School Plant and Family Background as Predictors of Academic Achievement in Junior Secondary School Basic Science in Oyo State, Nigeria

Olufunke Bukola ADESINA
LCU/PG/000527

Being a M.Ed Thesis Submitted to the Department of Arts & Social Science Education, Faculty of Arts and Education, Lead City University, Ibadan, Oyo State, Nigeria

In Partial Fulfillment of the Requirements for the Award of the Degree of Masters in Education (M.Ed) in Educational Management

2022

Certification

This is to certify that **Olufunke Bukola, Adesina** with the Matriculation Number **LCU/PG/000527** carried out this researc work titled "**School Plant and Family Background as Predictors of Achievement in Junior Secondary School Basic Science in Oyo State, Nigeria**" in the Department of Arts and Social Sciences Education, Faculty of Arts and Education, Lead City University, Ibadan, Nigeria under my supervision. This has not been previously submitted.

_____ _____

Prof. Donald A. Odeleye **Date**

Supervisor

_____ _____

Prof. Ileuma **Date**

Head of Department

Dedication

I dedicate my project to the Almighty God who started this work with me and saw me through it, thank you for the guidance, strength, wisdom, power of mind and skills to come up with this project. To Him alone be glory, honor and praise forever. Amen!

Acknowledgement

First and foremost, special thanks go to God Almighty for His Sovereignty and Sustenance at the inception and conclusion of this programme.

I will also like to appreciate Lead City University, Ibadan, and the management team in Lead City University for their scholarly assistance. The university is truly a unique ivory tower, standing out among equals!

My special appreciation goes to my supervisor – Prof. Donald A. Odeleye, I will also like to acknowledge Prof. Afolakemi Oredein (Dean of Post Graduate College), Prof. Ileuma (Head of Department for Social Science), Prof. P. O. Yara, (Head of Department for Science Education), Dr. O. Oyedeji, Dr Killian, Dr Obi, Dr Ayantunji, Dr. Sam-Kayode O., Dr Ebo and all other highly distinguished lecturers in the Faculty of Arts and Education. You all impacted me greatly!

With a grateful heart, I also thank my research colleague Mrs Ojo, Mrs Babalola, Mr Demola who through our team spirit assisted me to finish. I sincerely appreciate various school authorities for their cooperation towards the success of this work. I also appreciate the respondents and my Research Assistants who sacrificed so much during data administration and collection period.

Finally, I appreciate my wonderful husband Mr (ACA) Adesina Adeyemi for his all-round supports and encouragement. I also owe gratitude to my lovely children for their inspirations and countless sacrifices (Prevail, Progress, Praise, Precious and Purity). More so, I must not forget Pastor Dr Aliyu Taiwo a Measurement and Evaluation Expert, who out of his tight schedule availed himself for my work and Dr Yusuf, who encouraged me often in order to finish this work, even Kenny who by all means released his material resources to assist me on this work. I will not forget to mention Miss Sangodare, one of the former teachers in Bright Future College, who introduced this school to me. Indeed, you have contributed greatly to the success of this project. I love and thank you all.

Even though the above persons and institutions have assisted in the completion of this thesis, I alone stand responsible for the errors if any found in the work.

Abstract

This study investigated the School Plant and Family Background as Predictors of Achievement in Junior Secondary School Basic Science in Oyo State, Nigeria. Three research questions were raised and answered and two hypotheses were formulated and tested to guide the study. Study population include all junior secondary schools. Sample of 1000 students were used and data was analyzed using descriptive statistics, chi-square, regression and t-test statistics used. The research instrument for data collection were both questionnaire and Basic Science Achievement Test (BSAT). The Cronbach Alpha reliability estimate obtained was 0.76 for (SPFBQ) and KR_{20} of BSAT was 0.82. the results show that school plant variables are adequately available for used with grand mean of 2.77, 2.89, 2.70, level of availability of school plant variables and students family background status have significant impact on academic achievement of students in Basic Science with x2 =3650.0, p< 0.05 and x2=2298.81, p <0.05 respectively. Classroom facilities explained 33.5% relative contribution to students academic achievements. Also, parental educational explained 71.0% parental income explained 60.1% relative contribution to academic achievement of students. With exception of family size that had no relative significant contribution. Both school plant and family background variables accounted for 17.4% variations when taken together with (R^2= .174 and $F_{(2,998)}$= 7.511, P< 0.005). it was concluded that school plant variables for Basic Science teaching are adequately available. The school plant and family background variables used in this project have effects on academic achievement of students in Basic Science. It was recommended that education stakeholders should increase the availability of school plant facilities in schools and parents should note their educational status has effect on academic of students in school.

