, educational researchers and other education stakeholders who may come across the result of the study as the researcher intends to publish the result of the study in a reputable professional educational journal through which those that have something to do with education may have access to it. The research findings could be of great help to the government and other stakeholders by revealing the relationship

among academic mindset, academic perseverance, academic engagement, academic motivation and academic achievement of students in economics thereby revealing selected non-cognitive variables to be harnessed for improved academic performance.

The research findings from this study could as well help school administrators to gain a clearer insight of the kind of non-cognitive variables that should be developed in their students in order to achieve better academic gain. This could be done by orienting the students on the consequences of their behaviour, both good and bad, on their grades. This could be an agenda to be discussed during the conduct of students' orientation or during a special forum for the students where people that specialize on such subjects may be invited as resource speakers. Such interventions might help the students better understand themselves.

The result of this study showed the relative contributions of academic mindset, academic perseverance, academic engagement and academic motivation. As such, it is hoped that the result of the study could be of great help to school counsellors by making them aware of the influence of academic mindset, academic perseverance, academic engagement and academic motivation on students' performance in Economics, and the need to help the students to develop and nurture good non-cognitive variables that will assist them academically.

The results of the study could also provide the students with valuable information that could be used as basis for improving their own learning skills and attitudes. Findings of the study could give the students a clearer understanding of what they are made off and how to leverage on their non-cognitive skill and traits in order to increase their academic performance. The outcome of this study could be of help to parents in obtaining a deeper understanding of how children's non-cognitive variables affect their academic achievement. Optimistically, such understanding

could enable them to recognize their role in the development of their children's soft skills (non-cognitive variables) that would ultimately lead to improvement in their children's academic performance.

Finally, the findings of this study could be of great importance to those that will want to further research in areas relating to non-cognitive variables. The result could be a reliable source of information for intending researchers as well as worthy contribution to complement the existing knowledge for this field of study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature was done under the following headings.

- a. Concept of Academic Performance in Economics
- b. Non-cognitive Variables and Students' Performance in Economics
- c. Academic Mindset and Students' Performance in Economics
- d. Academic Perseverance and Students' Performance in Economics
- e. Academic Engagement and Students' Performance in Economics
- f. Academic Motivation and Students' Performance in Economics
- g. Relationship between Academic Mindset, Perseverance, Engagement, Motivation and Students' Performance in Economics
- h. Appraisal of Reviewed Literature
- i. Theoretical Framework
- j. Structural Equation Model

Concept of Academic Performance in Economics

Academic performance is an index of students' academic attainment. It is a major goal which every individual seek to achieve because it determines educational success partially. Academic performance represents learning outcomes which is noticeable after undergoing a programme of instruction or in a school. It involves demonstration of the knowledge acquired having gone through a stipulated programme of instruction in academic environment. The demonstration of such knowledge could be in terms of teacher made test or external examination administered by examination bodies, which could be in form of written test or performance act. Academic performance is a multifaceted concept that comprises different domains of learning.

However, irrespective of the dimension, it should be clearly known that academic performance epitomizes intellectual endeavors and thus, more or less, mirror the intellectual ability of a person. It is the outcome of determination and hard work of students in their academic pursuit.

Academic performance according to Hanzen (2000) are the results obtained creditably or otherwise (pass or fail) by students at both internal and external examinations. Academic performance in this sense refers to the extent to which learners acquire the knowledge, information, skills, and proficiencies that the instructor seeks to teach or pass across within and outside the classroom situation. Abdullahi (2005) sees academic performance as what an individual student attained after a course of instruction mostly called test scores. This, then, means that academic performance is an end product of learning that describes students' academic status. Academic performance encompasses all disciplines and Economics is not an exception.

Economics is one of the school subjects that are commonly chosen as a course of study. As a subject, it is concerned with the study of scarce resources allocation to satisfy unlimited want, and it is in the light of this, that Yusuf (2014) viewed it as an integral part of human life. Economics occupies a pride of place in secondary school curriculum in Nigeria as its knowledge is required for the successful study in very many important professions (Muhammad, Bala & Ladu, 2016). The study of economics is not worthwhile for its own sake but for the benefits that the knowledge may bring to those that studied it and the society at large. Economics must be taught and learned in an environment that will facilitate meaningful learning for it to contribute effectively to the economic, social and political life of people. The level of knowledge of Economics a citizen acquires will determine their ability in solving economic problems and making of rational decisions concerning the society. Student's level of knowledge in Economics can be determined by his/her achievement in the subject.

Performance in economics is reflected by the results attained from internal examinations administered by the subject teachers and/or external examinations administered by external bodies. Student's academic performance in economics explains three things. The first thing being the ability to effectively see how facts fit together and form larger patterns of knowledge, secondly, being able to think in relation to facts, and thirdly, being able to communicate verbally or on paper (Dalziel & Peat, 2008). Schools' overall performance in Economics is a function of students' input and it is usually described based on the marks obtained by the individual students and the overall school performance in the subject.

Students' academic performance in Economics is discouraging in spite of its important roles in career choice and day-to-day application in decision-making. This means that students' academic performance in economics has not always been encouraging due to number of factors. Odumbe, Simatwa and Ayodo (2015) opined that student performance in economics is a function of student effort, attitudes, interest in the subject, motivation and intellectual capabilities. This suggests that students' academic performance in Economics is dependent of many factors under the umbrella of non-cognitive variables residents in the students.

A similar study done by Odumbe, Simatwa and Ayodo (2015) indicates that economics performance depends on the success of the teaching process which is a multidimensional construct measured through evaluation of the overall achievement by students. It also depends on motivation of the students as well as their academic engagement and mindset. Good students' performance is also related to having good organization skills such as good study habits and a proper place to work and good management. Previous research findings have also shown that students' academic performance in Economics is affected by factors like learning abilities, self-esteem, self-concept, age and gender (Hanzen, 2000; Hill, Bloom, Black & Lipsey, 2007;

Ochieng, Kiplagat & Nyongesa 2017). Some of the researchers explain the association between students' academic performance, economic circumstances and the risk of becoming a drop-out that proved to be positive (Adu, Ojelabi & Hammed, 2009). Previously, Chansarkar and Mishacloudis (2001) explained that age and distance from learning place are some of the factors that can affect students' economics performance.

Bearing in mind other factors which could influence students' performance in Economics, quantitative ability had been identified by Educational Testing Service to exert influence on students' economics learning outcomes. Quantitative ability is the ability to apply knowledge of mathematical concepts and principles, to make correct generalizations, and to compare mathematical expressions (Adu, Ojelabi & Hammed, 2009). Economics as a social science subject requires some level of quantitative or numerical ability because of the mathematical concepts and ideas embedded in its curriculum.

The issue of students' performance has been widely discussed by eminent scholars as exposed above, but this study is only interested in investigating how non-cognitive variables of academic mindset, academic perseverance, academic engagement and academic motivation influence secondary school students performance in Economics in South-west, Nigeria using structural equation models.

Non-cognitive Variables and Students' Performance in Economics

Non-cognitive variables can broadly be referred to as 'catch-all' to focus on variables that cannot be measured by cognitive based test scores. Non-cognitive variables are variables relating to mindset, motivation, perseverance, social skills, engagement, self-regulation, self-discipline, and learning strategies which matter in school performance (Jason, Cheri & Ginger, 2012). This

suggests that in addition to content knowledge and academic skills, individual student must develop sets of behaviours, skills, attitudes, and strategies that are crucial to academic performance. These variables work dependently or independently to predict students' outcome in school subjects and examination. Generally, several studies have been carried out to indicate significant influence of non-cognitive variables on students' academic performance, and by extension, performance in Economics. Academic mindset (Valentine, Dubois & Cooper, 2004; Yara, 2010; Farrington, et al., 2012), academic perseverance (Duckworth, Peterson, Matthews & Kelly, 2007; Seider, Gilbert, Novick & Gomez, 2013; Ivcevic & Brackett, 2014; De-Vera, Gavino & Portuga, 2015), academic engagement (Sirin & Sirin, 2005; Sbrocco, 2009; Wang & Holcombe, 2010), and academic motivation (Matuga, 2009; Kourosh, Shahrzad, Hamzeh & Hadi, 2011; Gupta & Mili, 2016). But none has been carried out with structural equation model and Economics performance of secondary school students.

It is evident from the studies above that non-cognitive variables are potent factors that may either impede or enhance students' academic performance. However, there is need to re-examine the variables, so as to determine the most potent among the school variables. It is on this note that the researcher sets to examine structural equation model of non-cognitive variables and performance in Economics of secondary school students in South-west, Nigeria. The non-cognitive variables as it relates to academic performance are examined one after the other in the study.

Academic Mindset and Students' Performance in Economics

One of the non-cognitive variables capable of dictating students' academic performance in Economics is academic mindset. Academic mindsets are the psycho-social attitudes or beliefs one has about oneself in relation to academic activities both at home and in school. Students'

attitudes and beliefs affect the quality, duration, and intensity of their engagement in academic behaviours (such as attending class, studying) and adopt learning strategies that, at the end, can powerfully affect students' learning and academic outcome either positively or negatively (Jason, Cheri & Ginger, 2012). It is student's view of self as learner and how she/he interacts with the learning environment for academic purposes.

Academic mindset according to Farrington, et al. (2012) is a four-fold concept. The first aspect of mindset involves a sense that one has a rightful place in a given academic environment and can fully claim membership in a classroom community. The second aspect of mindset has to do with the belief that one's academic ability can improve in response to one's efforts, rather than being fixed at a given level and outside of one's control. The third mindset relates to beliefs about abilities to succeed at a given task, while the fourth aspect of mindset involves a student's sense that the subject matter he or she is studying is interesting and holds value. The four-folds of academic mindset as described above shows that academic mindset comprises of belongingness, locus of control, academic self-efficacy, and value. These components are examined one after the other in the study.

Belongingness: One of the key academic mindset is whether students feel a sense of belonging in their school or academic field or not. Sense of belonging is the experience of personal involvement in a system or environment that makes one to feel as an integral part of that system or environment. It is to be accepted as a part or a member of a group or society (Hall, 2014); be it in the school or outside the school. Belonging is a strong and unavoidable feeling that exists in human nature; and the desire of which to belong or not to belong depends on choices of one's self, or the choices of others. Belonging is so important to the extent that without it, one cannot identify themselves as clearly, thus having difficulties communicating with and relating to their

surroundings. Having a sense of belonging is a common experience; a human need that calls for fulfillment just like the need for food and shelter (Karyn, 2014). Feeling that you belong is most important in seeing value in life and in coping with intensely painful emotions. A sense of belonging to a greater community improves your motivation, health and happiness (Hall, 2014).

To belong, sometimes, is not automatic and it is likely that one's desire to belong will not be met. When one's belongingness needs are not met, Wilkowski, Robinson & Troop-Gordon (2010) suggested self-regulation as the way out to fulfilling one's need to belong. Self-regulation is the process of regulating oneself, or changing one's behaviour, to manage short-term desires. Self-regulation can occur in many different ways and one of which is to use other individual's gaze(s) as a reference to understanding how attention should be divided. This effect is especially seen within individuals that have low levels of self-esteem on the belief that interpersonal acceptance is not met in individuals with low self-esteem (Wilkowski, et al., 2010); which prompts them to self-regulate by looking to others for guidance with regards to where to focus their attention. Self-regulation includes desire control which allows one to manage short-term desires and have a heightened sense of belongingness within a social group in which a person psychologically defines himself or herself as being a member of that specific group (Baumeister, Dewart, Ciarocco & Twenge, 2005).

Belonging in school setting is the belief of students that people within their school environment care about their learning, have an interest in them as individuals and have high academic expectations. It also includes students having positive teacher-student relationships and feeling safe at school. School belonging according to Libbey (2007) is when students feel close to, a part of, and happy at school; feel that teachers care about students and treat them fairly; get along with teachers and other students, and feel safe at school at all time. Human beings have an

innate psychological drive to belong to groups, and this drive is as compelling as the need for food. Being part of academic supportive network reduces stress, whereas being deprived of constant and supportive relationships within the school will have far-reaching negative consequences. This suggest that school belonging is crucial to students' academic growth and performance.

School belonging is further described by Moallem (2013) from school membership perspective to capture four main characteristics of attachment (personal investment in meeting the expectations of others, caring what others think, and positive reciprocal teacher and student relations); commitment (complying with a school's rules and demands); involvement (active participation in school activities and school tasks); belief (valuing and trusting the institution). This implies that feeling of belonging is beneficial and its benefits can be seen in the following academic-based outcomes as itemized by Osterman (2000) to include the development of basic psychological processes keyed to student success; academic attitudes and motives; social and personal attitudes; engagement and participation; and ability to increase academic success in particular programs (Grobeck, 2016).

The importance of belongingness cannot be jettison, in that it increases student retention, increases academic motivation, and increases academic success in particular programs (Grobeck, 2016). A sense of belonging leads to increased motivation, positive social and academic behaviour that will consequently lead to improved academic achievement (Wentzel, Barry & Caldwell, 2004); and prevents students from dropping out of school (Anderman, 2002). High sense of belonging or acceptance is capable of fostering healthy emotional patterns, such as, happiness, motivation, fulfillment, and serenity that will promote effective learning and good academic gain. Students who have high sense of school belonging are more likely to show higher

levels of interest in school activities and higher expectations of academic success. To belong means to be accepted, included or welcome. Being accepted, included, or welcomed leads to positive emotions, such as happiness, elation, contentment, and calm which are essential ingredients require by students for effective learning. On the contrary, being rejected, excluded, or ignored can often lead to intense negative feelings of anxiety, depression, grief jealousy, and loneliness (Osterman, 2000).

The influence of sense of belonging on academic performance has been studied by different scholars and their report is that school belongingness exerts influence on students' academic performance. For instance, Freeman, Anderman and Jensen (2007) found that high sense of belonging positively influences a student's motivation to excel academically and consequent academic performance. They stressed that that there is a positive correlation between students' sense of class belonging and their motivation and task value; when students feel a high sense of class level belonging, they experience an increased level of motivation to and that experience will lead to high academic performance. In the same direction, Grobecker (2016) found that sense of belonging has a positive influence on learning, motivation and confidence and a negative relationship with perceived stress.

In contrast to the studies that found significant relationship between sense of belonging and academic performance, Charlotte (2017) explored the relationship between involvement in a university sports team and students' sense of belonging and academic performance. Descriptive research was employed by the researcher and a total of 35 participants were investigated. The study group comprised 12 female undergraduate students completing a first year introductory course who were members of the Western All-Girl cheerleading team and the comparison group included 23 female undergraduate students enrolled in Psychology 1000 at Brescia University

College who were not members of a university sports team. Participants completed a total of three questionnaires which measured the variables of sense of belonging, academic precursors and academic performance. The results of a Pearson correlation indicated a non-significant relationship between students' academic performance and the following variables: sense of belonging-psychological experiences, sense of belonging-antecedents, academic procrastination and involvement in a sports team.

It can be seen from the above that the available studies on sense of belonging and academic performance are scanty and controversial. One thing to note, however, is that the kind of environment provided for the students will go a long way in determining whether students will develop belonging mindsets or not. Sense of belong alone cannot exhaustibly explain academic mindset. There is, therefore, need to consider locus of control.

Locus of control: Locus of control, according to Neill (2005), is an imperative aspect of human personality representing individual's perception of the underlying causes of event in his or her life or whether his or her destiny is influenced by himself or by external forces such as fate, god, or powerful others in the environment. He stressed further that a locus of control orientation implies a belief about the outcomes of one's actions as being contingent on what he or she does (internal orientation) or on events outside person's control (external control orientation). To Kirkpatrick, Stant, Downes and Gaither (2008), it is a construct that explain the degree to which individuals perceive reinforcing activities in their lives to be the result of their own actions or fate. It describes people in terms of how they characterize their successes and failures to internal or external factors as well as the extent to which they perceive themselves to be in control of the activities or events that affect their lives positively or negatively.

Locus of control, which can be internal or external, accounts for how people perceive and explain successes and failures in their lives. It is believed to be internal if the person involved attributes success to his or her own effort and abilities rather than fate. Such people will expect success and work towards its accomplishment. That is a person who expects to succeed will be more motivated and more likely to learn, seek out information, develop and follow good study habits, which might consequently lead to success (Kirkpatrick, Stant, Downes & Gaither, 2008). Such persons have the tendency to change strategies and persevere amidst difficulty until they succeed. Contrariwise, a person with an external locus of control will often attribute his or her success to luck, fate or other people, will be less likely to make the effort needed to learn and accomplish desired academic achievement.

It is psychologically believed to be healthy for one to see that he or she has influence over things thus leading credence to the general desire of internals to acquire what is regarded as personal control and self-determination among others (Neill, 2005). Just as internals can be psychologically healthy, the externals on the other hand can be psychologically unhealthy and unstable. An internal orientation usually needs to be grouped or surrounded by competence and opportunity with a view to successfully experience the sense of responsibility. Also, internals who lack competence efficacy and opportunity can become neurotic, anxious and depressed.

Internal locus of control is believed by Huang, Loft and Humphrey (2014) to be beneficial and it is in line with this that he identified the importance of internals to include the ability to take responsibility for one's actions (either good or bad), punctuality in all occasions, be more intrinsically propel to complete tasks to a higher standard, more dependable, self-motivated, being ambitious and, eventually successful in life. Though internals may experience a number of drawbacks which include being too ambitious, may be seen as being arrogant,

unreasonable perfectionist who often demand high level of efforts and accomplishment from others as they do from themselves. This may eventually leads internals to the point of ill-health or psychological instability. Contrariwise, externals are usually relaxed, humble and agreeable. They are seen as being whiny, tend to ascribe negative behaviour outside influence, exhibit lower level of self-motivation and are less likely to achieve the same levels of success as their counterparts that are internals.

The work of Huang, et al. (2014) characterized internals as (1) being more likely to work for achievement, tolerate delays in rewards and strategize for long term-term goals; (ii) raising their behavioural goals after experiencing success in a task; (iii) re-evaluating future performances and lowering expectation of success after failing in a task; (iv) being better able to resist force; (v) being more likely to learn about their surrounding and past experiences; (vi) experiencing more anxiety and guilt with their failures; (vii) using more repression to forget about their disappointment; (viii) being better at tolerating ambiguous situations; (ix) being less willing to take risks; (x) making better mental recovery in the long-term adjustment to physical ability; and (xi) preferring games that are based on skills rather than chance or luck.

Some scholars such as Mamlin, Haris and Case (2001) and Moore (2006) had attributed internal locus of control to time, age and achievement believing that as people get older, they tend to be more internal and people of high caliber in organizational structures tend to be more internal. Also, results of researches showed that in adolescent boys, locus of control becomes more internal from senior high school to one year post-high school and that the greater change in locus of control was found to occur between the age of 13 and 15 in male (Kelly, 2002). Children seem to gain increasing knowledge about event that controlled their lives through elementary

school until junior high school where there seems to be a psychological setback as regards the comprehension of reasons for things happening to them in their overall environment.

Avalanche of research had been done on locus of control and the way in which it intertwined with some other constructs within the student population (Daum & Wiebe, 2003). It has also been researched to explain behaviours across a wide variety of disciplines and environments like education, sports and education. The variable of locus of control has also been linked to many positive variables that are necessary to development. The variables include school retention rate and achievement, social maturity (Butler-Sweeney, 2007); as well as higher grades in standardized achievement test.

In the academic milieu, students have two possible outcomes which are success and failure, 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). Those that attribute their academic outcomes to factors other than themselves are said to have external locus of control while those that attribute their learning outcomes to factors under their own control and see it as being dependent on their behaviour or activities are said to have internal locus of control. Such people have a high level of confidence in their academic ability, resilience, security, and a positive outlook, and feel no real need for external approval (Santrock, 2003); before they can succeed academically. This makes them to always put more effort into improving their skills to succeed in future academic tasks. The internals engage in difficult tasks and do not give up easily when given negative feedback.

Quite numbers of studies have been conducted to reveal the influence of locus of control on students' academic performance both locally and internationally. For instance, Dollinger (2000) studied the effect of locus of control on students' acquisition of incidental learning and its application success. The researcher sampled 535 students of Personality Psychology at the South Illinois University, Carbondale. The results revealed that internals outperformed externals in knowledge acquisition which are considered to be relevant to academic development and achievement gain. His findings corroborates that of Goyal (2000) who studied the relationship between locus of control and academic performance and reported a significant positive relationship between internal locus of control and academic performance.

To further reveal the influence of locus of control on academic performance, Tella, Tella and Adeniyi (2009) studied locus of control, interest in schooling and self-efficacy as predictors of Junior Secondary School students' academic performance using 500 Junior Secondary School Three (JS 3) students aged between 12 and 15 years and adopting an ex-post facto research design. Data were generated through locus of control scale, interest in schooling scale, self-efficacy scale in addition to the academic performance scores obtained from the respondents' academic records of their previous promotion examination. The researchers employed Multiple Regression analysis, Analysis of Variance (ANOVA), and t-test statistics in carrying out their data analysis. The results of the study revealed that locus of control, interest in schooling and self-efficacy compositely and relatively contributed significantly to academic performance among selected Junior Secondary School students. Consequent on the findings, it was recommended that students' interest must be continuously stimulated; they must be made to imbibe the act of time management; and that their teachers must take cognizance of the three variables in the study with the aim of improving same in their students.

The result above was corroborated by the work of Onyekuru and Ibegbunam (2014) who studied the relationships among test anxiety, locus of control and students' academic performance of Curriculum Studies and Educational Technology students, University of Port Harcourt, Nigeria. From a population of 498 students registered in the departments for 2009/2010 and 2010/2011 academic sessions, the researchers took a sample of 364 students who volunteers to participate in the study. Four research questions were raised and three hypotheses were formulated to guide the study. College Students' Test Anxiety Scale (CSTAS) and College Students' Locus of Control Scale (CSLCS) validated by experts in relevant fields were used as data collection instruments. Prior to final administration, the instruments were validated and reliability coefficients of 0.73 and 0.78 for CSTAS and CSLCS were obtained respectively through test-retest method and Pearson Product Moment Correlation technique. The data generated from these instruments were analyzed using Pearson Product Moment Correlation. The study revealed a significant negative relationship between test anxiety and students' academic performance ($r = -0.22$, $p < 0.05$); a significant positive relationship internal locus of control and students' academic performance ($r = 0.191$, $p < 0.05$); and an insignificant negative relationship between external locus of control and students' academic performance. It was, therefore, recommended that students should start preparing for tests or examinations from the day school resumes rather than procrastinating studies until a test is at hand so as to avoid cramming and the test anxiety. The students must realize that hard work is a key to success and that success is determined by one's attitude and effort and not a matter of luck.

Similarly, Ahman-Mahmud (2016) explored the relationship among self-concept, locus of control and school motivation in relation to academic performance among Secondary School Students in Kaduna State, with the aim of identifying some of the factors contributing to low

performance of students so as to generate empirical evidence necessary to inform policy and practice. The researcher adopted descriptive survey research design and 1,227 Secondary School Students (SS1) were proportionally sampled from public schools in Kaduna State for the study. Standardized questionnaires were used to measure the key concepts in the first stage while semi-structured interviews were then used in the second stage to probe the factors influencing students' performance. Descriptive statistics and bivariate statistics were used to analyze the data collected in the course of the study. The results indicated high levels of relationships between academic performance and the conceptual variables. The study, therefore, recommended that education practitioners and policy makers develop intervention programmes in order to enhance students' adequate and positive perceptions of their academic abilities; and that the government needed to improve school infrastructure to facilitate effective teaching and learning, and enhance the students' personality attributes.

Locus of control, as a key component of academic mindset, is therefore capable of influencing students' academic performance because it determines the level of commitment students invest in their academic activities. Academic mindset cannot be entirely discussed using only locus of control. It has academic self-efficacy component.

Self-efficacy: Self-efficacy is the strength of one's belief in one's own ability to complete tasks and reach goals not minding what it will take. It is the belief in one's strength or ability to organize and execute the courses of action required to manage prospective situations. Academic self-efficacy is students' belief in their ability to engage the necessary academic behaviours to produce a certain learning outcome. This is why it was defined by Adeyemo and Agokei (2010) as belief about one's ability to perform successfully in a given course. The concept is an imperative factor affecting students' choices of their learning task and behaviours, as well as

their mentality and emotions on learning either in the school or at home. It is worth knowing that self-efficacy is less concerned with the skills and abilities individuals possess but what individuals believe they can do with whatever skills and abilities they may possess. It is a concept serving a self-regulatory function by providing individuals with the capability to influence their own cognitive processes and actions and thus alter their environments to their own favour.

In the opinion of Bandura (2004), self-efficacy beliefs provide the foundation for human motivation, well-being, personal growth and accomplishment. This is on the notion that unless a person believe that his actions can produce the outcomes he or she deserve, he or she has little incentive to act or to persevere in the face of difficulties. As important as the concept is, it touches virtually, every aspect of people's lives - whether they think productively, self-debilitating, pessimistically or optimistically, how well they motivate themselves, their vulnerability to stress and depression and the life choices they make.

Self-efficacy, which can be high or low, determines one's personal judgment of how well he or she can execute courses of action required to deal with prospective situations. Expectations of self-efficacy determine whether an individual will be able to exhibit coping behaviour and how long the effort will be sustained in the face of obstacles (Luszczynska & Schwarzer, 2005). Individuals who have high self-efficacy will exert sufficient effort that, if well executed, leads to successful outcomes, whereas those with low self-efficacy are likely to cease effort early and fail later in the endeavor. This is in relation to the Bandura (2004) that high self-efficacy can affect one's motivation in both positive and negative ways. In general, people with high self-efficacy are more likely to make efforts to complete a task, and to persist longer in those efforts, than

those with low self-efficacy. The stronger the self-efficacy expectations, the more active the efforts invested in the event(s).

Creating and strengthening self-beliefs of efficacy is through the mediated experiences provided by social models. Seeing people similar to oneself succeed by sustained effort raises observers' beliefs that they too possess the capabilities master comparable activities to succeed (Pajares, 2002). When we see someone succeeding, our own self-efficacy increases; where we see people failing, our self-efficacy decreases. This means observing others fail despite high effort lowers observers' judgments of their own efficacy and undermines their efforts (Luszczynska & Schwarzer, 2005). The impact of modeling on perceived self-efficacy is strongly influenced by perceived similarity to the models. This strategy is particularly useful for people who are particularly unsure of themselves.

In relation to students and learning outcome, academic self-efficacy is an imperative part of academic preparation and academic performance. It is a strong factor capable of dictating academic performance; it influence the choices learners make and the courses of action they pursue in order to attain their educational goals (Pajares, 2002). Self-efficacy beliefs should be considered as relevant for understanding academic outcomes because self - efficacy leads to specific behaviours and motivations that can encourage or discourage effective academic preparation and consequently academic performance.

Student's ability to perform favourably in his or her academic endeavor will be determined by his or her academic self-efficacy which can either be high or low. A student characterized with high self-efficacy will brace up and meet the academic rigor and excels in school activities because he or she perceive himself or herself as being capable of doing well in

school engagements. However, a student noted for having low academic self-efficacy will prevent good academic performance because of the tendency to see himself or herself as being unable to cope with the academic challenge. This means that students' thoughtful feelings will either aid or hinder their academic progress. It is in relation to this that Koura and Al-Hebaishi (2014) stressed that high or low self-efficacy is all about thoughts that students hold about themselves which directly or indirectly affects their academic achievement. Students with higher level of self-efficacy are able to determine their learning objectives as compared to those with low self-efficacy (Hendriati, Surya & Muwaga, 2016). Several studies like the study conducted by Chemers, Hu and Garcia (2001), Green, Miller, Crowson, Duke and Akey (2004) and Sharma and Silbereisen (2007) have, however, revealed that self-efficacy can be used to predict academic achievement.

In order to find out more about the influence of self-efficacy on academic performance, Muraina and Oyadeyi (2014) investigated academic efficacy and self-esteem as predictors of academic performance among school going adolescents in Itesiwaju Local Government Area of Oyo State, Nigeria. The researchers adopted descriptive research design and three hundred (300) respondents were randomly selected from Itesiwaju Local Government Area of Oyo State, Nigeria. Standardized scales on academic efficacy, self-esteem and student achievement with strong reliability coefficient of .89 were used in collecting data for the study and the data obtained were analyzed using the Pearson Product Moment Correlation (PPMC) statistical analysis with the aid of Statistical Package for the Social Science (SPSS).

Two research hypotheses were formulated and tested in the study and the result showed a significant relationship between academic efficacy and students' academic performance; and a significant relationship between self-esteem and students' academic performance. The results

corroborated that of Ogunmakin and Akomolafe (2013) who examined the influence of some psychological factors on students' academic performance and found that academic self-efficacy significantly predicted academic performance. Based on the findings, the researchers advocated the need for the parents to teach and monitor the students how to improve on their self-esteem and academic efficacy in the society in order to reduce the level of poor academic performance of students in the society.

In the same vein, Sinan and Jongur (2016) conducted a study on the relationship between students' academic self- efficacy and performance in mathematics among boys and girls in secondary schools in Yola South Local Government Area of Adamawa State, Nigeria. Descriptive research design was employed and the population of the study comprised all 21 public secondary school students in Yola South. From the sampled schools, the researchers selected 380 SS 3 students using stratified, purposive and random sampling techniques. The questionnaire used for the study was piloted and found to have a Cronbach's Alpha Coefficient of 0.81 which makes the instrument to be considered reliable for use. In addition to the questionnaire, a modified West African Senior School Examination Certificate (WASSCE) of Secondary Education Mathematics examination was administered to measure the respondents' performance in Mathematics. The hypotheses formulated in the course of the study were analysed using independent sample test and Pearson product Moment Correlation Coefficient. The study revealed a strong positive relation between self-efficacy and performance in Mathematics among boys and girls. Consequent on the findings, it was recommended that efforts should be made to improve the academic self-efficacy in Mathematics for the students.

However, contrary reports had been given by few scholars on the influence of academic self-efficacy on academic performance. Balami (2015) examined the relationship between self-

efficacy and academic performance of National Teachers Institute (NTI) Nigeria Certificate in Education (Distance Learners Programme) in Adamawa State, Nigeria. The study tested one hypothesis: There is no significant relationship between self-efficacy belief and academic performance of learners. All NCE learners of Adamawa State NTI distance learning centres for 2011/2012 academic session with a total of seven hundred and sixty eight (768) students served as the population while 636 distance learners who returned their questionnaire formed the sample for the study. Two types of instruments were used for data collection in this study. Learners Self-Efficacy Questionnaire (LSQ) and Achievement Data Format (ACDF) were used for data collection. The ACDF contains Grade Points of each candidate for the end of semester examinations. Pearson Product Moment Correlation was used for testing the hypothesis. The study revealed that there was no significant relationship between learners' self-efficacy and academic performance. The differences in the results of Balami (2015) might be due to variation in the characteristics of the respondents involved in the study and sample size.

Similarly, using a descriptive research design, Baanu, Oyelekan and Olorundare (2016) explored the relationship between chemistry students' self-efficacy and their academic performance in the senior secondary schools in North-central, Nigeria. The subjects of the study were one thousand, one hundred and fifty (1150) randomly selected senior secondary school III chemistry students selected from Kogi, Kwara and Niger States of Nigeria. The data collected in the study were analyzed using Pearson Product Moment Correlation. Findings of their study revealed no-significant relationship between self-efficacy and the academic achievement of the chemistry students. The researchers concluded that students' self-efficacy needs to be complemented with a host of other factors to achieve high academic achievement. It was, therefore, recommended that attention be paid to other factors necessary for better students'

academic performance to complement students' high self-efficacy, so that a combination of these factors could result in high academic performance.

What was observed from the review undertaken on academic self-efficacy and academic performance was that the available evidences are conflicting. Hence, there is need to further research into the variables because the place of self-efficacy in students' academic performance cannot be overemphasized. As important as self-efficacy to students' learning outcome, it cannot be entirely addressed without reference to value which is the fourth component of academic mindset.

Values: The last component of academic mindset is value which is characterized by student's sense that the subject matter he or she is studying is interesting and holds value. Value refers to one's desire, preference, or wanting for certain goals. In the academic world, value is defined as student's desire, preference, or wanting for certain academic goals and outcomes (Petra, 2011). Values are an important factor in the choices students make; it will provide incentives to approach tasks that are positively valued and avoid tasks that are negatively valued (Eccles, 2005). Values place positive or negative valences on goals that can affect the magnitude and direction of behaviour toward diverse goals. This implies that it is value that will determine whether students will invest their time in academic related activities or otherwise.

Academic values can best be explained in terms of four different dimensions which are attainment value, intrinsic value, utility value and cost. Academic tasks are value because they provide a means for confirming aspects of the self (attainment), are inherently interesting (intrinsic value) or are means to a desired end (utility value). The cost aspect of value means the negative features of doing a task relative to other tasks (opportunity cost). It is in relation to this

that Eccles (2005) stressed that values influence the placement of tasks or goals in a hierarchy, and determines the placement of two or more different goals operating simultaneously. This implies that tasks with the lower costs implication and higher attainment, intrinsic, and utility values will judged more important be given high consideration than tasks with higher costs and lower attainment, intrinsic, and utility values. The implication of this is that students will engage in academic tasks only if the benefits in terms of attainment, intrinsic, and utility outweigh the costs of engaging in other activities. The fact that students have different goals operating simultaneously suggests that academic goals must find their important place within the goal hierarchy and interact with values associated with other goals in this hierarchy.

Existing studies on influence of value on students' academic performance are scanty but the little available ones are in favour of value in relation to academic achievement. For instance, Petra (2011) explored impact of values and learning approaches on student performance in international university in Germany. The study followed a cohort of undergraduate students from the first week of their studies to their graduation. The researcher purposively collected data from 177 students who participated in the longitudinal study. Participants completed three questionnaires: the Portrait Value Questionnaire, the Study Process Questionnaire, and the Student Background Questionnaire. Structural Equation Modeling was used to examine how personal values influenced students' learning approaches and how these, in turn, were related to students' performance. Result of the study showed a significant relationship between value and academic performance.

It is worth knowing that it is the combination of value, belongingness, self-efficacy and locus of control that make up academic mindset. Student's academic mindset can either be positive or negative depending on his/her beliefs or attitude about self in relation to school and

learning. Positive academic mindsets, in the opinion of Farrington, et al. (2012), will motivate students to persist at school work (i.e., they give rise to academic perseverance); which in turn will manifest itself through better academic behaviours (engagement) and consequently leads to improved academic achievement. Little wonder that Adeyemo and Agokei (2010) described the positive aspect of the construct as belief about one's ability to perform successfully in a given course. On the other hand, negative academic mindset will cause the students to relent and believe they cannot make headway in their academic race.

Academic mindset can be seen as something that can grow or be fixed depending on the belief system of the person involved. A fixed mindset describes individuals with fixed beliefs regarding their level of intelligence and ability, which they believe remain stable and there is nothing they can do to change it. A growth mindset on the other hand describes individuals who view their intelligence and ability simply as a basis for development and believe that challenges, including failure, are opportunities to develop their capacity for success through effort and practice (Dweck, 2010). Academic mindset which is described as personal judgment of one's capabilities to organize and execute course of action to attain designated types of educational outcomes (academic achievement) is capable of determining students' level of achievement in their academic race; because it is an imperative part of preparation and performance.

To re-affirm the influence of academic mindset on academic performance, Affum-Osei, Eric, Barnie and Forkuoh (2014) investigated the relationship between academic mindset and academic performance of high school students. Descriptive research design was employed in executing the study. A total of 120 students randomly selected from four high schools participated in the study. Questionnaire was administered on the sample to assess their academic mindset data. Percentages, and Pearson Product Moment Correlation Co-efficient were used to

analyse the data. The results showed a significant correlation between academic mindset and academic performance. Based on the result, suggestions and recommendations were made to stakeholders in education in helping students to enhance their academic mindset to improve on their academic performance.

Gboyega and Abdullahi (2015) determined students' performance in English discourse writing in Ibadan, Oyo State using academic self-efficacy (an aspect of academic mindset) and gender. Descriptive survey design was adopted by the researcher for the study. Also, the researcher employed purposive sampling technique in selecting 40 male and female high-achieving students. Three validated instruments which are English Language Essay Screening Test ($r = 0.82$), English Language Essay Achievement Test ($r = 0.76$) and Adapted Academic Self-efficacy Scale ($r = 0.76$) were utilized in the study. The research questions asked in the study were answered using Pearson Product Moment Correlation and Multiple Regression Analysis. The results of the study revealed that academic self-efficacy (an aspect of academic mindset) had a positive relationship with performance in English discourse writing while gender had no significant correlation with the dependent variable. On the basis of the findings, it was recommended that educational guidance services should be made available and mandatory in schools as educational stakeholders should equally focus on the affective construct (mindset) of high-achieving students. Not only academic mindset predicts high academic achievement, it has to combine with the variable of perseverance.