Keywords: School Plant, Family Background, Achievement, Basic Science Achievement Test (BSAT)

Word Count: 297

Table of Contents

Chapter One

Introduction

1.1 Background to the Study

Globally, academic achievement in any educational settings is important for the measurement of educational progress of a country. Academic achievements of students in various formal and non-formal education contexts, as well as institutional achievements, serve as a significant criterion for assessing education performance of any country at the micro level, indicating success elements for that country. Identifying the factors that influence academic achievement is a research study that has been conducted all over the world over the years and has revealed that academic achievement is influenced by a small variety of factors, some of which are school-specific while others can be considered outside the school factors.

Academic achievement is a metric used to assess student's performance at all levels of education[1].Exam performance is widely used to measure academic achievement. It is the degree to which a student has achieved his or her academic goals. Classes passed or failed, as well as marks obtained in exams and competitions, might be used as performance indicators. Academic achievement refers to a student's, teacher's, or institution's achievement of an educational goal overcome time. This is measured either by examinations or continuous assessments and the goal may differ from one individual or institution to another. It is a phrase used in school to describe a student's academic success. Academic achievement has been seen to be a direct result of learning. It's the most appropriate indicator that someone has learned anything. As a result, achievement in related tasks must be demonstrated for learning to be observed[2]. Despite the fact that learning is the most important factor in academic success, low achievement does not always signify inadequate learning. It is possible to learn a task and then perform poorly on it because other factors, in addition to the learning process,

can influence academic task achievement[1]. This study looks at both learning process variables and other factors that influence student academic attainment.

A variety of factors can influence students' achievement. These variables may be classified into two categories: in-school and out-of-school[2]. The qualifications of teachers, availability of instructional materials, class size, relevance and appropriateness of the curriculum, management, and school leadership situation, teachers' motivation and commitment, and the conduciveness of the school compound for the smooth running of the general teaching-learning process are all factors that may affect the academic achievement of students in the school. Qualified teachers, facilities such as adequate and conducive classrooms, textbooks and furniture, curriculum relevance, infrastructure, learning process (monitoring and evaluation), and adequate funding, all have a significant impact on the achievement of the educational objective and enhancing students' academic achievement[2].

School plant variables are one of the in-school factors that might influence children's' academic performance. The totality of resources that constitute a school's learning environment is referred to as the school plant. The school plant is the physical embodiment of the school's programs and activities[3]. a deliberately created and regulated environment within the school that aids in the promotion of teaching process and learning activities School plants are made up of the systems and structures that each educational institution must have to function properly and fulfill the goals for which it was created[4]. School plant variables, also include the school's fixed and mobile structures and materials, such as classroom buildings, laboratory equipment, furniture, chalkboards, and audio and visual aids[3]. The terms "school plant" and "school facilities" have been used interchangeably. Classrooms, libraries, workshops, labs, equipment, energy, water, desks, seats, audio-visual and visual aids, bathrooms, and storage space are all examples of school facilities systems that would likely stimulate students to learn. However, in this study, school plant variables are interpreted as

school facilities. Learning occurs more effectively and quickly in a school setting with high-quality buildings, accommodations, furniture, and equipment than in one without all of these elements[4]. The majority of secondary school buildings designed to encourage and enhance teaching, learning, and extracurricular activities are already obsolete[3].

The deplorable situation in Nigerian schools is exacerbated by the fact that enrolment increases without corresponding school expansion or provision of necessary facilities[3,5]. In truth, the quality of teaching and learning in schools is a factor in students' academic success. Academic accomplishment is critical in developing the highest-quality future students who will serve as outstanding leaders and manpower for society, and who will be responsible for meaningfully contributing to society's long-term economic and social development[12,13]. Over the years, Nigerian applicants in public secondary schools have had a dismal performance in National Examination and West African Examination Council outcomes. Meanwhile, academic failure in an aspect of the individual life can ruin the future of such an individual[2]. The academic achievement and study habits of the students determine the destiny of that person. The students who have a conducive environment for learning are more likely to excel than those with a poor environment.