Academic Perseverance and Students' Performance in Economics

Perseverance is the ability to stick with the same point of view as previous after negative influences, resistance, or discouragement (in spite of obstacles). According to Okunbanjo (2014), perseverance is the ability of an individual to stand in the presence of constraints. It is an attempt

of an individual to press further in life affairs in spite of difficulties. Perseverance, which is sometimes used synonymously with grit and tenacity, also involves dealing with hurdles rationally rather than complaining (to efficiently move further in accomplishing a task instead of being irritated about the task). It is on this basis that Packard (2007) described perseverance as a stable and continuous performance of one's work or duties even when it is painful or risky. This could best be understood in terms of individuals' motivation, deterrents, personal dispositions, attitude, beliefs and social economic status.

Perseverance is about the way we stick at things even when they are difficult; it is one of the most useful but neglected learning behaviours. It is perseverance that will enable one to quickly re-establish his concentration if he get stuck or frustrated due to challenges encountered in the way of goal attainment. The quality of perseverance is essential if one is going to get to the bottom of something that doesn't turn out as quickly or easily as you had thought or hoped. It is in line with this that a more comprehensive account of the construct was given by Abiola and Udofia (2011) in terms of inner strength, competence, optimism, flexibility, and the ability to cope effectively when faced with adversity, minimizing the impact of risk factors, such as stressful life events, and enhancing the protective factors, such as optimism, social support, and active coping that increase people's ability to deal with life's challenges. This means that perseverance is an asset or strength, a desirable and advantageous quality, characteristic or process that is likely to impact positively on aspects of an individual's performance, achievement, health, and wellbeing.

In the academic milieu, perseverance means the degree to which a student could continue engaging in academic activities in spite of difficulties or obstacles within or outside the academic

environment. It is in line with the above, that Duckworth, et al. (2007) sees perseverance as a concept that defines ones' passion for long-term goals and the desire to work strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress. This suggest that perseveres person will see a goal through to the end even though it may take years and entail experiencing disappointments and setbacks along the line. This is more reason the concept is regarded as an important contributor to individual success in a variety of settings, as well as throughout an individual's life span (Goodwin & Miller, 2013; Lora & Jim, 2017). Perseverance is a positive personality characteristic that enhance individuals' adaptation to situations or events within the context of serious adversity.

Academic perseverance entails setting future goals and the practice of self-control and determination, leading a student to engage in completing assignments regardless of the perceived difficulty (Duckworth, Gendler, & Gross, 2014). This means that the student will have to stay on the task until it is completed. This practice of on-task behaviour is considered an integral part of developing one's academic perseverance. The display of self- control to stay on task means students have to learn to overcome academic obstacles in order to develop the skills needed to learn higher level of knowledge and process as well as challenge themselves further in their lives.

In line with the explanations above, perseverance is seen by Sylvan Research Institute (2013) as involving metacognitive learning strategies related to goal-setting and self-regulation of effort. Metacognitive strategies of learning influence information-processing indirectly by regulating and supporting the cognitive information processing approaches (Hawley & Harris, 2006). Students may devote effort to a task not because it brings immediate gratification but

because they believe they eventually can succeed and that, with effort, their competence can grow.

Perseverance performs certain functions in students' life. It is capable of giving student edge over others in academic environment. In today's academic world, competition is universal; all students are facing a higher level of pressure than ever before. Pressure comes from various sources: the burden to do well in class, and undesirable interactions with peers and teachers (Duckworth, et al., 2007). Students' success in school requires effective handling of stressful situations and frustrations which can only be possible through perseverance. Students' ability to persevere by using challenges and setbacks as stepping-stones for improvement separates them from those who do not by means of good academic achievement. Whether students persist or give up in challenging situations can cumulatively make a material difference (difficult or easy) to their learning (Skinner & Pitzer, 2012). Failure to persevere might cause problems related to learning and consequently poor academic achievement

Current researches, like Duckworth, Peterson, Matthews and Kelly, 2007; Ivcevic and Brackett, 2014; De-Vera, Gavino and Portuga, 2015, from different quarters posit that perseverance is related to better performance and greater success not only in academia but also in the real-world setting. It is stressed by Hogan and Wong (2013) that students who perseveres tend to work harder and longer and are more inclined to engage in voluntary practices so as to enhance academic performance or success. This is on the notion that academic achievements are limited by innate factors and cognitive skills, and therefore require deliberate or voluntary efforts on the part of the student(s) to change or improve particular characteristics of achievement (Ericsson, 2006). Students who persevere are more persistent and diligent, not discouraged by setbacks or failure, more focused on a homework or assignment, and more likely to complete

academic tasks. In contrast, the less students persevere the less they persist, they are easily distracted by new ideas or academic project, unable to set long-term goals, and lack motivation or focus for long-term achievement.

Regardless this, conflicting results have emerged on the influence of academic perseverance on students' academic achievement. For instance, Mattern (2005) found in his study that students who have perseverance skills and have capability to achieve their goals are able to get more chances and face academic challenges; which will consequently lead to good academic achievement. They have best learning skills, positive attitude towards their academic skills, have higher passion of love and explore new ideas. Also, Horn (2006) find that students who get higher marks and position in their academic setting are more persistent in comparison of those who are less hard working student who cannot endure extra minute for academic purposes. Similarly, in a study conducted to predict academic achievement of middle school students by perseverance, Seider, Gilbert and Gomez (2013) found that students' academic perseverance was a highly significant predictor of their cumulative grade point average. Students with a low potential (i.e. cognitive abilities) but high perseverance do better than their peers with a high potential but low perseverance (Arto, 2017).

In order to further reveal the influence of perseverance on academic achievement, Duckworth, et al. (2007) studied 139 undergraduate psychology students of Ivy League University in the United States. The researchers adopted descriptive research design and randomly sampled the respondents involved in the study. Questionnaire was used in measuring the respondents' perseverance level while the students' GPA was obtained from their academic records. The result was analysed using Pearson Product Moment Correlation. The authors found that perseverance tie students got better results than less perseverance tie students, that is,

perseverance scores were associated with high GPA. On the basis of the finding, it was recommended that students should be taught how to persist for the sake of success.

Similarly, Bazelais, Lemay and Doleck (2016) investigated how perseverance affects student academic performance in first-year college physics students in the context of a Quebec College. Descriptive research design was employed in executing the research work. Those who participated in the study were 156 first year, second semester pre-university science students (53% male, 47% female) who volunteered to participate in the study. Data were collected with the use of questionnaire in conjunction with the students' grade point average. Two hierarchical linear regressions were performed using scores on a 12-item 5- point Likert scale survey measure of perseverance on student cumulative GPA and on final exam mark for a gateway physics course, controlling for gender and high school GPA. Prior academic performance was found to be a significant predictor of college performance, as well as success in the gateway physics course. Perseverance was not found to be a significant predictor of student academic achievement or course success. This, however, makes research on the influence of academic perseverance on academic achievement inconclusive. This is not the only variable of interest to the research. The variable of academic engagement is also examined.

Academic Engagement and Students' Performance in Economics

Academic engagement is a set of behaviours that signal serious psychological investment students devoted to educational activities inside and outside of classroom setting. It is a composite term that explains students' various patterns in motivation, cognition, and behaviour towards academic works (Baron & Corbin, 2012; Phan & Ngu, 2014). In the opinion of Akin (2009), student academic engagement is the extent to which students are actively involved in significant educational experiences and activities. The definition above factored out two things

that are highly salient to student engagement, which are active involvement, and significant educational experiences (Errey & Wood, 2011). In its simple form, academic engagement is a construct that describes behaviours usually related with being a good student. These according to Farrington et al. (2012) include frequently attending class, arriving ready to work (with necessary learning materials), paying attention, taking part in instructional activities and class discussions, and devoting out-of-school time to studying and completing homework.

Students' academic engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education. The concept is predicated on the belief that learning improves when students are inquisitive, interested, or inspired, and that learning tends to suffer when students are bored, dispassionate, disaffected, or otherwise disengaged. It is a form of interaction students have with the social and physical environment that is characterized by activity, goal-orientation, flexibility, constructiveness, focus and perseverance.

Engagement can be a precondition or consequence of motivation. Academic engagement of students as a behaviour can be conditioned by internal and/or external motives which will reflect through four forms of regulation (Levesque, Zuehlke, Stanek & Ryan, 2004); with the first being external regulation. External regulation is a form of autonomic, extrinsically motivated behaviour, or controlled regulation which includes behaviour that aims at meeting external demands, to avoid penalties or ensure the desired rewards. The second form of regulation is introjective regulation; a relatively controlled form of regulation of motivation in which behaviour is intended to avoid the feeling of shame or anxiety or to maintain the sense of self-respect and personal value (Levesque, Zuehlke, Stanek & Ryan, 2004). Identified regulation,

which is the third aspect of regulation, represents a more autonomous and self-determined form of extrinsic motivation in which when a person recognizes the importance of certain behaviour identified with certain rules and accepts them as his/her own. In the educational context, this style of regulation of motivation is considered to be an indicator of school satisfaction in accepting voluntary targets institutions and the role of students. The fourth regulator is intrinsic motivation which is a natural motivational tendency to act in accordance with our own internal interests and thus develop and enhance knowledge and skills.

Student engagement in the teaching process depends on the situation and the context in which learning occurs. Through interaction in the school environment, students realize what ideals, values, goals, requirements and rules of conduct the school culture promotes and emphasizes. Fredricks and McColskey (2012) explained that student engagement cannot be separated from their environment. The students naturally tend to pursue intimacy with others in the class to have a feeling that they are effective and successful, and that their actions in class are the result of their own choice and volition. This is why it is very important that the academic climate is characterized by fostering cooperation, positive energy, and tasks that are authentic, collaborative, and challenging in order to promote effective school engagement (Marina & Dragana, 2016).

In their study, McMahon and Zyngier (2009) regards student engagement as an important social signal that causes the reciprocal reaction of support from teachers. The teacher conveyed different kinds of social messages connected with his/her teaching style in order to influence students' academic and social behaviour. These messages were sent by the teacher through a variety of verbal and non-verbal signs, which sometimes meant encouraging the students that they should continue with the way they started working on a specific task, sometimes they mean

a response to the questions or students' behaviour in general (Marina & Dragana, 2016). Accordingly, academic engagement may be encouraged or discouraged. It could be encouraged by teachers who are caring and that encourage participatory and democratic climate during teaching- learning process. For this to happen, teachers must respect the personality of students and the expectations of teachers are also very important.

From the above, academic engagement can be said to be a multidimensional construct that is diverse in definition and coverage, and encompasses different aspects of students' life. It is a construct that encompasses components like behavioural, emotional and cognitive characteristics of students (Fredricks, Blumenfeld & Paris, 2004). The work of Fredricks, Blumenfeld and Paris combines a multitude of ideas and definitions revolving engagement and condensed the term into three main categories as behavioural, emotional, and cognitive.

Academic engagement occupies a pride place in consideration of non-cognitive variables because virtually all the ingredients that go into students' academic achievement are expressed through their academic engagement or behaviours. There exist abundance of empirical studies that explored the relationship between academic engagement and academic achievement of students of all ages. Some of the researchers have dependably found a positive relationship between academic engagement and students' academic achievement (Sirin & Sirin, 2004; Sbrocco, 2009; Wang & Holcombe, 2010). The scholars reported that students with high academic engagement obtained higher academic achievement grades as against their counterpart with low level of academic engagement. This suggests that for any student to gain enormously from school academic activities, such student should not be academically idle, but be academically involved. The study conducted by Brown (2009) reported engagement as a significant predictor of student success (achievement). Similarly, Wang and Holcombe (2010)

found a positive correlation between cognitive engagement and students' academic achievement. Students' emotional, behavioural and cognitive engagement in school and classroom activities are of critical importance to their academic growth. Being engaged will help students achieve higher levels of understanding which will consequently lead to increased academic achievement.

Still on the influence of academic engagement on academic achievement, Pearce (2014) studied the relationship between the level of academic engagement and the level of achievement in Central Vancouver Island high school. The researcher employed action research design in executing the study. Simple random sample method was employed to select 89 students for the study. Three types of instrument were used to collect data on the level of academic engagement. One of the measures based on teacher/researcher observations of the participants' level of participation in class activities. The instrument measure was assignment completion based on such criteria as neatness, thoroughness and timeliness. Rubrics were created based on educational research to aid in consistency when scoring these instruments. The third instrument of academic engagement was attendance records. Summative assessments in the form of unit tests and final exams were used as measures of achievement. Measures of central tendency and regression analysis were used to explore the quantitative data collected for levels of student academic engagement and level of achievement. The study revealed a significantly positive correlation between the level of academic engagement and academic achievement in their high school Mathematics classes.

On the contrary, Finlay (2006) found that students' engagement factors have no statistical significant correlations with academic performance. Also, Hayam-Jonas (2016) studied the relationship between student engagement and academic achievement and found that there was no

relationship between engagement and academic achievement. The variable of academic engagement cannot be exhaustively discussed without reference to academic motivation.

Academic Motivation and Students' Performance in Economics

Academic motivation as a non-cognitive variable has also been explored by scholars of repute such as Ryan and Deci (2000), Omondi (2005) and Slavin (2006). The term motivation is derived from the word motive which means moving into action. The word motive is a force which induces people to act in a way that will ensure the fulfillment of a particular human need at a time. It is worth knowing that behind every human action there is a motive. The word 'motivation' is a crucial part of a student's experience from preschool onward; and it is capable of affecting how students approach school in general, how they relate to teachers, how much time and effort they devote to their studies, how much support they seek when they're struggling with academic activities and how much they attempt to engage or disengage their fellow.

Motivation, according to Murray (2011), may be rooted in a basic need to minimize physical pain and maximize pleasure, or it may include specific needs such as eating and resting, or a desired object, goal, state of being, ideal, or it may be attributed to less-apparent reasons such as selfishness, morality, or avoiding mortality. This means that motivation is usually directed towards goal attainment; it helps us to achieve certain goal(s). In academic related cases, the concept is commonly referred to as academic motivation.

Academic motivation is the energetic force behind student's inspiration to learn and excel in academic work. Academic motivation in the opinion of Muola (2010) is students' need or drive towards the achievement of success in academic work. It is the degree to which individuals vary in their need to strive for attainment of academic rewards, such as good grades, praise from

fellow students and teachers, and feelings of personal mastery in academic engagements. Academic motivation, therefore, gives strength and direction to behaviour and gives energy to the students, in maintaining the energy that directs their activities. Gesinde (2000) stressed that the urge to succeed academically differs from one individual to the other; as for some, the necessity for academic achievement is very high while, for others it is very low. This suggests that people contrast in their need to achieve in situations that call for academic excellence. Individuals with high academic achievement intentions usually act in ways that will enable them to outstrip others, meeting or bettering some standards of excellence or do something unusual which would not have been possible if not motivated.

The place of motivation in academic success cannot be jettison because it is what gets one going, keeps one going, and determines where one is to go (Slavin, (2006). Motivation is one of the elements that contribute to academic achievement. As a result, it becomes imperative for both parents and teachers to understand why promoting and encouraging academic motivation of their students is very important. It is crucial to a student's academic success at any age and any academic level. This is on the notion that development of academic motivation has significant implications for academic careers either in the short run or at the long run. Academic motivation is an imperative concept in academic settings and is linked to increased levels of academic achievement. Students with high level of academic motivation are more probable to have increased levels of academic achievement.

Level of academic motivation can be affected by students' beliefs system. Students who believe they have a limited capacity to learn or feel they are unlikely to succeed often have problems with motivation and will be less motivated to learn. In a similar manner, students who conceptualize intelligence as a fixed quantity that one either has or doesn't have tend to be less

motivated than students who view knowledge as something that can change and grow. It is in relation to this belief system or mindset that researchers conceptualize four major dimensions that contribute to student motivation. The dimensions, according to Murray (2011), are competence, autonomy, interest or value, and relatedness. In the same vein, Dweck (2010) is of the viewpoint that at least one of the dimensions must be satisfied for a student to be motivated.

Competence describes student's belief in his or her ability to complete a given task; control/autonomy explains student's feeling of being in control by seeing a direct link between his or her actions and an outcome and retains autonomy by having some choice about whether or how to undertake the task; interest/value deals with student's interest in the task or sees the value of completing it; and relatedness has to do with social rewards, such as a sense of belonging to a classroom or other desired social group or approval from a person of social importance that the student will benefit or gain by completing the task (Murray, 2011). The interplay of these dimensions alongside other dynamics such as school climate and home environment is quite complex and varies not only among different students, but also within the same student in different situations.

Students can also be motivated by the desire to achieve a predetermined goal. Students who are not motivated by love of learning alone may do better in school if they can see learning as a gateway to something else they value. Research by Center on Education Policy (2012) suggests that goals can help in motivating students to work harder if certain conditions are present before them; and the goal are realistic, achievable, and education dependent. This means that the goal should be embraced by the student and the student must be able to see a clear path for attaining the goal and also the goal should be supported by people important to the student(s). It is worth knowing that goals can as well undermine motivation if they are too difficult, or if

students feel that a goal has been imposed on them or that failing to meet it would have dire consequences.

The motive behind students' academic success may be intrinsically or extrinsically incline. Ryan and Deci (2000) noted that the type of motivation determines the 'why' of a student's action toward academic activities. This suggests that there is intrinsic motivation and extrinsic motivation. It is in line with this that the concept was conceptualized into three parts by self-determination theory developed by Edward Deci and Richard Ryan in 1985. They distinguished types of motivation based on the reasons that move people to action. The authors define three major types of motivation, well known in education: intrinsic, extrinsic, and finally, amotivation (lacking an intention to act). The quality of the experience and of performance will vary according to the type of motivation. Intrinsic motivation, according to Ryan and Deci (2000), is the doing of an activity or engaging in an event for its inherent satisfactions instead of some detachable significances. It is concern with engagement in an activity for itself, and the pleasure and satisfaction derived from participation in the activity and accomplishment of certain tasks. Intrinsic motivation creates a different forum for learning in which students begin to learn because they want to learn rather than learning for grade or recognition.

When an individual is intrinsically motivated, he or she is energized and passionate about the task being performed, and after it is done, feels a sense of satisfaction or fulfillment which would not have been felt without completing the task(s). Individuals with intrinsic motivation have inherent locus of control and enjoy achievement of a task for pleasure, engage in activities that give rise to experience of stimulating sensations, and are eager to learn new things (Ayub, 2010). Contrariwise, extrinsic motivation explains the value of the performance of an activity in order to attain some separable outcome (Ryan & Deci, 2000); in terms of a number of

engagement that function as a means to an end and not an end in itself. It is the desire to achieve something not for the enjoyment of the thing itself, but because doing so leads to a certain result (Pintrich, 2003). Extrinsic motivation consists of three different components, with the first component as external regulation, which is regulated through outside rewards, punishments and constraints; introjected regulation, which concerns with the internalizing the importance of and the reasons for doing certain activities; and identified regulation, which involves choosing to identify with the values associated with academic activities.

Academic motivation is intrinsically inclined if the student involved is highly motivated to do homework and other academic activities out of curiosity and interest, but extrinsically inclined if the student is motivated to do homework and other academic works to procure the approval of the teacher or parent. Whether motivated intrinsically or extrinsically, its place in driving students towards the attainment of academic success cannot be neglected. It is on this note that Pintrich and Schunk (2002) regard motivation as an integral part of learning irrespective of the age level of the learner(s). According to Awan, et al. (2011), lack of motivation is “a big hurdle in learning and a pertinent cause in the deterioration of education standards.” When students who are motivated to learn about a particular topic, they will be keen to engage in actions they believe will help them learn, such as attending carefully to the instruction, taking notes to ease subsequent studying, checking their level of understanding through a thorough reflection on the materials read and asking for help when they do not comprehend the learnt material (Pintrich & Schunk, 2002). However, students who are not motivated to learn will not be passionate in their learning efforts by not being attentive during the lesson and not organize or revise the learning material. Note-taking, which is an integral part of schooling, may be done irregularly or not at

all. Such students may not monitor their level of understanding talk less of asking for help when they do not understand what is being taught in the class or outside the class.

Academic motivation is an important variable that capable of influencing learning and performance either positively or negatively. This is more reason why Tella (2007) sees motivating learners as a significant aspect of effective learning because it may be difficult for satisfactory school learning to take place in the absence of sufficient motivation to learn and achieve. Academic motivation is one of the requirements for genuine learning and good academic achievement. Reasonable numbers of studies have emerged on the influence of academic motivation on students' academic achievement. For instance, Krishnamurthy (2000) found a positive and significant relationship between academic motivation and academic achievement. Also, Matuga (2009) found a positive relationship between academic motivation and students' academic achievement. In a related study among primary school pupils' conducted by Othman and Leng (2011) on the relationship between motivation and academic achievement, a significant correlation between motivation and academic achievement was also reported.

To further establish the influence of academic motivation on students' academic achievement, Kourosh, Shahrzad, Hamzeh, & Hadi (2011) studied 252 Tehran University students with a view of establishing the relationship between academic motivation and academic achievement among on the students using cross-sectional correlation study. A 43-item questionnaire was used to measure the students' level of academic motivation. Data were analyzed using Pearson Product Moment Correlation with the aid of SPSS. The researchers reported a positive and significant relationship between achievement motivation and academic achievement. It was, therefore, recommended that more attention should be paid to academic motivation by administrators and educational planners.

Huseyin (2016) explored influence of academic motivation on the academic performance of pre-service English teachers. The researcher sampled 98 university students enrolled in an English teacher education program at a state university. Academic Motivation Scale and self-reported measure of their cumulative grade point average were used in gathering data used in the study. Findings of the study revealed a statistically significant relationship between academic motivation and academic achievement of the pre-service English teachers. Based on the findings of the study, it is recommended that training and development in the areas of students' academic motivation, should be addressed through the teacher education programs as a developmental plan not only by teachers but also by other stakeholders who can intervene in their professional development including experts and professionals in the field, program designers, policymakers, and even parents.

On the contrary, in a psychometric investigation of the academic motivation, Cokley, Bernard, Cunningham and Matoike (2001) reported a non-significant relationship between students' intrinsic motivation and grade point average. In the same wise, Omondi (2005) found that there was no significant relationship between academic motivation and students' academic achievement. Similarly, Atieh, Hasan, Fezzeh, Mohammad and Hoda (2016) examined the relationship between academic motivation and academic performance of students at Mazandaran University of Medical Sciences. Descriptive research design was adopted and convenient sampling method was used in selecting 280 basic and clinical sciences level students of medicine at Mazandaran University of Medical Science for the study. A 29 achievement motivation scale developed by Hemance was used to collect data on academic motivation in addition to the students' academic achievement data collected through the students' academic record. Result of the data analysis revealed an insignificant relationship between academic motivation and

academic performance. It was then recommended that necessary that the educational administrators pay attention to this important issue.

Relationship between Academic Mindset, Academic Perseverance, Academic Engagement, Academic Motivation and Students' Performance in Economics

Academic mindset, motivation, perseverance, and engagement all play important roles in students' academic performance because of the interrelated link between the variables. For instance, a person's level of mindset can have dramatic impacts upon what they choose to do, how long they persist in doing it in the face of challenges or failures, how they react to praise expectancy of success or failure in future endeavors. It is in line with this that Farrington, et al. (2012) asserted that student's mindset determines the motivate behind his action, the extent to which he persist at school work; which in turn will manifest itself through better academic behaviours (engagement) and consequently lead to improved academic performance. This means that positive academic mindsets will motivate students to persist at school work; which in turn will manifest itself through better academic engagement and thereafter lead to good academic performance. Little wonder that Adeyemo and Agokei (2010) described the positive aspect of the construct as belief about one's ability to perform successfully in a given course. This explains the level at which the variables are intertwines with one another.

The interrelationship between these variables starts with mindset. This is in line with Dweck (2000) report that one's mindset has significant effect upon motivation, perseverance, engagement, and persistence, particularly in the face of challenges. Non-cognitive variables of academic mindset, motivation, perseverance, and engagement have been found positively related to academic performance (Pike, Kuh and Gonyen 2003). This implies that for any student to benefit immensely from school academic activities, such student must have positive academic

mindset, be motivated towards academic works, be persistent, and academically engaged. Studies abound on the relationship between and among the variables of academic mindset, motivation, perseverance, engagement and academic performance. For instance, Okubanjo (2014) examined the correlations between academic perseverance, class attendance and students' academic engagement among secondary school students in Ogun State. The outcome of the study revealed a significant relationship among academic perseverance, class attendance and students' academic engagement. Also, Kuh and Gonyea (2005) found academic engagement to be positively related academic performance. This implies that for any student to benefit immensely from school academic activities, such student should be academically involved. It is believed that if these variables are harnessed, they will work collectively to influence students' academic performance.

Appraisal of the Reviewed Literature

What has been observed from the literature is that the society is more concerned about students' academic performance at the expense of other areas of learning outcome. In the review, efforts were made to see what other researchers had reported on non-cognitive variables of academic mindset, academic perseverance, academic engagement and academic motivation in relation to academic performance. Studies like Ivcevic and Brackett (2014) and De-Vera, Gavino and Portuga (2015) have shown that non-cognitive variables of academic mindset, academic perseverance, academic engagement and academic motivation influences students' academic performance especially Economics. Despite the number of available studies related to this work, the influences of non-cognitive variables on academic performance have not been clearly and completely revealed in the sense that most of the empirical works on the variables are inconclusive and controversial.

For instance, in a study conducted on academic mindset which is the first variable of interest in this study, Affum-Osei, Eric, Barnie and Forkuoh (2014) investigated “the relationship between academic mindset and academic performance of high school students” and found a significant correlation between academic mindset and academic performance. Similarly, Ahman-Mahmud (2016) re-affirmed a high level of relationship between academic performance and academic mindset in the study conducted on the relationship among self-concept and locus of control dimensions of mindset in relation to academic performance. However, controversy is noticed in the reported findings of Charlotte (2017) who explored “the relationship between sense of belonging part of mindset and academic performance” and reported a non-significant relationship between academic performance and the sense of belonging dimension of mindset. Most of the studies on mindset only considered one or two dimensions of mindset leaving other dimensions unexplored. The observed controversial reports and the inability of the previous research to address the four dimensions of mindset make research on the influence of academic mindset on academic performance inconclusive and these constitute parts of the gaps to be filled in the present study.

From the literature, academic perseverance is equally found significantly important in relation to academic performance but despite its importance, conflicting reports were observed. For instance, in a study conducted to predict academic achievement of middle school students by perseverance, Seider, Gilbert and Gomez (2013) found that students’ academic perseverance was a highly significant predictor of their cumulative grade point average. This was corroborated by Duckworth, et al. (2007) who studied 139 undergraduate psychology students of Ivy League University in United States and found perseverance scores to be positively associated with high performance. Contrarily, a study conducted by Bazalais, Lemay and Doleck (2016) on how

perseverance affects student academic performance in first-year college physics students in the context of a Quebec College found perseverance to be a non-predictor of academic performance. What was observed from the review undertaken on academic perseverance and academic performance was that the available evidences are conflicting. Hence, there is need to further research into the variables because the place of academic perseverance in students' academic performance cannot be overemphasized.

In an attempt to further explored variables that can dictate academic performance in addition to academic mindset and academic perseverance, academic engagement was also found to be positively related with students' academic performance. The concept of academic engagement is seen as the psychological investment students devoted to educational activities inside and outside of classroom setting. In line with this, Farrington, et al. (2012) itemized academic behaviours (engagement) to include frequently attending class, arriving ready to work (with necessary learning materials), paying attention, taking part in instructional activities and class discussions, and devoting out-of-school time to studying and completing homework. This is in agreement with the findings of Sirin and Sirin (2004), Sbrocco (2009), and Wang & Holcombe (2010) who found significant relationship between academic engagement and academic performance.

Academic motivation, which is the energetic force behind students' inspiration to learn and excel, was also reviewed in the course of this study. From the reviewed literature, academic motivation was equally found to be significant predictor of students' academic performance. This was confirmed by Kourosh, Shahrzad, Hamzeh, & Hadi (2011) who studied 252 Tehran University students with a view of establishing the relationship between academic motivation and academic achievement among on the students and found a significant relationship between

academic motivation and academic performance. This result was, however, refuted by the findings of the study conducted by Atieh, Hasan, Fezzeh, Mohammad and Hoda (2016) on relationship between academic motivation and academic performance of students at Mazandaran University of Medical Sciences which revealed an insignificant relationship between academic motivation and academic performance. There is, therefore, the need to revalidate the influence of academic motivation on academic performance since the existing findings are controversial.

It is evident from the forgoing, that studies abound to show that mindset, perseverance, engagement and academic motivation exert considerable influence on students' academic performance, in general, and Economics in particular. The reviewed literature has revealed to the researcher that apart from the fact that most of the studies on non-cognitive variables in relation to academic performance were done outside Nigeria, to the best of the researcher's knowledge, none of the studies carried out in Nigeria combined academic mindset, academic perseverance, academic engagement and academic motivation, neither were there studies that used structural equation model to link the influence of the non-cognitive variables on academic performance, in general, and Economics in particular. It was on this basis that this study was carried out to structurally explore how selected non-cognitive variables influenced secondary school students' performance in Economics in South-west, Nigeria. This study was, therefore, amply justified as a complementary study to the existing knowledge.

Theoretical Framework

Theory of Mindset by Dweck (2006): Theory of mindset was propounded by Dweck in the year 2006 as a framework for explaining individual's beliefs about his/her intellectual abilities. Being one of the greatest researchers of mindset theories, Dweck outlined two intelligence theories and

their corresponding mindset. The intelligence theories outlined by Dweck are entity theory (fixed mindset), which believes that intelligence is constant; and the incremental theory (growth mindset), which stems from the argument that abilities and talents may be built through different ways, such as persistence, good teaching, and effort. Growth mindset premised on the belief that the primary traits of an individual may be built through commitment and hard work (Dweck, 2007; Hochanadel & Finamore, 2015). The theory posits that when students believe they have control over their own ability to learn and believe they have the potential to improve, it increases their motivation, persistence, and ability to accept challenges (Esparza, Shumow, & Schmidt, 2014). On the other hand, a fixed-minded person perceives his or her intelligence as a static inherent quality that cannot be improved upon irrespective of the efforts made. Mindset is an important part of people's motivational systems. It influences the goal that people pursue, the level of interest they maintain and the effort they invest as well as predict their behaviour after setbacks (Dweck, 2007).

Self-determination Theory (SDT) of Motivation: Self-determination theory (SDT) was propounded by Deci and Ryan in 1985 for understanding individuals' motivation. In 1985, Deci and Ryan outlined intrinsic motivation, extrinsic motivation and amotivation; each of which has specifiable consequences for learning and performance (Ryan & Deci, 2000). Intrinsic motivation involves engaging in an activity for itself and for the pleasure and satisfaction associated with it. Within intrinsic motivation, there are three domains; intrinsic motivation to know, intrinsic motivation to accomplish and intrinsic motivation to experience stimulation. Extrinsic motivation explains the value of the performance of an activity in order to attain some separable outcome (Ryan & Deci, 2000); in terms of a number of engagement that function as a means to an end and not an end in itself. Extrinsic motivation consists of three different

components, with the first component as external regulation, which is regulated through outside rewards, punishments and constraints; introjected regulation, which concerns with the internalizing the importance of and the reasons for doing certain activities; and identified regulation, which involves choosing to identify with the values associated with academic activities. The absence of any self-determination is called amotivation; which is the lack of both extrinsic and intrinsic motivation. Ryan and Deci (2000) stressed that a student who is amotivated cannot will not be able to explain why he/she attends school, and such will affect his/her level of perseverance, engagement and academic performance.

Tinto's Theory of Student Persistence and Departure: Tinto's theory of student departure was developed in 1993 to explain student's persistence. Student persistence is defined as the desire and action of a student to stay within the system and dynamics of education from beginning through completion (Renn & Reason, 2013). Persistence involves dealing with hurdles rationally rather than complaining (to efficiently move further in accomplishing a task instead of being irritated about the task). Tinto's theory of student departure states that students enter school with individual characteristics including demographic characteristics, and their goals and aspirations for their school experience. It is how students feel about their experiences in the school, in addition to how well they academically and socially integrate into the school culture, which affects their decisions to persist or depart from an institution (Renn & Reason, 2013). Tinto's theory posits that persistence (perseverance) is an asset or strength, a desirable and advantageous quality, characteristic or process that is likely to impact positively on aspects of an individual's performance.

Engagement Theory by Fredricks, Blumenfeld and Paris (2004): Engagement theory is a framework developed for explaining set of behaviours that signal serious psychological

investment students devote to educational activities, and the extent to which they are actively involved in such significant educational experiences and activities. The fundamental underlying idea of engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks. Fredricks, et al. (2004) described engagement as a malleable, developing, and multidimensional construct that consists of three broad dimensions: behavioural, cognitive, and emotional. Behavioural engagement references students' behaviour in school, such as homework completion, absence of disruptive behaviours (absenteeism or tardiness), paying attention in class, and taking part in instructional activities. The emotional aspect of academic engagement denotes students' feelings about school, and their interest in the school activities. Cognitive engagement on its own discusses students' investment in learning, such as their desire to go beyond requirements, preference for a challenge and use of learning strategies to their own advantage (Fredricks, et al., 2004).

The theories reviewed above shows that the variables of mindset, motivation, perseverance and engagement are interrelated in one way or the other. The connectivity of these variables in relation to students' performance was empirically studied by this researcher using Structural Equation Model (SEM). This was done so as to report both the direct and indirect relationships of mindset, motivation, perseverance and engagement with students' performance.

Structural Equation Model (SEM)

Structural Equation Models (SEM), also known as path analysis with latent variables, is a statistical method used in testing hypotheses about the relationships among observed and latent (unobserved) variables. Structural equation models comprise both a measurement model for each latent variable and a structural model. The measurement model relays observed

responses or ‘indicators’ to latent variables. It emphasizes the relationship between latent constructs and their measured variables. As a statistical method, structural equation model takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a theory relating to some phenomenon (Byrne, 2009). Structural equation model is said to take a confirmatory approach to data analysis in the sense that it uses confirmatory factor analysis (CFA) to test the measurement model of relations / structures between the observed measures (indicators) and the underlying factors postulated by the researcher(s) based on knowledge of the theory, empirical research, or both.

Confirmatory factor analysis is a statistical tool used to establish or confirm measurement properties of instrument of data collection. This is on the notion that an instrument, be it adopted or adapted, may be well validated in other cultural groups but not in another sample (culture specific). CFA, therefore, confirms the construct validity of the instrument(s) in relation to the researcher’s culture because if the instrument is not measuring something meaningful, the consequent analyses may be meaningless or even misleading (Cheung, 2009). In a more practical sense, CFA concentrates solely on how, and the extent to which, the indicators are connected to their underlying latent factors (Khine, 2013). It is concerned with the degree to which the observed variables are generated by the underlying latent constructs and the strength of the regression from the factors to the observed variables.

The second aspect of structural equation model, which is the structural model (latent variable model), then specifies relations among latent variables and regressions of latent variables on observed variables; it defines relations among the latent variables or latent independent variables and measured dependent variable. Divergence from the factor analytic model, the full latent variable (LV) model tolerates the specification of regression structure

among the latent variables (Byrne, 2009). This model is termed full (or complete) because it comprises both a measurement model and a structural model: the measurement model depicting the links between the latent variables and their observed measures (i.e., the CFA model), and the structural model depicting the links among the latent variables themselves (Khine, 2013).

SEM is usually performed using specialized computer software programs, with Linear Structural Relations (LISREL) being the first SEM software program. Some of the other programs designed for structural equation modeling include Analysis of Moment Structure (AMOS), Mplus, Ramona, and Sepath, to name a few. These software programs are each unique in their own way, with some offering specialized features for conducting different SEM applications. Many of these SEM software programs provide statistical analysis of raw data like means, correlations, missing data conventions; provide routines for handling missing data and detecting outliers, generate the program's syntax, diagram the model, and provide for import and export of data and figures of a theoretical model.