The conditions, adequacy and relevance of school plants have a direct impact on the student’s academic achievement. School plants apart from protecting secondary school students from sun, rain, heat, and cold, also provides a learning environment that has a great influence on comfort and safety for everyone within the school premises[5]. The school plant as suggested by this study is school facilities such as classroom, laboratory and library facilities.

In most of the secondary schools, there are dilapidated classrooms which have affected the learning condition of students especially during the raining season when there was heavy wind, students would be so afraid to stay in such classroom and if at all such students stay, his or her mind would not be at rest, hence would lead to disturbance and

distraction. Even during the dry season when there is too much of sun, the classrooms that do not have ceiling will affect the brain of the learners because of the too much of heat. Since the academic achievement of students depends on school plants, the management and maintenance of school facilities are so important which will provide the most continuous and suitable teaching and learning process for the learners[5].

Bad classroom illumination, noise, poor air quality, and poor building conditions are all factors that contribute to poor performance. Building conditions had an impact on student achievement since it was observed that students do better in well-built buildings than in badly designed and equipped buildings[6]. Classroom design is another important criterion that might help students obtain good outcomes[6]. As a result, well-planned and organized school facilities with a supportive and calm environment are required to allow this high degree of teaching and learning processes.

Every school library in the world has the same goal. One of the most important services in the school system is the library (primary, secondary and tertiary). The existence of a library at a school helps to speed up the execution of educational programs, allowing for the achievement of educational goals and objectives[4,8]. Having a functional school library allows students to have more reading chances, which improves their knowledge, writing abilities, reading skills, and clarity of expression[8]. Curriculum is dynamic, libraries assist both students and teachers in school by keeping them informed about new developments in education[8].

Meanwhile, research has indicated that library service is strongly linked to academic achievement among students. Provision of library services improved students' use of the library[8]. He asserted that students cannot gain information just through classroom instruction, and that they must study library books (even online) to supplement what their teachers have taught them. Consistent usage of library resources is connected to student intellectual growth[7]. Because it is more easy for pupils to obtain reading materials from the school library, the

library is supposed to meet their information demands. Furthermore, there is a link between library information resources and learners' learning outcomes[9]. The value of a library cannot be overstated; therefore, the library makes a significant contribution to students' academic achievement in college. The utilization of a school library may have a great influence on how well students do in class. The school library provides material for both educational programs and the development of students' reading abilities and learning habits[7,8&9].

The science laboratory has a direct effect on both students' attitudes and academic achievement according to the instructional theory of learning interaction. A laboratory, is a place or structure used for scientific investigation, experimentation, and testing[3]. Thus, a laboratory is a space designed for conducting scientific research and development as well as analysis. A study examined the adequacy of laboratory facilities and academic performance in basic sciences and find out that science laboratory facilities are not adequate to cater for the population of the students[7].However, availability, accessibility and userbility of laboratory facilities directly influence students academic achievement. Non availability or sufficient school facilities like laboratory, labrary are not in place in the institutions of learning may cause a rafle effect on teaching and learning process in the school[3,4&7].

Although availability of school plant or school facilities alone is not sufficient condition for good performance; it is clear that schools which are better equipped with adequate provision of plant facilities and other in school provision are more likely to produce a higher level of learning and motivation among the learners as compared to others. The primary goal of providing school plant and facility equipment is to meet students' educational requirements; nevertheless, school plant and facility equipment must be related to the curriculum and other outside issues[3].

Most schools in developed parts of the world have increased their use of suitable school plants over time[6]. Achieving academic success ensures that citizens are skilled and

vibrant. In many cases. It's worth noting that a student's academic achievement is influenced not just by their school related factors but also by their home or family background[10]. As a result, the government, stakeholders, educational administrators, and even parents should look at what they can do to restore educational settings to their former grandeur so that future generations can achieve their goals.

Also, on the other hand, factors such a: family background of students that is a parental expectation and amount of work being assigned for a student by his/her parents, educational background and health condition of students as well as their families are expected to have an impact either positively/negatively as far as the academic achievement of the student is concerned. Furthermore, sociological variables such as basic categories of socioeconomic class, family structure, sibling structure, and religion may be regarded variables that impact students' academic achievement outside of school[11].