Assumptions of SEM: To perform SEM, there are certain assumptions that must be met. Some of the assumptions made in SEM are: a) a considerably large size of sample, b) normality, c) absence of effective outliers, and d) absence of multicollinearity. Detection and treatment of missing value, identification of outliers, testing for assumption of normality, and multicollinearity are steps considered necessary to determining the analysis technique to be adopted. The assumptions are discussed as follows.

Sample Size: For obtaining reliable estimates, the first assumption supposes the requirement of large sample size for structural equation model. To perform SEM, researchers are of divergent opinion about the sample size. However, Abdulbaqi (2012) suggests that it is more comfortable to have at least 300 cases for factor analysis, which is a subset of SEM. The above position

strengthened Boomsma and Hoogland (2001) opinion that the issue of non-convergent may occur with sample less than 200 while Maximum Likelihood (ML) estimation would be impossible with less than 100 samples.

Detection and Treatment of Outliers: Outliers are values which are distinctly divergent from other observations in the data set. It is information or observations which are numerically distant to the rest of the data collected for the same purpose in a study. As expressed by Abdulbaqi (2012), outlier could be beneficial or disadvantageous, depending on their status in a particular data. Outlier will be considered beneficial if it assists in revealing characteristics of the population that might have gone unnoticed in the course of analysis while disadvantageous outlier will give wrong impression about the population, and such can hamper the statistical test. Detection of outlier must be done, at the univariate level, by inspection of maximum and minimum values by means of descriptive analysis, and by inspection of box plots using the exploratory descriptive method in SPSS. Outlier at the multivariate level can be detected by calculating the Mahalanobis distance level as suggested by Pallant (2003).

Normality Test: Structural equation model assumes that the observed data in the data set must be normally distributed. This is a prerequisite assumption for multivariate analysis and failure to ensure this can lead to misleading association between the variables under study thereby hampering the internal validity of the research findings. Methods of testing normality of data include skewness, kurtosis, Kolmogorov-Smirnov, and Shapiro-Wilk. For this study, skewness and kurtosis will be employed. While perfect skewness and kurtosis assumes the value of zero, the acceptable values according to Tabachnick and Fidell (2007) is one that does not exceed ± 2 .

Multicollinearity: Multicollinearity is the extent to which variable's influence can be explained by other variables in the analysis. Multicollinearity evaluates the degree of relationship that exists between the independent variables and the dependent variable(s) on one hand, and the interrelationship between the independent variables. In doing this, Pallant (2003) is of the opinion that the observed correlation must not exceed 0.7. Correlation coefficient above that value signifies the presence of multicollinearity and this may jeopardize the forecasting power of the upstream variable on the downstream variable.

Assumptions of Linearity: Another important but rarely reported prerequisite for multivariate analysis is the test for linearity between dependent and independent variables (Baxter & Babbie, 2004). There should be linear relationship between the variables of interest before multivariate analysis like SEM can be performed. To ascertain linear relationship between the variable, histograms, normal plots of regression standardized residuals for the dependent variable and scatter plot of residual against predicted values should be examined.

Missing Data: Missing data refers to data or information not available for a respondent but available to other respondents in the same study. This can occur if the particular respondent fails to complete one or more sections in the data collection instrument, data entry error (Baxter & Babbie, 2004), or from problem of data collection where respondents are requested to skip certain portion of the instrument that are not applicable to them (Hair, Black, Babin & Anderson, 2010). To avoid this, preliminary inspection should be carried out on the information to be collected in the cause of the study. In doing this, instruments in which more than half of the information are not provided by the respondents should be discarded and totally excluded from the study. Any instrument with missing data of less than half could be remedied using mean

substitution technique of generating replacement values for missing data. SEM cannot be successfully performed without reference to certain basic steps.

Steps in Structural Equation Model: To perform structural equation modeling, there are five basic steps that must be satisfied. These are model specification, model identification, model estimation, model evaluation (testing model fit), and model manipulation. Model Specification, which is the first step in structural equation modeling, is the exercise of ceremoniously stating a model. A model is a statistical statement about the relationships between variables involved in the study. The first stage, therefore, in the modeling process is to postulate the model by stating the specific set of hypotheses to be tested, and it is mostly done through diagram. Example of specified SEM model is given below using a model specified by Huang (2011) in an attempt to structurally predict students' academic performance in College. The key used in the model are: ASF = Academic Self-efficacy; AMOT = Achievement Motivation; AENG = Academic Engagement; SENG = Social Engagement; and CGPA = Cumulative Grade Point Average.

The model, as conjectured by the researcher in his study, incorporated two different set of variables with the first set being exogenous variables and endogenous variable and the second set being latent variables and observed variables. The endogenous variables in the model are academic self-efficacy, achievement motivation, academic engagement and social engagement while the endogenous variable is the CGPA. Also in the model, the endogenous variables of academic self-efficacy, achievement motivation, academic engagement and social engagement which were in circles were treated as latent variables while behaviours that were believed to measure each of the latent variables were treated as measure variables alongside with the students' academic performance in form of CGPA. The behaviours that were believed to measure each of the latent variables were in rectangles associated with each of the latent

variables in circles. The information in rectangles are the data obtained from the questionnaire items of the latent variables. In the model, Huang (2011) proposed direct influence of the antecedent variables on the criterion variable (achievement). This is shown by the arrows that lead from ASF, AMOT, AENG, SENG to CGPA. The model is presented in Figure 2.

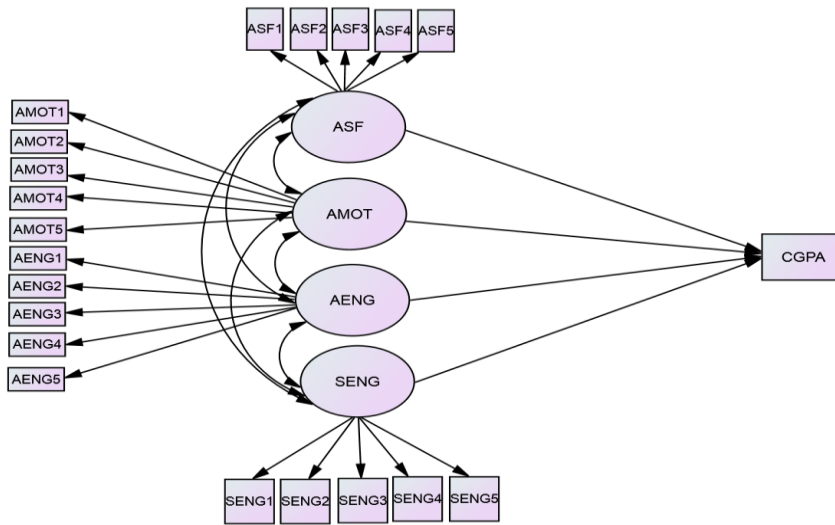


Figure 2: Structural Equation Model of Non-cognitive attributes and Students' CGPA (Huang, 2011)

Key: ASF = Academic Self-efficacy;
 AMOT = Achievement Motivation;
 AENG = Academic Engagement;
 SENG = Social Engagement; and
 CGPA = Cumulative Grade Point Average.

The determination of the possibility of the estimated parameters in the model brings the issue of model identification which is next to specification among the steps of SEM construction. Identification provides a preliminary check to determine whether or not the structural equation model can be estimated. SEM programs require an adequate number of known correlations or covariances as inputs in order to generate a sensible set of results. To achieve this, the model must be over identified. A model is considered over identified only when the number of data

points is greater than the number of parameters to be estimated by the researcher, and it is then that the analysis can proceed (Kaplan, 2007).

The third step in SEM construction is model estimation. Structural equation model (SEM) provides numerical estimates for each of the parameters (arrows) in the model to indicate the strength of the relationships. A properly identified SEM is expected to have some fixed parameters and some free parameters to be estimated from the data (Kaplan, 2007). Free parameters are estimated using the fitting functions such as Unweight Least Square (ULS), Maximum Likelihood (ML), Generalized Least Square (GLS), and Elliptical Distribution Theory (EDT), to mention but few. Maximum Likelihood is the most preferred and recommended method because of its superiority over others in normality assumption.

The next step in SEM statistics after model estimation is model evaluation. The major concern in structural equation modeling is the extent to which a hypothesized model fits, or, in other words, adequately describes the sample data (Byrne, 2009). Here, the researcher will have to make a dichotomous decision either to retain or reject hypothesized model. This suggest that the overall goodness of SEM must be evaluated by the researcher in order to ascertain the fitness of the model in relation to the data collected and the sample size. One of the mostly reported fit indices is like-hood ratio Chi square (χ^2). Its major attraction is that, of all of the fit indices used in SEM, it is the only one that has a test of significance associated with it. In reporting the like-hood ratio Chi square (χ^2), the ratio of Chi square (χ^2) to the degree of freedom ($\frac{\chi^2}{df}$) must be less than or equal to 3 for the model to be considered fit. However, the major problem with the χ^2 test is its sensitivity to sample size and non-normality in the underlying distribution of the input variables (Suhr, 2000); which makes it difficult for researchers to solely rely on the Chi-Square statistic in determining whether to reject the model or not.

Other than Chi- Square statistic commonly used in model evaluation, there other indices belonging to the class of Chi- Square statistic. These include, but are not limited to, the Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Root Mean Square Residual (SRMR) (Hooper, Coughlan & Mullen, 2008). The RMSEA ranges from 0 to 1, with smaller values indicating better model fit. A value of .06 or less is indicative of acceptable model fit. The GFI and AGFI range between 0 and 1, with a value of over .9 generally indicating acceptable model fit (Hooper, Coughlan & Mullen, 2008). Aside the indices explained above, relative fit indices of normed fit index (NFI) and comparative fit index (CFI) can as well be employed. The indices range from 0-to- 1, but the larger they are, the better the model; and the index from any of the method must at least be 0.90 (Cheung, 2009).

The last step of SEM analysis is model modification and it involves adjusting a specified and estimated model by either freeing parameters that were fixed or fixing parameters that were free during model estimation and specification stage. There are at least two reasons for modifying a model which include to improve fit and to test hypotheses (Cheung, 2009). Improving fitness of a model will make the researcher to have a parsimonious/meaningful model. Parsimonious means the simplest model with the least assumptions and variables but with greatest explanatory power.

Structural Equation Model was used in this study. This decision premised on its' ability to validate test items and establish direct and indirect relationships of variables hypothesized as causes of variables treated as effects. SEM is capable of testing hypotheses about the relationships among two different set of variables with the first set being exogenous variables and endogenous variable and the second set being latent variables and observed variables.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter focused on techniques and procedures used in carrying out this study. The methodology was presented under the following headings:

- a. Research Design;
- b. Population, Sample and Sampling Techniques;
- c. Instrumentation;
- d. Procedure for Data Collection; and
- e. Data Analysis Techniques.

Research Design

This study adopted ex-post facto research design. This design was considered appropriate because it allows the use of correlations among already existing variables in assessing the theoretical propositions about the variables. Ex-post-facto research design, according to Madu and Akobi (2014), is the type of design that seeks to establish cause-effect relationships by linking some already existing variables or behaviours as causative agents without manipulating the variables or behaviours. It is a design in which the researcher usually has no control over the variables of interest and, therefore, cannot manipulate them. Ex-post facto research design was, therefore, employed to explore the relationship among academic mindset, academic motivation, academic perseverance, academic engagement and academic performance on the notion that behaviours relating to the variables already exists.

On the basis of the ex-post facto design, the researcher hypothesized a Structural Equation Model (SEM) diagram in an attempt to examine the cause effect relationship. The

model was based on outcomes of empirical studies reviewed in this report. In doing so, causal thinking plays important role in the application of SEM analysis. The hypothesized model incorporated three types of variable: (a) exogenous variables, which include academic mindset (X_1) and academic motivation (X_2) that were not influenced by other variables in the model; (b) mediator variables, which are academic perseverance (X_3), and academic engagement (X_4); and (c) endogenous variable – students' performance in Economics (X_5) as being predicted by the other variables. In the model, direct influence of the antecedent variables on the criterion variable (performance in Economics) were proposed. This is shown by the arrows that lead from X_1 and X_2 to X_5 . Also, indirect effects were conjectured that shows how X_1 and X_2 relates to X_5 through the moderator variables of academic perseverance X_3 and academic engagement X_4 . The model is presented Figure 3.

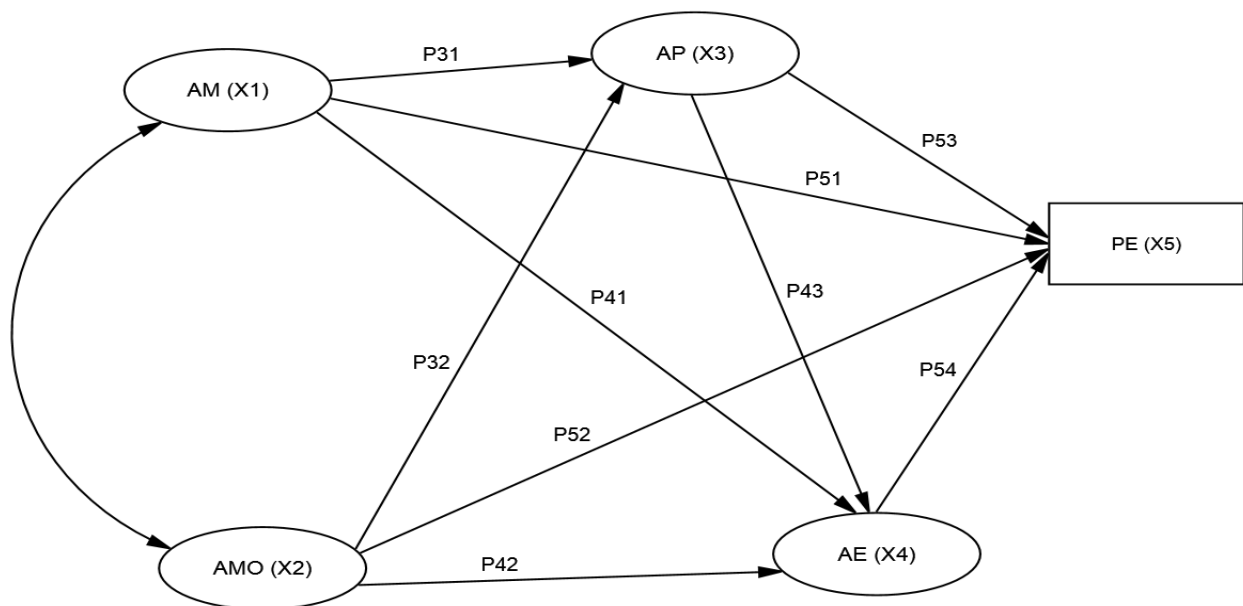


Figure 3: Hypothesized Structural Equation Model of Selected Non-cognitive Variables and Students' Performance in Economics

Key: AM (X_1) = Academic Mindset

AMO (X_2) = Academic Motivation

AP (X_3) = Academic Perseverance

AE (X_4) = Academic Engagement

PE (X_5) = Performance in Economics.

The specified relationships were translated into the following structural equations.

1. Joint Effect of Non-cognitive variables on academic achievement:

$$X_5 = (P53) (P31) + (P54) (P43) (P31) + (P54) (P41) + (P53) (P32) + (P54) (P42) + (P52) + (P51)$$

2. Indirect Effect of X_1 on X_5 :

$$X_5 = (P31) (P53) + (P41) (P54) + (P54) (P43) (P31)$$

3. Indirect Effect of X_2 on X_5 :

$$X_5 = (P32) (P53) + (P42) (P54).$$

4. Direct Effect of X_1 on X_5

$$X_5 = P51$$

5. Direct Effect of X_2 on X_5

$$X_5 = P52$$

6. Direct Effect of X_3 on X_5

$$X_5 = P53$$

7. Direct Effect of X_4 on X_5

$$X_5 = P54$$

Population, Sample and Sampling Techniques

The population of this study comprised all the Senior Secondary School Students in South-west zone of Nigeria. South-west of Nigeria has six states, namely Lagos, Ogun, Oyo, Osun, Ondo and Ekiti. The data collected from the Ministries of Education in each of the south-west states revealed that there were a total of 6,509 Senior Secondary Schools spread all over the six states with a total enrolment figure of 1,961,505 students. The target population for the study

was all Economics students in Senior Secondary Two (SS 2) in all the schools across the six states in the geopolitical zone with a total enrolment of 362,834 students.

Multi-stage sampling procedure was employed in the course of this research. The techniques included simple random and stratified sampling techniques used at different stages. At the first stage, simple random sampling technique was used to select three states (Ogun, Oyo and Ekiti) out of the six states in South-west zone of Nigeria. The process of the sampling was done in a single step with each state selected independently of the other states in the study area. To achieve this, dip hat method was adopted. In this method, names of the six states were written on different sheet of paper, folded and mixed together inside a container after which the blind-folded researcher picked three states covered for the study. The purpose of this was to afford all the six states in South-west equal chance of being picked for the study.

At the second stage, schools were selected based on school type (public and private). Each of the states in South-west has been classified into three Senatorial Districts. Stratified sampling technique was used to classify the schools into public and private schools. Amusan (2008) defined stratified sampling technique as a process whereby variables are classified into groups according to desired characteristics of the variables.

At the third stage of the sample selection, 1125 Senior Secondary School II Economics Students were selected as sample for the study. To achieve this, 5 schools, 3 from public and 2 from private, were selected from each of the three Senatorial Districts of the selected states to make a total of forty five (45) secondary schools using simple random sampling technique. Furthermore, simple random approach was used to select 25 Senior School Two (SS 2)

Economics students from each of the selected schools as participants for the study. On the whole, 1,125 respondents participated in the study.

Instrumentation

Scales and achievement test were employed in this study as instruments for data collection. The research questionnaires are: Academic Mindset Scale, Academic Perseverance Scale, Academic Engagement Scale, Academic Motivation Scale, and Economics Performance Test. All the instruments were adapted for the purpose of this study.