In many elements of a child's existence, the family is essential. If a child is born, he is initially exposed to a family before any interaction with the outside world in a family where parents and children live together. The family background of a child plays an important role in a child's growth and development. The environment in which a child grows up determines what he inherits from nurture. Two factors that affect performance of students, are home-related and school-related factors[11]. Majorly the home-related factors affect the students because charity begins at home and these home-related factors include the educational status of parents, family size and parental income status factors. As we all know that children learn a lot from home, so that is why when we are saying something about education family cannot be left out. The size of the family in which a child grows affects his intellectual development. In a large family, a child may not be given maximum attention, especially on his academics because the family needs and challenges are numerous to be attended to[12]. Homework, school fees, Parent Teacher Associations, and other issues may be inconvenient for parents who are

responsible for a large number of children, but youths in a small family are properly cared for and perform well in their academic endeavors[13]. Even the children from the polygamous family may be denied the opportunity of not going to standard school or not going to school at all due to the financial predicament while the children from monogamous families may allow the opportunity of attending a standard school to have a better academic future[14].

Various research has demonstrated that there is a link between parental participation and children's academic achievement. It was discovered that the problem of achievement is not a simple on, and that it necessitates a great deal of attention[15]. It was also discovered that high and low achievers had different motivations, interests, abilities, and so on. It was discovered that parents from higher socioeconomic backgrounds are more involved in their children's education than parents from lower socioeconomic backgrounds and that this involvement fosters more positive attitudes toward school, improves homework habits, lowers absenteeism and dropout rates, and improves academic achievement[16]. As a result, some of the links between students' outcomes and their parents' backgrounds are likely due to differences in family income and involvement in school-related activities. If this is the case, measures to boost parental involvement may be an effective way to improve educational outcomes and reduce achievement gaps across students from different socioeconomic backgrounds[17].

Parents are naturally entrusted with the teaching and development of their children. This is in line with sociologists' widespread argument that education may be used as a tool for cultural change that starts at home[18]. It is reasonable to believe that parents's economic status has an impact on their children's intellectual achievement in school, as observed[14]. Anything that affects a child's development environment may have an impact on their education or attitude toward schooling. One of the most crucial criteria in this regard is

parental status. When a woman's nutritional health improves, her young children's nutrition improves as well[19] .

The academic status of the parents will help in achieving greatly in the academic achievement of the children, especially when the parents are well read they would not want their children to be illiterate, they will even want them to become better persons in future than them and their homework will be attended to perfectly and correctly because the parents of such children are educated compared to parents that are not lettered[13,15,20]. Likewise, the kind of exposure the children have at home and the environment that the children are been brought up will determine their achievement in their academics pursuits. For instance, if the children are brought up in a well conducive and peaceful environment, they will be able to concentrate on their studies and there will be no challenge in the aspect of finance, the educational goals of such a child will be maximally achieved[21].

Parents' involvement in their children's education, in addition to the social structure, boosts the rate of academic success of the children[7,22]. This research tries to uncover and investigate parental characteristics that influence the quality of students' academic performance. The main goals of this study are to determine the impact of parental/family background on students' academic achievement, to determine the impact of parents' educational status or qualifications on students' academic achievement, and to determine the relationship between parents' attitudes and their children's academic achievement[16].

Income, mother's and father's education, family size, teacher regularity, teachers' passion in the subject, and students' interest in co-curricular activities were found to play a significant impact in determining academic success of students[23]. Furthermore, as determinants of students' academic achievement[14,16] emphasized the importance of students' interest, study habits, course perceptions, and peer impact. In addition, when looking at the link between parental involvement and secondary school students' academic achievement,

researchers looked at the correlation between communication between children and parents about school activities and plans, high expectations and inspirations from parents, parenting methods, and academic achievement[24]. These factors may or may not be related to the influence of parents' backgrounds. Above and beyond the other demographic factors, the effects of home background status are still prevalent at the individual level[17]. The students' family background can be deliberated in several of ways; it is most often calculated by looking at parental education, parental occupation, parental income, and facilities used by individual parents separately or collectively[25]. Parental education has positive correlations with the students' quality of achievement[12]. Education is the best legacy that a country can offer its citizen. A nation that wants to develop should emphasis on education, because it is the only way to a brighter future, and many challenges have been facing education nowadays which have made it impossible to get a positive result.

Since family size is the total number of members in a family. So, if the family is monogamous, the rate of parents' concentration on the children in that family will be highly great compare to a polygamous family that have large numbers of members whether rich or poorise difficult to give full attention to, which may jeopardize the academic achievement of such students in that type of family[14]. Large family size may lead to these challenges: rowdiness in the family which can pose challenges to the reading habit of the students in that type of family, mal-nutrition also is part of what that can affect the brain or intelligent quotient of the students, another one is in-adequate attention by the parents, lack of training which parent suppose to offer any child from home which can later affect the future progress of the students[14]. The academic achievement of students in the school depends on the type of family they hailed from either divorced parents, step parents, re-married parents which aave a great hazard on the academic future of a child[14,26].