Academic Mindset Scale: The students' academic mindset scale is an instrument developed by Hanson (2017). The instrument was initially developed by the Project for Educational Research That Scales (PERTS) in 2014 and later re-validated by Janet Hanson in 2017. The instrument has 15 items developed to measure the different aspects of academic mindset. In order to validate the scale, correlations and exploratory factor analyses were performed by Hanson (2017) using pre-existing data from a sample of 2,908 students in grades 3 through 8, at three elementary and two middle schools in United States. The scale when validated, by the author, had reliability coefficient of 0.81. The scale has 6-point scaling model ranging from 1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree, to 6 = Strongly Agree with which the respondents self-reported their agreement with items in the scale. In the current study, a 4-point Likert-type scaling model ranging from 1 = Strongly Disagree, 2 = Agree, 3 = Disagree, 4 = Strongly Agree was adopted for clarity of response options. By means of the scoring procedure, the highest score a respondent can get is 60 and the lowest is 15. In the current study, the items were reworded to reflect Economic since the researcher used it in measuring academic mindset with respect to Economics as a subject.

In establishing the validity of the instrument, experts in Educational Research, Measurement and Evaluation in the University of Ilorin, Nigeria were consulted to face validate the drafted academic mindset scale. Based on the comments and suggestions from these experts, items that seem to be misleading or vague were modified and some were removed to ensure clarity. Furthermore, convergent validity was carried out in order to ensure content validity of the instrument. The validity process yielded Average Variance Extracted (AVE) coefficient of 0.60. To ascertain and re-affirm the reliability of the academic mindset scale, this researcher used internal consistency method of testing reliability based on Cronbach Alpha. To achieve this, the instrument was administered once to 40 selected senior secondary school students in Ilorin who had the same characteristics with the main respondents and the scores obtained were analysed using Cronbach Alpha with the aid of SPSS. The academic mindset scale yielded Cronbach Alpha coefficient of 0.78. This provided strong basis for appropriateness of the instrument for the purpose of the study.

Academic Perseverance Scale: The students' ability to persevere in the presence of adversities was measured using Grit Scale developed by Duckworth and Quin (2009); adapted by the researcher. The scale is an eight (8) item scale meant to measure students' perseverance and passion for long-term goals. The instrument was fashioned on a two subscale levels with 4 items each to measure students' perseverance of effort, and consistency of interest. The scale has 5-point Likert scaling type ranging from 1 = Not like me at all, 2 = Not much like me, 3 = Somewhat like me, 4 = Mostly like me, 5 =Very much like me, with which the respondents will self-report their agreement with scale items. The scoring procedure is that items 2, 4, 7 and 8 should be scored positively while items 1, 3, 5 and 6 to be scored in the reverse order. For the purpose of this study, item number 4 was rewarded so as to be fitted for our culture. The scale

was validated using data collected from students of United States Military Academy, West Point. Item-level correlation was computed and the correlations were ranked within each domain. Record of the initial validation process by the authors revealed that the perseverance of effort factor (subscale), the consistency of interest factor, and the whole Grit–has adequate internal consistency of .70, .77, and .82, respectively.

In establishing the validity of the perseverance scale, experts in Educational Research, Measurement and Evaluation in the University of Ilorin, Nigeria were consulted to face validate the drafted academic perseverance questionnaire. Based on the comments and suggestions from these experts, items that seem to be misleading or vague were modified or removed to ensure clarity. Also, convergent validity was carried out in order to ensure content validity of the instrument. The validity process yielded Average Variance Extracted (AVE) coefficient of 0.57. This researcher also ascertained the reliability of the academic perseverance questionnaire using data from the researchers' cultural environment. To achieve this, the instrument was administered once to 40 selected senior secondary school students in Ilorin who had the same characteristics with the main respondents. The researcher used internal consistency method of testing reliability based on Cronbach Alpha and the scale yielded Cronbach Alpha coefficients of 0.73, 0.72, and 0.76 for perseverance of effort, consistency of interest and the whole perseverance scale respectively. These coefficient values were considered high enough to be used in this study.

Academic Engagement Scale: Academic engagement scale was developed by Fredericks, Blumenfeld, Friedel and Paris (2005). The instrument was adapted in measuring the students' academic engagement level. The scale is a 15-item scale fashioned into three sub-scales as emotional engagement (6 items), behavioural engagement (4 items) and cognitive engagement (5

items). The items were constructed using a Likert-format scale of five alternatives for the responses ranging from 1 = Never, 2 = On Occasion, 3 = Some of the Time, 4 = Most of the Time, and 5 = All of the Time. In scoring this scale, the positive statements were scored from five points down to one point while the negative statements were scored from one point to five points following the options respectively. The scale was validated using data obtained from 661 middle children of Inner City schools in Chicago and Milwaukee, United States. The record of the exploratory factor analysis performed on the data by the authors revealed reliability coefficients of the subscales as behavioural engagement scale ($r = .72$), emotional ($r = .83$), and cognitive engagement ($r = .82$). The aggregate reliability coefficient stood at .79.

In establishing the validity of the academic engagement scale, experts in Educational Research, Measurement and Evaluation in the University of Ilorin, Nigeria were consulted to face validate the drafted academic engagement scale. Based on the comments and suggestions from these experts, items that seem to be misleading or vague were modified or removed to ensure clarity. Also, convergent validity was carried out in order to ensure content validity of the instrument. The validity process yielded Average Variance Extracted (AVE) coefficient of 0.63. The reliability of the academic engagement scale was re-affirmed by this researcher using data from the researchers' cultural environment. To achieve this, the instrument was administered once to 40 selected senior secondary school students in Ilorin who had the same characteristics with the main respondents. The researcher used internal consistency method of testing reliability based on Cronbach Alpha and the scale yielded Cronbach Alpha coefficient of 0.73, 0.77, 0.72 and 0.75 for behavioural engagement, emotional engagement, cognitive engagement and the overall scale respectively. These coefficient values were considered high to be used in this study.

Academic Motivation Scale: Academic Motivation Scale developed by Alvernimi and Luci (2008) was adapted in measuring the academic motivation of the students sampled for this study. The academic motivation scale is a 20-item scale developed for measuring the intrinsic, extrinsic and amotivation aspects of motivation. The validation was such that intrinsic motivation has 4 items, extrinsic motivation has twelve items and amotivation has 4 items. The items were constructed using a Likert-format scale of five alternatives for the responses with anchors that ranges from 1 = does not correspond at all, to 5 = corresponds exactly. Data was collected from a sample of 618 high school students in Grosseto, Tuscany. Confirmatory factor analysis was performed using AMOS 6.0 Version. The scale, when validated by the authors, has reliability coefficients of 0.84. However, the items of extrinsic motivation were reduced to seven because some of the items are not suitable for our culture. In order to make the response options clearer for the level of respondents, a 4-point Likert-type scaling model ranging from 1 = Strongly Disagree, 2 = Agree, 3 = Disagree, 4 = Strongly Agree will be adopted.

In establishing the validity of the academic motivation scale, experts in Educational Research, Measurement and Evaluation in the University of Ilorin, Nigeria were consulted to face validate the drafted items. Based on the comments and suggestions from these experts, items that seem to be misleading or vague were modified or removed to ensure clarity. Also, convergent validity was carried out in order to ensure content validity of the instrument. The validity process yielded Average Variance Extracted (AVE) coefficient of 0.66. To re-affirm the reliability of the academic motivation scale, this researcher used internal consistency method of testing reliability based on Cronbach Alpha. To achieve this, the instrument was administered once to 40 selected senior secondary school students in Ilorin who had the same characteristics with the main respondents and the scores obtained were analysed using Cronbach Alpha with the

aid of SPSS. The academic motivation scale yielded Cronbach Alpha coefficient of 0.79. This provided strong basis for appropriateness of the instrument for the purpose of the study.

Economics Performance Test: To measure the respondents' academic performance, the researcher made use of a 50 item multiple choice academic performance test extracted from past WAEC Economics objective test questions (2016 – 2018) reviewed based on SS I and II syllabus. Each correctly answered item in the test was allocated two (2) marks. The students' academic performance was based on their scores in the performance test in Economics.

This researcher ascertained the reliability of the Economics performance test using data from the researchers' cultural environment. To achieve this, the instrument was administered once to 40 selected senior secondary school students in Ilorin who had the same characteristics with the main respondents. The researcher used split-half method of testing reliability and the Economics performance test yielded reliability coefficient of 0.75. This coefficient value was considered high to be used in this study.

Procedure for Data Collection

The researcher, with the assistance of four trained research assistants, visited the schools in order to administer the questionnaires and achievement test designed for the study. To achieve this, a duly signed letter of introduction was obtained from the Department of Social Sciences Education in the Faculty of Education, University of Ilorin and presented to the appropriate authorities for introduction and permission to collect relevant data needed for the success of the study. The researcher also solicited the assistance of class teachers and guidance counsellor in each of the schools for easy administration of the research instruments. The respondents were

adequately instructed and guided while responding to the research instruments. The students were also encouraged to ask questions in order to clarify doubts regarding any items or question.

Ethical Consideration: In the cause of the study, ethical issues were put into consideration. To ensure this, the researcher collected a letter of introduction from the Head of Department, Social Sciences Education, University of Ilorin and sought the consent and approval of the authority of selected schools for the involvement of their students. Due to the sensitive nature of the study, consent of the students were sought and the researcher also ensured that the information provided by the respondents were for research used only and e treated with utmost confidentiality. Furthermore, no respondent was compelled to give response to the questionnaires; the distribution of questionnaires was determined by the willingness of the respondents. To ensure voluntary participation, the participants were given informed consent form where their willingness to participate was indicated. Participants were also informed of the right to withdraw from the study at any time if they wish to and their data would not be used in the study.

Also, in the administration of questionnaires as regards this study, the right to privacy of respondents was put into utmost consideration and was not infringed upon. The researcher ensured that the research report was not plagiarised to ascertain the originality of the study. The report of the findings of this study was done in such a way that actual findings that relate to data collected were reported.

Data Analysis Techniques

Descriptive statistics was used in describing the demographic profile of the respondents in the form of frequency and percentage. Path analysis and percentage were used to answer research question d. Furthermore, path analysis was used to answer research questions a, b and c.

Multiple regression analysis was used to test the two null research hypotheses formulated in the study at 0.05 level of significance. The decision to use multiple regression premised on its suitability to establish relationship between several independent variables and a dependent variable, while the use of pat analysis was based on its appropriateness for separating observed relationship(s) between or among variables into both direct and indirect categories.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

This section is concerned with the results of the findings based on the research questions raised and hypotheses formulated in chapter one of the study. The data analysis was done using descriptive, regression and path analysis techniques. The investigations of regression and path analysis were performed using Analysis of Moment Structure (AMOS) version 23.0 for windows.

Table 2: Respondents' Demographic Profile

Variable	Level	Frequency	Percentage (%)
Gender	Male	579	51.8
	Female	539	48.2
	Total	1118	100.0
Age Range	12-14 years	97	8.7
	15-17 years	910	81.4
	18 years and above	111	9.9
	Total	1118	100.0
School type	Public	671	60.0
	Private	447	40.0
	Total	1118	100.0

Results in Table 2 show the demographic distribution of the respondents sampled for this study. Out of the 1118 sampled respondents, 51% were male while 48.2% of the respondents were female. Also, 8.7% were within 12-14 years of age, 81.4% were within 15-17 years of age, and 9.9% were from 18 years above. With respect to school type, 60% of the respondents were sampled from public school while 40% were from private schools.

Based on the demographic profile of the respondents of this study, the correlation matrix of the variables in the study are as shown in Table 3 to ascertain the absence of multicollinearity.

Table 3: Correlation Matrix of the Variables in the Study

	Variables	1	2	3	4	5
1	Academic Mindset	1				
2	Academic Motivation	0.34*	1			
3	Academic Perseverance	0.25*	0.49*	1		
4	Academic Engagement	0.45*	0.27*	0.13*	1	
5	Performance in Economics	0.63*	0.12*	0.26*	0.35*	1

*significant at 0.05 level

Results in Table 3 show the inter-correlations among the variables in the study. It can be inferred from the analysis that there was no any evidence of multicollinearity among the variables. To prove absence of multicollinearity, Pallant (2003) is of the opinion that the observed correlation must not exceed 0.70; as correlation coefficient above that value signifies the presence of multicollinearity and this may jeopardize the forecasting power of the upstream variables on the downstream variable. The highest correlation coefficient among the variables is 0.63; which is the relationship between academic mindset and performance in Economics. This meant that none of the correlation coefficient of the variables exceeds 0.70. In other word, there is absence of multicollinearity among the variables in the study.

On the basis of the absence of multicollinearity among the variables in the study, the researcher addressed the research questions raised in the study.

Research Question One: To what extent do academic mindset, academic motivation, academic perseverance, academic engagement and performance in Economics fit the hypothesized structural equation model?

To answer the research question, the fitness index of Chi-square to degree of freedom ($\chi^2/d.f$), Goodness-of-fit Index (GFI), Adjusted Goodness-of-fit Index (AGFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA), as

specified by Usluel, Askar and Bas (2008), were evaluated. The information is presented in Figure 4.

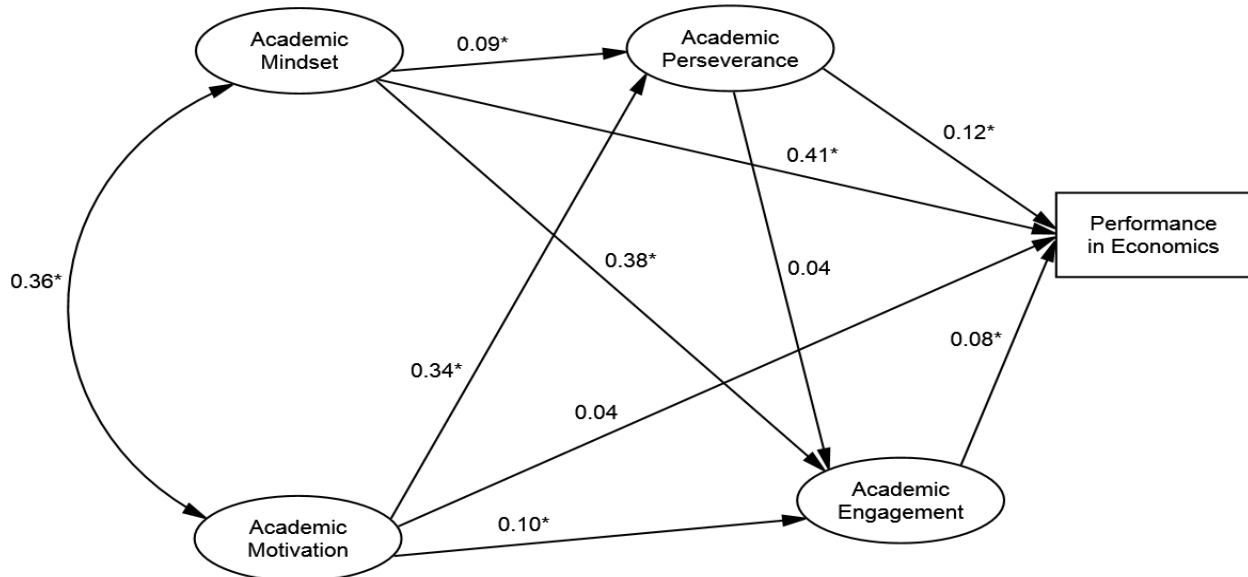


Figure 4: Structural Equation Model of Selected Non-cognitive Variables and Students' Performance in Economics

The Goodness-of-fit indices and other information regarding Figure 4 are presented in Table 4.

Table 4: Summary Statistics for Goodness-of-fit of the Tested Model

Fit Index	Recommended Value	Observed Value
Chi-square/degrees of freedom (126.27/43)	≤ 3.0	2.94
GFI	≥ 0.90	0.98
AGFI	≥ 0.90	0.97
NFI	≥ 0.90	0.98
CFI	≥ 0.90	0.98
RMSEA	≤ 0.06	0.04

GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index;
NFI = normed/normal fit index; CFI = comparative fit index;
RMSEA = root mean square error of approximation.

The ratio of Chi-square (χ^2) to its degrees of freedom (df) was 2.94 and was within the acceptable range of ≤ 3.0 . Also, as specified by Hooper, Coughlan and Mullen (2008), the other goodness-of-fit indices were within the acceptable ranges which indicated a good fit. Thus, to a great extent, the sampled data fitted the hypothesized model because all the fitness indices were within the acceptable range. However, despite the fact that the model fit the sample data, certain causal paths were not significant in the model. The path from academic perseverance to academic engagement and the path from academic motivation to academic performance were not significant (see Figure 4). As such, there is the need for model trimming in order to arrive at a more parsimonious model.

Research Question Two: What is the more parsimonious causal model for providing explanation of students' performance in Economics given academic mindset, academic motivation, academic perseverance and academic engagement?

To answer the research question, path trimming was done to delete certain paths with coefficient that are not statistically significant and/or are not meaningful in the explanation of the model in Figure 4. As prescribed by Garson (2011), paths with beta coefficient which are less than 0.05 should be considered statistically insignificant and therefore be deleted, while beta coefficients up to 0.05 but not significant could be retained on the basis of meaningfulness. The more meaningful causal model is presented in Figure 5.

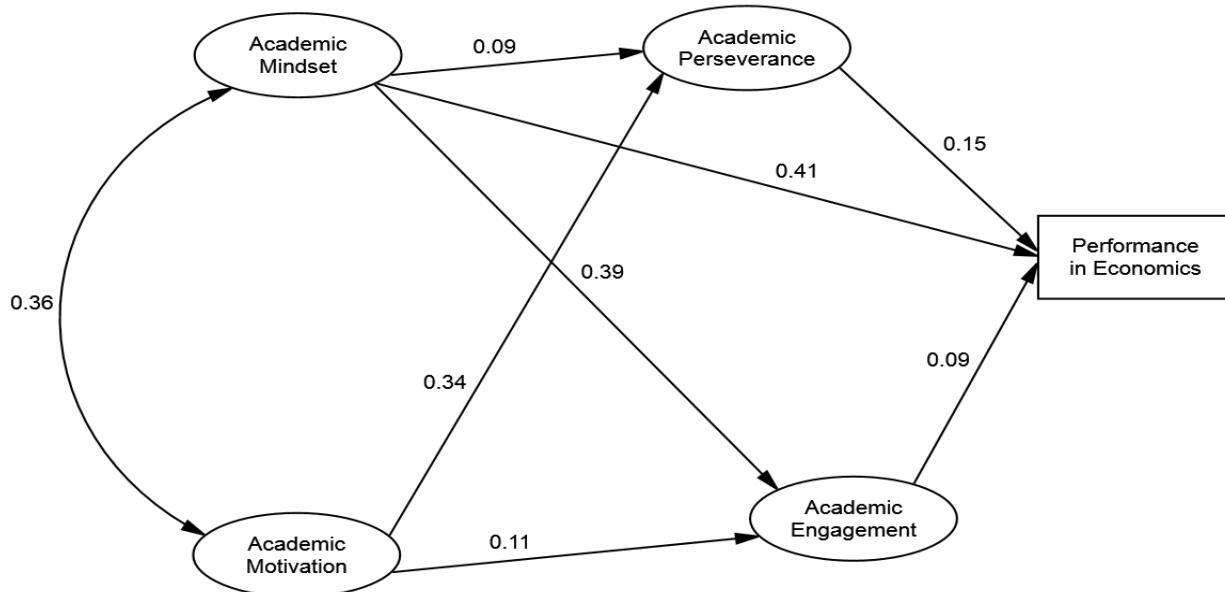


Figure 5: More Parsimonious Structural Equation Model of Selected Non-cognitive Variables and Students' Performance in Economics

The Goodness-of-fit indices and other information regarding Figure 5 are presented in Table 5.