These important factors which have not been emphasized are loss of job of the bread-winner and the death of the parents. The loss of job of the bread-winner in the family can greatly affect the academic pursuit of the children in the family, because the child that has been exposed to quality education before when things are going on smoothly in such family may later experience low or no education at all in the future[27]. The death of any parent can lead to sending the child to a less privileged school and which can mar the future of that particular child[16].

Science has been defined as a body of information developed by scientists, whereas science education builds on the knowledge and skills obtained by students for comprehend scientific principles, rules, and theories[28]. The emphasis on science teaching and learning is on ensuring that teachers not only teach science procedures but also provide perceptual learners with opportunities to understand scientific concepts. Learners' "hands" and "minds" must focus on scientific tasks in order for them to be able to learn actively and participate in knowledge production[28].

Basic science, sometimes known as Integrated Science, is a junior secondary school subject offered in both public and private schools[29]. The fundamental purpose of teaching basic science is that it broadens students' understanding, allowing them to grasp the interconnectedness of science courses. Furthermore, the beneficiaries may learn how to solve scientific issues in a common approach[28]. According to the Nigerian Science Teachers Association. Nigerian Integrated Science, also known as Basic Science, should teach students to: Observe attentively and completely; Complete and accurate reporting; Organize the information you've gathered; Make generalizations based on the facts you've gathered; As a result of the generalization, make a prediction; Construct experiments (including controls, were necessary to check the prediction); When appropriate, use models to describe occurrences; If fresh evidence contradicts forecasts, continue the investigation process[28]. To

achieve the stated goals, it is recommended that while teaching and learning Basic Science, all parameters impacting students' achievement be recognized, including school plants such as classroom buildings and facilities, availability of well-equipped science laboratories, and library facilities, among others. And it should include the utilization of cutting-edge teaching techniques such as discovery, problem-solving, open-ended field trips, and the laboratory method, among others[30].

Furthermore, the National Policy on Education provides that Basic Science is supposed to be presented in such a way that the child: I. Gains the concept of fundamental unity of science (Physics, Chemistry and Biology); II. Gains the commonality of approach to problem-solving of scientific nature; III. Gains an understanding of the role and fu nction of science in everyday life and the world in which he/she lives. From the above, basic science serves as the gateway to the study of single science subjects, which provides a solid foundation for the learning of the specialized scientific discipline like physics, chemistry, and biology[29]. Hence, a child who is not well-grounded in basic science at the junior secondary school level may see the core science subjects as bitter pills to swallow. Thus, students' poor performance in basic science at the junior secondary school level may lead to many junior secondary school students developing a negative attitude towards core science subjects at the junior secondary school level, which in turn will affect students' admission into tertiary institutions to study science and science-related courses[29]. One is compelled to ask the extent to which integrated science departments have contributed to this present concern about the general fall in the standard of education in Nigeria.

The quest for Academic achievement for national development is one of the reasons schools are set up. It is in schools that the curriculum is implemented to achieve the set educational goals and objectives of the nation[30]. These goals and objectives are to be achieved through teaching and learning of school subjects which Basic science education

happens to be one of such subjects[28,31]. To this end this need for the adequate provision and consideraion of the influencing factors such as classroom, science laboratory facilities and library facilities Parents' educational status, parental income status and family size. Many facilities are required for the successful implementation of basic science curriculum. It worth to note that the science laboratory which is place where anybody can experiment and explore patterns, ideals and practical work is been done on science[31]. This laboratory gives the students advantages to discover science phenomena through the real act. The activities that are done in the laboratory make the students to visualize, manipulate and reason[3]. Well equipped basic science laboratory will help in minimizing the rate at which the students fail basic science nowadays. However, availability of accesible library facilities with the online access are all the factors hinged students academic success.