Table 5: Summary Statistics for Goodness-of-fit of the More Parsimonious Model

Fit Index	Recommended Value	Observed Value
Chi-square/degrees of freedom (127.73/45)	≤ 3.0	2.84
GFI	≥ 0.90	0.98
AGFI	≥ 0.90	0.97
NFI	≥ 0.90	0.98
CFI	≥ 0.90	0.98
RMSEA	≤ 0.06	0.04

GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index;

NFI = normed/normal fit index; CFI = comparative fit index;

RMSEA = root mean square error of approximation.

Having deleted the causal path from academic perseverance to academic engagement and the causal path from academic motivation to academic performance that were not significant nor meaningful, all the path coefficients retained in the output model in Figure 5 are more than 0.05,

therefore no path should be deleted again in the output diagram which means that all paths in the model are important. The more parsimonious causal model that explained performance of students in Economics is the model with three direct and four indirect paths whose path weights were significant and meaningful.

Research Question Three: What are the directions and the strengths of causation of students' performance in Economics by academic mindset, academic motivation, academic perseverance and academic engagement?

To answer the research question, the standardized path weights of the relationships between the variables of the study as extracted from Figure 5 were interpreted. The directions as well as the strengths of causation of the variables are presented in Table 6.

Table 6: Directions and Strengths of Causation of Academic Performance by Academic Mindset, Academic Motivation, Academic Perseverance and Academic Engagement

Effect Variables	Causal Variables	Strengths	Direction	Strength
Performance	Academic Perseverance	0.15	Positive	Weak
Performance	Academic Engagement	0.09	Positive	Weak
Performance	Academic Mindset	0.46	Positive	Moderate
Performance	Academic Motivation	0.06	Positive	Weak

Results in Table 6 show that the directions and the strengths of causation of academic performance by academic mindset, academic motivation, academic perseverance and academic engagement in the model are positive since there is no negative path coefficient. This means that there is no inverse relationship between the variables in the model. The result as presented in the output of the tested model indicated a positive direction among all the causal variables.

Research Question Four: What proportions of the total effects are (i) direct and (ii) indirect?

To answer the research question, the total effects of causal variables on the effect variables were decomposed into direct and indirect effects. The proportions of the total effects that are direct and indirect are presented in Table 7.

Table 7: The Proportions of the Total Effects that are Direct and Indirect

Pathways	Total effects	Direct Effects (β)	Indirect Effects
To Academic Performance			
Academic Perseverance	0.15	0.15	—
Academic Engagement	0.09	0.09	—
Academic Motivation	0.06	—	0.06
Academic Mindset	0.46	0.41	0.05
Total	0.76	0.65	0.11
Percent (%)	100%	85.5%	14.5%

Results in Table 7 show the proportions of the total effects that are direct and indirect. Based on the analysis in the Table 7, 85.5% of the total effects were direct while 14.5% were indirect. This means that academic mindset, academic perseverance and academic engagement exert direct influence on performance in Economics more than indirect influence.

Hypotheses Testing

Hypothesis One: There is no significant causal relationship of academic mindset, academic motivation, academic perseverance and academic engagement with students' performance in Economics.

To test the hypothesis, joint causal relationship (R-value) and the R^2 value of the causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics were extracted from SEM analysis and the tested hypothesized model in Figure 5. The causal relationship is presented in Table 8.

Table 8: Causal Relationship Among Academic Mindset, Academic Motivation, Academic Perseverance, Academic Engagement and Students' Performance in Economics

R	R Square	Std. Error of the Estimate	p-value
0.55	0.30	5.64	0.00

Results in Table 8 show that there is causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics with the correlation (R) value of 0.55 which is significant at p-value of 0.00. On the basis of the results, the null hypothesis is rejected. Furthermore, the R-square value of 0.30, as contained in the table, means that the independent variables of academic mindset, academic motivation, academic perseverance, and academic engagement jointly predicted students' performance in Economics by 30%; which, therefore, means that 70% of variations in students' performance in Economics is accounted for by variables not considered in this study.

Hypothesis Two: There is no significant relative contribution of academic mindset, academic motivation, academic perseverance and academic engagement to the prediction of secondary school students' performance in Economics.

To test the hypothesis, the unstandardized estimates, standardized estimates, standard errors, and t-values of the variables in the study were extracted from SEM analysis and the tested hypothesized model in Figure 5. Path coefficient in SEM and factor loading in factor analysis are equivalent to regression coefficients. The standardized coefficients are used in this study to determine the relative contribution because they are transformations of unstandardized estimates that remove scaling information and can be used for comparisons of parameters of the model. The result is presented in Table 9.

Table 9: Relative Contributions of Academic Mindset, Academic Motivation, Academic Perseverance, and Academic Engagement to Students' Performance in Economics

Variables	(B)	Std. Error	(Beta)	t-values	p-values
Mindset	3.450	.443	.41	7.79	.00
Motivation	—	—	—	—	—
Perseverance	.949	.208	.15	4.57	.00
Engagement	.728	.489	.09	1.49	.13

Results in Table 9 show the contribution of each of the independent variables to the model. It reveals that academic mindset contributed Beta weight of .41 and the t-value of 7.79 which is significant at .00. Furthermore, academic perseverance contributed Beta weight of .15 and the t-value of 4.57 which is significant at .00. Academic engagement contributed Beta weight of .09 and t-value of 1.49 and it is not significant to students' performance in Economics at .13. However, all the variables, except academic motivation, contributed to students' performance in Economic, but only the contribution of academic mindset and academic perseverance were significant. This means that they had direct effects on students' performance in Economics.

Summary of Findings

Based on the results of the answered research questions and the outcome of the tested hypotheses, the following can be deduced.

1. To a great extent, academic mindset, academic motivation, academic perseverance, academic engagement and performance in Economics fitted the hypothesized model with chi-square (χ^2) value of 126.27, df = 43, and χ^2/df ($126.27/43$) = 2.94. Other fitness indices were also within the acceptable ranges which are indicative of good model fit.

2. The more parsimonious causal model that explained performance of students in Economics is the model with three direct and four indirect paths whose path weights were significant and meaningful.
3. The directions of the causation variables in the model are all positive but some of the effects of predictor variables on students' performance in Economics were not strong.
4. The percentage of the total effects that is direct is 85.5% and indirect is 14.5%.
5. There is significant causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics.
6. There is significant relative contribution of academic mindset and academic perseverance to the prediction of students' performance in Economics but there is no significant relative contribution of academic motivation and academic engagement to students' performance in Economics.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Introduction

This study examined structural equation model of selected non-cognitive variables and students' performance in Economics in secondary schools in South-west, Nigeria. From a population of 362,834, a sample size of 1,125 SS2 Economics students was selected by simple random technique in line with the 2006 research advisor. Simple random sampling technique was used to sample three from the six states in South-west, Nigeria. Similarly, stratified sampling technique was used to select 5 schools from each of the three senatorial districts of the selected states to make a total of forty five (45) secondary schools. From each of the schools, 25 Senior School Two (SS 2) Economics students were selected as respondents for the study using simple random technique. The data collected was analyzed using descriptive statistics, multiple regression and path analysis methods. The results obtained were discussed below.

Discussion of the Findings

The first finding of the study revealed that academic mindset, academic motivation, academic perseverance, academic engagement and performance in Economics greatly fitted the hypothesized model with chi-square (χ^2) value of 127.73, $df = 45$, and χ^2/df ($127.73/45$) = 2.84. This revealed that the chi-square (χ^2) value and other fitness indices evaluated in the study were within the acceptable ranges which were indicative of good model fit. This result might be due to the fact that the data collected conformed to assumptions of multivariate normal distribution, number of required indicators and model identification as specified by Kaplan (2007) that Structural Equation Model (SEM) programs required an adequate number of known correlations

or covariances as inputs in order to generate a sensible set of results and to achieve this, the model must be over identified (the number of data set must be more than the specified correlations). This result was, therefore, in line with the acceptable model fitness indices as specified by Hooper, Coughlan and Mullen (2008) that for a model to be considered fit, the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI) and Normed/Normal Fit Index (NFI) must be greater than 0.90 and the Root Mean Square Error of Approximation (RMSEA) should be below 0.06. Furthermore, these results corroborated that of Huang (2011) who structurally predicted students' academic performance in Ohio State University and Kenyon College in United State of America using a new non-cognitive measure and found all the fitness indices to be within the acceptable thresholds necessary for acceptance of a model.

The second finding showed that the more parsimonious causal model that explained performance of students in Economics was the model with three direct and four indirect paths whose path weights were significant and meaningful. This result was possible where the path weights of the causal links in the parsimonious model were within the acceptable values for significance and meaningfulness. This result corroborated Garson (2011)'s specification that paths with beta coefficient up to 0.05 could be retained on the basis of significance and meaningfulness, as well as had a link with the dependent variable (criterion). In the more parsimonious mode, 85.5% of the total effects were direct while 14.5% were indirect; which was an indication that academic mindset, academic perseverance and academic engagement exerted direct influence on academic performance more than indirect influence.

The results equally showed that the directions of the causation variables in the model were all positive even though some of the effects of predictor variables on students' performance in Economics were not significant. This suggested positive causal effects among the predictor

variables of academic mindset, academic motivation, academic perseverance and academic engagement, and with criterion variable of academic performance in Economics. This result was possible where performance in Economics and the causal variables moved in the same direction necessary for positive relationship. The result supported the work of Okubanjo (2014) who examined the correlations between academic perseverance, class attendance and students' academic engagement among secondary school students in Ogun State and found a significant positive relationship among academic perseverance, class attendance and students' academic engagement. This implied that for any student to benefit immensely from school academic activities, such student must have had positive academic mindset, be positively motivated towards academic works, be persistent, and academically engaged.

This discussion could not be considered complete without reference to the causal relationship among academic mindset, motivation, academic perseverance, academic engagement and students' performance in Economics. The result obtained showed that there was significant causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and students' performance in Economics. This meant that the independent variables of academic mindset, academic motivation, academic perseverance, and academic engagement highly correlated with students' performance in Economics. This result was plausible where the independent variables played important roles in students' academic performance especially in Economics. This result was in line with the earlier work of Pike, Kuh and Gonyen (2003) who reported that non-cognitive variables of academic mindset, motivation, perseverance, and engagement positively related to academic performance. This result was also consistent with the findings of Farrington et al. (2012) who reported that student's mindset determined the motive behind his action, the extent to which he persisted at school

work; which in turn would manifest itself through better academic behaviours (engagement) and consequently led to improved academic performance.

The results further revealed that though there was a significant relative contribution of academic mindset and academic perseverance to the prediction of students' performance in Economics but there was no significant relative contribution of academic motivation and academic engagement to students' performance in Economics. This meant that academic mindset and academic perseverance had direct influence on students' performance in Economics. This result was plausible where the sampled respondents had positive mindset and positive spirit of perseverance towards academic activities; which consequently led to high academic performance in Economics. The observed significant direct influence/contribution of academic mindset corroborated the work of Affum-Osei, Eric, Barnie and Forkuoh (2014) who investigated the relationship between academic mindset and academic performance of high school students and found a significant correlation between academic mindset and academic performance.

With respect to academic perseverance, the observed significant contribution corroborated the findings of Duckworth, Peterson, Matthews and Kelly (2007) and found academic perseverance of psychology undergraduates to be significantly correlated with academic performance. On the contrary, the result disagreed with that of Bazalais, Lemay and Doleck (2016) who found that there was no significant relationship between perseverance and students' academic achievement. Bazalais, Lemay and Doleck (2016)'s study was carried out in Canada among Quebec College undergraduates in which Pearson Product Moment Correlation was used for data analysis. The differences observed in the results of this study and that of Bazalais, Lemay and Doleck (2016) might be due to variation in cultural background, differences in respondents' age and statistical tools adopted.

It was also revealed that the relative contribution of academic motivation to performance in Economics was not significant. This meant that students' academic motivation and performance in Economics did not move in the same direction capable of yielding a significant relationship. This result is possible where motivation did not exert direct influence on academic performance, but rather work jointly with other variables to influence academic performance especially in Economics. This result corroborated the earlier work of Atieh, Hasan, Fezzeh, Mohammad and Hoda (2016) who found a non-significant relationship between academic motivation and academic performance. However, this result negates that of Othman and Leng (2011) who reported among others that there was significant positive correlation between motivation and academic achievement. The variation observed in the result of this study and that of Othman and Leng (2011) might be due to difference in cultural background and age level of sampled respondents. The current study was conducted in Nigeria among secondary school students while Othman and Leng (2011)'s study was carried out in China among primary school pupils.

An issue of interest in the study was that the results revealed that the relative contribution of academic engagement to performance in Economics was not significant. This meant that academic engagement was not a predictor of performance in Economics. This result is in line with that of Finlay (2006) who found that students' engagement factors have no statistical significant correlations with academic performance. The result of this study also supported the earlier finding of Hayam-Jonas (2016) who found that there was no relationship between engagement and academic achievement. This result refuted the findings of Pearce (2014) who found a significantly positive correlation between the level of academic engagement and academic achievement in students' high school Mathematics. Pearce (2014)'s study was

conducted in Canada and the researcher correlated students' engagement with achievement in Mathematics using Pearson Product Moment Correlation. Differences in cultural background, subject of interest and statistical tool employed might be responsible for the observed variations.

Generally speaking, students' academic performance had received considerable attention of scholars of repute on different factors capable of predicting its positive or negative direction. There are controversial reports on how some non-cognitive variables related with academic performance especially in Economics. Interestingly, this study had established the importance of positive academic mindset and academic perseverance in students' academic performance, especially in Economics. This study had also established that, though, academic motivation and academic engagement seemed important when discussing students' academic performance, but they were not of much importance to academic performance in Economics. Having discussed the results of the research, the researcher proceeded to conclusion.

Conclusion

Having discussed the findings of the study, the researcher concluded that academic mindset and academic perseverance, if empirically handled and analysed, could be strong predictors of students' academic performance in Economics. However, academic motivation and academic engagement though had been reported important contributor variables but, in this study, their contributions to academic performance were not significant. The influence of academic motivation and academic engagement on performance in Economics still remain controversial and deserve indept empirical research.

Implications of the Findings of the Study

On the basis of the results discussed above, the implication of the study was that, students who had positive academic mindset and could persevere in the presence of academic related adversities might have high academic performance in Economics. This meant that the identified variables had a significant contribution to academic performance of the students involved in this study. The education stakeholders particularly research scholars were, therefore, charged to make concerted efforts at solving the controversies identified, and ensure that students develop positive academic mindset and ability to persevere in their academic pursuit.

Limitations of the Study

The limitations of the study are listed as follows:

- i. The study was limited to South-west zone of Nigeria in which the sample size was from only three states. If the study had covered the whole zones, there is possibility of findings that may be different from what have been obtained, and thereby affecting the generalizability of the finding of the study.
- ii. The study considered only 4 selected non-cognitive variables (i.e. academic mindset, academic motivation, academic perseverance and academic engagement) amongst countless non-cognitive variables capable of predicting academic achievement of secondary school students in Economics. The mode of the results might possibly be different had more variables been considered.

Not minding these limitations, the researcher still considered the result valid at least in the area of the study. In essence, these limitations did not, in any way, render the results and the

conclusions drawn from the study invalid; since the study was empirically carried out and analyzed with relevant statistical methods. The results might, therefore, be adjudged valid and reliable for generalization purpose. The study might also be found useful to future researchers in the areas of structural equations especially in Economics. Using the results and discussion might be of assistance to school administrators, teachers and parents to gain a clearer insight of the kind of non-cognitive variables needed be encouraged if their students must achieve better academic performance.

Recommendations

Based on the findings of the study and their educational implications already highlighted, it was hereby recommended that education stakeholders should do their utmost best to ensure that students have positive mindset about their academics and imbibed spirit of perseverance in academic activities since the variables had been confirmed to have causal relationship with academic performance in Economics. Furthermore, the confirmation of the variables of academic mindset and academic perseverance as having causal effects on students' academic performance in Economics should be of significant consideration in academic discuss.

Finally, it was further recommended that Measurement and Evaluators as part of stakeholders in the education sector, be alive to the intertwined causal relationship among academic mindset, academic motivation, academic perseverance, academic engagement and academic performance and their role in unraveling the influence of academic mindset, academic motivation, academic perseverance and academic engagement in schools.

Suggestions for Further Studies

The present study focused on structural equation model of selected non-cognitive variables and students' performance in Economics in secondary school in South-west, Nigeria. In view of the limitations to the study, the researcher suggested that further studies could be carried out in the following areas.

- i. The replication of the study covering more schools in five geopolitical zones of the nation (Nigeria).
- ii. The use of other method of Structural Equation Model like Multiple Indication Multiple Construct (MIMIC) that treat error terms from the indicators might yield different output.
- iii. An increase in the number of latent variables considered in the study, thus the variables of academic mindset, motivation, perseverance and engagement might be increased for evaluating students' performance in Economics.

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APPENDIX I
UNIVERSITY OF ILORIN, ILORIN, NIGERIA
FACULTY OF EDUCATION
DEPARTMENT OF SOCIAL SCIENCES EDUCATION
MEASURES OF STUDENTS NON-COGNITIVE ATTRIBUTES

Dear Respondent,

This instrument is designed to help the researcher obtain information from you for purely an academic research purpose. It consists of five sections. Information provided by you shall be used strictly for academic research purpose and treated with utmost confidentiality.