Apart from all the factors mentioned above, parental involvement in students' education is one of the most researched and debated factor education factors fessionals that contributed towards academic performance of students said that the parental level of involvement affects the quality of academic achievement of students[29]. This factor is the most of the factors that have affected academic achievement of students a lot, because when there is no money, parents will not be able to cope with payment of school fees of their children, therefore it will affect the progress of the students, many of them would not be able to continue with their education[32]. Even the kind of life the parents live will actually have either positive or negative effects on the students. Presently the researches that focus on the how the link and gap between the two major agents of education and effective curriculum implemetation that is the home (paretal factors) and the school (school related factors) are imperative than ever. To this end this study set to examine the relative and joint influence of school plant particularly classroom facilities, science laboratory facilities and library facilities and family background like Parents' educational status, parentalincome status and family size.

1.2 Statement of the Problem

Academic achievement of students has long been a source of concern for many educational stakeholders. The masses' general view is that student academic achievement is low, and it should be mentioned that a country's educational goals are usually tied to its difficulties, requirements, demands, and goals. The design of educational spaces is one of the significant variables in new education, and one of the unobserved factors impacting academic achievement of secondary school students is the school plant. In new education, factors affecting academic achievement of students are not limited to school's plant but also family background of the students, and all play a key role in quality of educational activities of students, as dynamic and living factor. Students achieving poorly in academic may affect them, their parents, and the country as a whole, especially among school-aged children, and impede achievement. School architecture and its component aspects, including as colour, lighting, sound, equipment, and other considerations, may have major influence on learners and students when viewed in a systematic manner[2,31&32]. On the other hand, this research work focus on school plant (classroom, library and Basic Science laboratory facilities) as the key effect of educational attainment which can be effective in internal efficiency of students. In fact, family background such as educational status of parent, income status and family size as an integral element determining academic achievement has great impact on the morale and behavior of students affecting strongly their mental and emotional states. Furthermore, it has been proven that students' backgrounds have an impact on their emotional balance and educational mindset.[33,34]. It contends that inadequate attention to children's academic work by parents and guardians as well as having the dual activity of teaching and learning in poor school environments contribute to poor academic performance of students[35,41]. A study present robust evidence that students' family background, proximity of home to school, level of training/professionalism attained by teachers, as well as school structure greatly determine

how students perform in their institutions[36,37&41]. This research work find it necessary to include library and laboratory facilities for a more robust work on effect of school plant on students academic achievement. However, research conducted on how family background influences students achievement by considering education, financial status and family structure (single parent) [13,38,39,40]. The combination of school plant and family background variables is a uniqe research that needs attention in the recent age. It is on this note that this study was conducted to examine 'school plant and family background as predictors of academic achievement of junior secondary schools students in Basic science in Oyo State, Nigeria'.

1.3 Aim and Objectives of the Study

The main objectives of this study is to examine school plant and family background as predictors of students' academic achievement of Junior Secondary students in Oyo State, Nigeria specifically the study sought to:

i. to assess the level of availability of school plant (classroom, science laboratory and school library) in junior school Basic Science in Oyo state, Nigeria.
ii. to identify level of family background (educational status of parents, family size and parental income) on academic achievement of junior secondary schools in Oyo state, Nigeria.
iii. to determine the level of academic achievement of junior secondary students in Basic Science in Oyo state.
iv. to investigate combined influence of school plant variables (classroom, science laboratory and school library) and family background variables (education status of parents, family size and parental income) on academic achievement of junior secondary schools in Oyo state, Nigeria.

v. to investigate relative influence of school plant variables (classroom, science laboratory and school library) and family background variables (education status of parents, family size and parental income) on academic achievement of junior secondary schools in Oyo state, Nigeria.

1.3 Research Questions

Based on the stated objectives, the following research questions were answered inthis study:

1. What is the level of availability of school plant (classroom, science laboratory and school library) in junior school Basic Science in Oyo state, Nigeria?
2. To what extent is the level of family background (education status of parents, family size and parental income) on academic achievement of junior secondary school schools in Oyo state, Nigeria?
3. What is the level of academic achievement of junior secondary students in Basic Science in Oyo state?

1.5 Hypotheses

The hypotheses stated below were tested at 0.05 level of significance

H01: There will be no significant combined influence of school plant variables (classroom, science laboratory and school library) and family background variables (education status of parents, family size and parental income) on academic achievement of junior secondary schools in Oyo state, Nigeria.

H02: There is no significant relative influence of school plant variables (classroom, science laboratory and school library) and family background variables (educational status of parents, family size and parental income) on academic achievement of junior secondary schools in Oyo state, Nigeria.

1.6 Significance of the Study

The goal of this study was to examine 'school plant and family background as predictors of achievement in junior secondary school Basic science in Oyo State, Nigeria'. It also intended and see if there was a relationship or correlation between a parent's financial situation, social class, and their children's academic achievement. The findings of this study are expected to be used as a teaching tool for the people of Oyo State and Nigeria as a whole.

The findings will also be extremely valuable to the federal government and educational authorities in order to improve the quality of life for its citizens and to successfully prepare for all educational objectives.

This study will help parents understand how significant their responsibilities are in shaping their children's backgrounds by re-evaluating their roles in their children's upbringing in order to truly involve their children's academic accomplishment endeavors.

It w ill also provide parents insight into why their children do badly in school, as well as how to encourage both their children and teachers to persist and not give up on their own efforts.

Furthermore, this study will emphasize parents' engagement in their children's academic performance in order to teach them that a child's academic success is not just dependent on cash, teachers, or social amenities, but also on their own efforts.

This research will benefit a wide range of individuals, including parents, who will learn about the importance of family history in shaping their children's academic success.

The study will also aid future researchers in the subject by providing literature to back up their claims, resulting in increased understanding. To the school administration, in order to educate them about the essential variables in the children's family backgrounds, so that they can deal with or pay greater attention to those issues that may have a detrimental impact on the students' academic achievement.

1.7 Scope of the Study

This study would be limited to school plant and family background as predictors of achievement in junior secondary school Basic science in Oyo State Nigeria. The study would focus on school plant variables: school buildings, Science laboratory and school library. It will also focus on family background indices; Parents' educational status, financial status and family size of public Junior Secondary Schools in the various Local Government Areas in Oyo State would be used for the study.

1.8 Limitations of the Study

This study experienced some constraints in the course of field work such as time constraint. limitation that may be encountered during the field work is the problem of validity and reliability of both the test and questionnaires. In order to handle this problem the researcher will work hand in hand with the supervisor in adopting BECE Basic science question and designing questionnaires for the students and employ pilot studies which will take into consideration samples that will not be part of the proposed samples to be used for the study and use reliability statistics of Cronbach Alpha to test the reliability and validity of the questionnaires before administering them to the total sample size of respondents that will be involved in the study.

1.9 Operational Definition of Terms

Academic Achievement: This refers to the extent to which a student, teacher or institution has achieved their short or long- term educational goals.

School Plant (Classroom, Science Laboratory and Library): These are fixed and mobile structures and materials in the school such as classroom buildings etc.

Classroom Buildings: These are tangible structures which serve as shelter for educational activities.

Science Laboratory: This is a place where anybody can experiment and explore patterns, ideals and practical work is been done on Basic science.

School Library: This is as the whole stock of books and other resource materials in aschool.

Family Background (Educational Status of Parents, Parental Income and Family Size): This refers to all the conditions and circumstance in the child physically and emotionally.

Family: This is the first and the smallest and the most important unit of a child's social organization.

Educational Status of Parents: This means the educational attainment or level of education of parents and this affects academic achievement negatively or positively.

Parental Income: This is the combined measure of an individual or families economic position relative to outers based on income.

Family Size: This is the total number of members in a family.

Basic Science: Basic science, sometimes known as Integrated Science, is a junior secondary school topic that is taught in both public and private institutions to provide pupils with a science base.

Endnotes

1. O. Akrofi, *Academic Achievement of Primary School Pupils: Investigating Home Environment Factors Contributing to Low Academic Performance,* **E-Journal of Humanities, Arts and Social Sciences (EHASS)**, 1(2), 2020, 49-57.

2. M. A. Geremew,*Factors that Influences Students Academic Performance: A case of Rift Valley University, Jimma, Ethiopia*. In G. D. Abdissa (Ed). Ethiopia: **Journal of Education and Practice**. 6, 2015.

3. V.O. Sam-Kalagbor, *Perceived Influence of School Physical Facilities on Students' Academic Performance in Public Secondary Schools in Rivers State*,**International Journal of Innovative Social & Science Education Research**, 9(1), 2021, 46-59.

4. B. Peter, T. Alberto, S. Tigran, A. Diego, & M. Ustinova, *The Impact of School Infrastructure on Learning A Synthesis of the Evidence*. **International Bank for Reconstruction and Development / The World Bank. 1818 H Street NW, Washington, DC 20433, 2019.**'

5. A. S. Evans & K. M. Julius, *The Relationship between Study Habits and Academics Achievement of Students*. **International Journal of Educational Administration and Policy Studies,** 7, 2017.