Thank you for being part of this research work.

Yours faithfully,

The Researcher

Informed Consent

I agree to participate in this study. I understand my participation is voluntary and that my name will not be associated with my responses. By signing below, I acknowledge that I am not been forced to participate in the study.

Participant's signature _____ Date _____

SECTION A: DEMOGRAPHIC PROFILES

Instruction: Please tick (✓) as appropriate and as honest as you can in the following items.

1. Gender: Male (), Female ().
2. Age Range: 12-14 (); 15-17 (); 18 and Above ().
3. School Type: Public (), Private ().

SECTION B: ACADEMIC MINDSET SUB-SCALE

Instruction: Please respond to each statement of this scale by ticking (✓) the most appropriate option that represent your opinion among SA-Strongly Agree, A-Agree, D-Disagree, and SD-Strongly Disagree

S/N	ITEMS	SA	A	D	SD
1.	I feel comfortable in Economics class				
2.	I feel respected in Economics class.				
3.	I feel like I belong in Economics class.				
4.	I feel like I can be myself in Economics class.				
5.	I can do well on Economics tests, even when they're difficult.				
6.	I can master the hardest topics in Economics.				
7.	I can earn an A or top grade in Economics.				
8.	I can meet all the learning goals my Economics teacher(s) set.				
9.	What we learn in Economics class is necessary for success in the future.				
10.	Working hard in Economics class matters for success in my future.				
11.	Economics class teaches me valuable skills.				
12.	Economics class gives me useful preparation for what I plan to do in life.				
13.	MY intelligence is something about me that I can't change very much.				
14.	I can really do much to change my level of intelligence				
15.	I can learn new things, but I can't really change how smart I am.				

SECTION C: PERSEVERANCE SUB-SCALE

Instruction: Please respond to the following 8 items. Be honest – there are no right or wrong answers.

S/N	ITEMS	Always	Often	Sometime	Never
1.	Setbacks don't discourage me.				
2.	I finish whatever I begin.				
3.	I am a diligent student.				
4.	I see myself as a hard working student.				
5.	I often set a goal but later choose to pursue a different one.				
6.	I have difficulty maintaining my focus on projects that takes more than a few weeks.				
7.	New projects sometimes distract me from previous ones.				
8.	I lost interest in ideas that preoccupied me				

SECTION D: ACADEMIC ENGAGEMENT SUB-SCALE

Instruction: This is not a test. The scale contains statements about things you do in school or at home in relation to your academic work. There are no right or wrong options. Think of how well each statement described you and put a tick (✓) against the appropriate option.

S/N	ITEMS	All of the Time	Most of the Time	Some of the Time	On Occasion	Never
1.	I pay attention to lesson delivery in Economics class					
2.	When I am in Economics class I often act as if I am concentrating even when I am doing otherwise					
3.	I follow the school rules					
4.	I get in trouble at school					
5.	I feel happy in school					
6.	I feel bored in school.					
7.	I feel excited by the work in school					
8.	I like being at school					
9.	I am interested in the work at school					
10.	My classroom is a fun place to be					

11.	When I read a book, I ask myself questions to make sure I understand what it is about					
12.	I study at home even when I don't have a test					
13.	I try to watch TV shows about things we are doing in school					
14.	I check my schoolwork for mistakes					
15.	I read extra books to learn more about things we do in school					

SECTION E: ACADEMIC MOTIVATION SUB-SCALE

Instruction: This section contains statements about things that motivate you toward academic related tasks. There are no right or wrong options. Think of how well each statement described you and put a tick (✓) as appropriate as possible by the option.

S/N	ITEMS	SA	A	D	SD
1.	I really feel that I am wasting my time in school.				
2.	I once had good reasons for going to school; however, now I wonder whether I should continue.				
3.	I can't see why I go to school and, frankly, I couldn't care less.				
4.	I don't know what I am doing in school.				
5.	I am in school because I need at least a high-school degree in order to find a high-paying job later on				
6.	I came to school in order to obtain a more prestigious job later on.				
7.	The desire to have a good life later on keeps me in school.				
8.	The desire to earn better salary later on keeps me in school.				
9.	I attend school to prove to people that I am capable of completing my high-school degree.				
10.	I engage in academic activities in order to feel important when I succeed.				
11.	I work hard so as to prove to people that I am an intelligent person.				
12.	Learning new things encourages me to continue my academic activities				
13.	Pleasure I experience when I discover new things that I have never seen before keeps me going academically				
14.	I engage in academic activities for the pleasure that I experience in broadening my knowledge about subjects which appeal to me.				
15.	I am still learning because my studies allow me to continue to learn about many things that interest me.				

APPENDIX II

ECONOMICS PERFORMANCE TEST (EPT)

Instruction: Please answer all the questions. Each question is followed by four response options letter A –D. Each question carries equal mark.

1. In Economics, scarcity means that.
 - a. a commodity is not available in the market.
 - b. a commodity is too expensive to buy.
 - c. our want are limited but resources are unlimited.
 - d. our wants are unlimited but resources are limited.
2. Land is different from the other factors of production because it
 - a. attracts remuneration.
 - b. is important in the production process.
 - c. is owned by individual and government.
 - d. is a free gift of nature.
3. The cost of an additional units produced is called
 - a. average cost.
 - b. marginal cost.
 - c. fixed cost.
 - d. variable cost.
4. Which of the following is not a characteristic of money?
 - a. Acceptability
 - b. Portability
 - c. Durability
 - d. Reliability
5. In a socialist economy, prices of commodities are determined by
 - a. forces of demand and supply.
 - b. producers of the commodities.
 - c. the central planning authority.
 - d. consumers who are sovereign.
6. Capital can be raised through the issue of ordinary share by the
 - a. sole proprietor.
 - b. public corporation.
 - c. limited liability company.
 - d. co-operative society.
7. Every society faces the basic economic problem because
 - a. government officials are corrupt everywhere.
 - b. government everywhere are not competent.
 - c. resources are scarce everywhere relative to want.
 - d. man is greedy everywhere.
8. The satisfaction a consumer derived from the consumption of a particular commodity is called
 - a. happiness.
 - b. utility.
 - c. saturation.
 - d. consumer surplus.

9. Which of the following theories states that the price level is proportional to the amount of money in circulation?
 - a. The liquidity preference theory
 - b. The money multiplier
 - c. The quantity theory of money
 - d. The supply of money theory
10. The demand curve faced by a firm under perfect competition is horizontal because the firm
 - a. takes the price as it is.
 - b. can control either price or quantity.
 - c. can control both price and quantity.
 - d. offers for sale a large proportion of the total market supply.
11. Which of the following cost curve is U-shape?
 - a. Average fixed cost
 - b. Total fixed cost
 - c. Marginal cost
 - d. Total variable cost
12. Which of the following is not a restriction to international trade?
 - a. Tariff
 - b. Quota
 - c. Embargo
 - d. Reserve
13. The type of market in which there is only one buyer of a product is called
 - a. perfect competition.
 - b. monopoly.
 - c. monopsony.
 - d. monopolistic competition.
14. An increase in the number of units of domestic currency needed in exchange for a unit of foreign currency is called
 - a. Inflation.
 - b. Deflation.
 - c. Devaluation.
 - d. Revaluation.
15. Which of the following is regarded as the extreme opposite of perfect competition?
 - a. Monopoly
 - b. Duopoly
 - c. Oligopoly
 - d. Monopolistic competition
16. The central Bank controls the activities of commercial banks through the following EXCEPT
 - a. bank rate.
 - b. bills of exchange.
 - c. moral situation.
 - d. liquidity ratio
17. The price elasticity of a horizontal demand curve is
 - a. Zero.
 - b. Infinity.
 - c. One.
 - d. Unity.
18. Which of the following factors of production is man-made?
 - a. Land
 - b. Labor
 - c. Capital
 - d. Entrepreneur
19. The proportion of a country's total population that is willing and able to work is
 - a. full employment.
 - b. labour force.
 - c. supply of labour.
 - d. labour efficiency.

20. A trade union can be defined as an
- a. association of market women selling the same commodity.
 - b. association of all the traders operating in a particular market.
 - c. organization of workers for the purpose of improving their members' welfare.
 - d. organization of employers of labour for the purpose of negotiating with workers.
21. The difference between a country's visible export and visible import is called
- a. balance of trade.
 - b. balance of current account.
 - c. balance of payment.
 - d. terms of trade.
22. Division of labour is limited by
- a. standardization.
 - b. extent of the market.
 - c. the use of machinery.
 - d. Specialization.
23. Personal income minus tax is equal to
- a. net domestic product.
 - b. net national product.
 - c. disposable income.
 - d. personal income tax.
24. The term 'liquidity preference' means
- a. demand for money.
 - b. supply of money.
 - c. spending of money.
 - d. investment of money.
25. The difference between the highest and the lowest in a distribution is
- a. Mean.
 - b. Median.
 - c. Mode.
 - d. Range.
26. The type of unemployment caused by a general fall in the demand for goods and services is called
- a. seasonal unemployment.
 - b. frictional unemployment.
 - c. cyclical unemployment.
 - d. residual unemployment.
27. The basic purpose of cooperative thrift and credit society is to encourage members to
- a. save and invest.
 - b. save and obtain loan.
 - c. sell farm product.
 - d. goods in bulk and distribute.
28. Which of the following is also referred to as the World Bank?
- a. International Monetary Fund
 - b. International Bank for Reconstruction and Development
 - c. International Finance Corporation
 - d. International Development Association

29. The total money value of all the goods and services produced within geographical boundaries of a country in a year is called
- gross Domestic product.
 - gross National product.
 - disposable income.
 - net National product.
30. Which of the following is an example of direct tax?
- Specific tax
 - Ad valorrem tax
 - Value added tax
 - Petroleum Profit tax
31. Which of the following is not a factor that determine the total labour force of a country
- the total population.
 - the proportion of the population available for employment.
 - the number of hours worked by each person per day.
 - the wage rate.
32. If a limited liability liquidates, the loss is borne by the
- Workers.
 - Management staff.
 - Debenture holders.
 - Ordinary share holders
33. When the utility derived from consuming a commodity is equal to the price of the commodity, the consumer utility is
- zero.
 - at a minimum.
 - at a maximum.
 - falling.
34. 'Ageing population' means
- the total number of old people in the society.
 - a population with increasing proportion of old people.
 - classifying a country's population to different age groups.
 - the age at which a population becomes optimum.
35. When an increase in price of a commodity leads to a rise in the demand of another, the two commodity
- are substitute.
 - are complements.
 - have joint demands.
 - have composite demand.
36. A debenture can best be described as
- a company profit which is reinvested.
 - dividend received by a shareholder.
 - a share which makes the holder part owner of the company.
 - a loan granted to a public limited company from the capital market.
37. For the monopolist, at all output levels, average revenue (AR)
- cuts the marginal revenue (MR) curve from below.
 - is equal to the marginal revenue (MR).
 - is greater than the marginal revenue (MR).
 - is smaller than the marginal revenue (MR).

38. A deficit budget can be used to
- curtail inflation.
 - solve balance of payment problem.
 - increase economic activities in a recession.
 - reduce money supply in the economy.
39. The method of Agriculture in which a parcel of a land is left to fallow while the farmer move to another one is called
- crop rotation.
 - shifting cultivation.
 - communal agriculture.
 - co-operative farming.
40. One of these is not a major cause of low pace of industrialization in Nigeria
- Landmass
 - Raw materials
 - Skilled labour
 - Communal labour
41. The usual method of allocating resources in a market economy is by
- queuing up.
 - rationing of goods.
 - price mechanisms.
 - scale of preference.
42. Which of the following **cannot** be classified as land in economics?
- Bauxite deposit in the ground
 - A lake used for irrigation
 - A bulldozer
 - Grazing field for cattle
43. If the quantity of men's hat demanded per week is represented by the function $Q_d = 20 - \frac{1}{3}P$, where P is price, how many hats are demanded when the price is \$9.00?
- 11
 - 17
 - 23
 - 47
44. Which of the following type of business organization is financed by the public but run by the government?
- Public limited company
 - Public corporation
 - Private limited company
 - Co-operative society
45. The operator in the chain of distribution who prepares the for sale through packaging is the
- Manufacturer.
 - Wholesaler.
 - Retailer.
 - Consumer.
46. A primary objective of the International Monetary Fund is to
- serve as banker to the government of member country.
 - grant loans to government of member countries for social and economic development.
 - assist countries which have balance of payment problem.
 - grant loans to private companies in member countries.

47. A strike embarked upon by a group of workers which is not supported by their trade union is called
- a. picketing.
 - b. black list.
 - c. wildcat strike.
 - d. lock-up
48. Which of the following factors affect elasticity of supply?
- a. Habit
 - b. How specific the factor of production is
 - c. The proportion of income spent on the commodity
 - d. How durable the commodity is.
49. The total demand by the household in a community at a particular price is
- a. market demand.
 - b. composite demand.
 - c. joint demand.
 - d. abnormal demand.
50. A civil engineer who accept to teach elementary science in a primary school because he cannot get a paid engineering job is an example of
- a. structural unemployment.
 - b. disguise unemployment.
 - c. residual unemployment.
 - d. frictional unemployment.

APPENDIX III

KEYS TO PERFORMANCE TEST IN ECONOMICS

1.	D	26	C
2.	D	27	A
3.	B	28	B
4.	D	29	A
5.	C	30	D
6.	B	31	C
7.	C	32	D
8.	B	33	C
9.	C	34	A
10.	A	35	A
11.	C	36	C
12.	B	37	C
13.	C	38	A
14.	C	39	B
15.	A	40	D
16.	B	41	C
17.	A	42	C
18.	C	43	B
19.	B	44	B
20.	C	45	A
21.	A	46	B
22.	C	47	D
23.	C	48	D
24.	A	49	A
25.	D	50	B

APPENDIX IV

UNIVERSITY OF ILORIN, ILORIN, NIGERIA
DEPARTMENT OF SOCIAL SCIENCES EDUCATION
FACULTY OF EDUCATION

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25th October, 2018.

Our Ref: _____ Your Ref: _____ Date: _____

TO WHOM IT MAY CONCERN
REQUEST FOR RESEARCH ASSISTANCE

LAWAL, Banjo Moshood (Matric.No: 16/68YS002) is a Postgraduate Student of the Department of Social Sciences Education, University of Ilorin. He is currently undergoing a Research Project on:

"Structural Equation Model of Selected Non-cognitive Variables and Students' Performance in Economics in Secondary Schools in South-west, Nigeria"

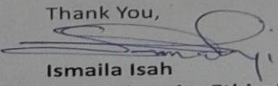
Kindly render him all possible assistance in this regard.

Thanks for your anticipated understanding and cooperation.

Head
Dept. of Social Sciences Education
Prof. Banjo M. Olawuyi
Head of Department

Professors in the Department: PROF. C. O. DARAMOLA, PROF. O. E. ABDULLAH, PROF. (MRS) F. A. O. OLASEHINDE-WILLIAMS, PROF. (MRS.) A. A. JEKAYINFA

APPENDIX V

UNIVERSITY OF ILORIN, ILORIN, NIGERIA UNIVERSITY ETHICAL REVIEW COMMITTEE		
Vice Chancellor: Prof. S.A. Abdulkareem B.Ch., M.ChE, (Detroit); Ph.D. (Louisville), MNAICH, MNSE, MACS, R.Eng. (COREN). Registrar: Dr. (Mrs) F.M. Olowoloni B.Sc (Zaria); MBA, M.Sc. PGDE (Ilorin)		E-mail: P.M.B. 1515, Ilorin uerc@unilorin.edu.ng unilorin.uerc@gmail.com Website: ethicalreview.unilorin.edu.ng www.unilorin.edu.com
<i>Our Ref:</i>	<i>Date:</i>	
UIL/UERC/16/68YS002	14 th February, 2019	
Protocol Identification Code: UERC/EDU/279 UERC Approval Number: UERC/ASN/2019/1562		
STRUCTURAL EQUATION MODEL OF SELECTED NON-COGNITIVE VARIABLES AND STUDENTS' PERFORMANCE IN ECONOMICS IN SECONDARY SCHOOLS IN SOUTH-WEST, NIGERIA		
Name of applicant/Principal Investigator: Address of Applicant:	LAWAL, Banjo Moshood Department Social Sciences Faculty of Education,, University of Ilorin, Ilorin. Full Committee Review...	
Type of Review: Date of Approval:	14/02/2019	
Notice of Full Committee Approval		
I am pleased to inform you that the research described in the submitted proposal has been reviewed by the University Ethical Review Committee (UERC) and given full Committee approval. This approval dates from 14/02/2019 to 13/02/2022, and there should be no participant accrual or any activity related to this research to be conducted outside these dates. You are requested to inform the committee at the commencement of the research to enable it appoints its representative who will ensure compliance with the approved protocol. If there is any delay in starting the research, please inform the UERC so that the dates of approval can be adjusted accordingly. The UERC requires you to comply with all institutional guidelines and regulations and ensure that all adverse events are reported promptly to the UERC. No charges are allowed in the research without prior approval by the UERC. Please note that the UERC reserves the right to conduct monitoring/oversight visit to your research site without prior notification.		
Thank You,  Ismaila Isah For: University Ethical Review Committee		
<i>"...If it's not ethical, it's not scientific, if it's not scientific it's not ethical"</i>		

APPENDIX VI

UNIVERSITY OF ILORIN, ILORIN, NIGERIA POSTGRADUATE SCHOOL

Vice-Chancellor:

Prof. S. A. Abdulkareem

B.ChE (Detroit); Ph.D. (Louisville);

MNAICH; MNSE; MACS; R.Eng (COREN)

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UIL/PGS/42

15th August, 2019

LAWAL, Banjo Moshood

Matric. No.: 16/68YS002

Department of Social Sciences Education

Faculty of Education

University of Ilorin

Ilorin.

Dear **Lawal**,

APPROVAL OF DOCTORAL RESEARCH PROTOCOL

I am pleased to inform you that, the Board of Postgraduate School at its 281st Meeting held on Wednesday, 17th July, 2019 considered and approved your Doctoral Research Protocol titled:

Structural Equation Model of Selected Non-cognitive Variables and Students' Performance in Economics Secondary Schools in South-west, Nigeria

You are therefore, to proceed with your Ph.D. programme accordingly, please.

Congratulations.

Yours sincerely,

M.A. Alfania

Secretary, Postgraduate School

MA/JB