6. P. B. Boma: *School Plant and Academic Performance of Senior Secondary School Students.* J.U. Williams (Eds). **International Journals of Innovative Psychology and Social Development**. 6, 2018.

7. N. O. Joy: *Impact of School facilities on Students Academic Performance in Public Secondary School,* 2017.

   Barbara, O. Dianne, *IFLA School Libraries Standing Committee: The IFLA School Library Guidelines.* (Eds) Netherlands: IFLA Publication , 2017.

8. I. Marcus: *Effective Selection and Organization of Information Resources in School Library.* **International Journal of Library** (Eds): UK:1, 2017.

9. L. Ngesu & A. F. Atieno. Influence of Home and School Based Factors on Pupils Academic Performance at Kenya Certificate of Primary Education in Makadara Sub-County, Nairobi Count. *International Journal of Trend in Scientific Research and Development (IJTSRD).*Vol. 3, No. 3, 2019.

10. F. Ogunshola & A.M. Adewale, "*The Effects of Parental Socio-Economic Status on Academic Performance of Students in Selected Schools in Edu Local Govt. Area of Kwara State Nigeria,"* **International Journal of Academic Research in Business and Social Sciences,** vol. 2, no. 7, 2017, pp. 1-10.

11. V. J. Shute, E. G. Hansen, J. S. Underwood & R. Razzouk, "A Review of Relationship between Parental Involvement and Secondary School Students' Academic Achievement," **Education Research International,** *2017, pp. 1-10.*

12. A.O Odok & R. E. Ella: *Influence of Family Size and Family Type on Academic Performance of Students.* Ella (Eds). Calabar: **IJHSSE Publications.** 2, 2017.

13. O. Akrofi."*Academic Achievement of Primary School Pupils: Investigating Home Environment Factors Contributing to Low Academic Performance"*. **E-Journal of Humanities, Arts and Social Sciences (EHASS).** 1, 2, 2020; pp. 49-57.

14. L. Ngesu & A. F. Atieno. *Influence of Home and School Based Factors on Pupils Academic Performance at Kenya Certificate of Primary Education in Makadara Sub-County, Nairobi Count.* **International Journal of Trend in Scientific Research and Development (IJTSRD).** 3,(3), 2019.

15. F. Ogunshola & A.M. Adewale, "*The Effects of Parental Socio-Economic Status on Academic Performance of Students in Selected Schools in Edu Local Govt. Area of Kwara State Nigeria,*" **International Journal of Academic Research in Business and Social Sciences,** 2 (7), 2017, pp. 1-10.

16. M. Tsinidou, V. Gerogiannis & P. Fitsilis, "*Evaluation of the Factors that Determine Quality in Higher Education: an Empirical Study," Quality Assurance in Education, .* 18 (3), 2017, pp. 227-244.

17. S.O. Michael, "*Restructuring U.S. higher education: Analyzing models for academic program review and discontinuation,* 21 (4), 1998, pp. 377- 404.

18. M. Daniyal, T. Nawaz, M. Aleem & A. Hassan, *"The Factors Affecting the Students' Performance: A Case Study of Islamia University of Bahawalpur, Pakistan,*" **African Journal of Education and Technology,**. 1 (2), 2017, pp. 45- 51.

19. A. M. Adeyemi & S. B. Adeyemi, "*Personal Factors as Predictors of Students' Academic Achievement in Colleges of Education in South Western Nigeria*," **Academic Journal,** 9 (4) 2017, pp. 97-109.

20. V. J. Shute, E. G. Hansen, J. S. Underwood & R. Razzouk, *"A Review of Relationship between Parental Involvement and Secondary School Students' Academic Achievement,*" **Education Research International,** 2017, pp. 1-10.

21. M. M. Capraro, R. M. Capraro & B. B. Wiggins, "*An Investigation of the Effect of Gender, Socio-Economic Status, Race and Grades on Standardized Test Scores," Paper Presented at the Meeting of the Southwest Educational Research Association, Dallas, TX,* 2017.

22. S. J. Caldas & C. L. Bankston, *"The Effect of School Population Socio-Economic Status on Individual Student Academic Achievement,*" **Journal of Educational Research,**. 90, 2017, pp. 269-277.

23. A. S. Evans & K. M. Julius: *The Relationship Between Study Habits and Academics Achievement of Students.* **International Journal of Educational Administration and Policy Studies.** 7 , 2017.

24. M. Tsinidou, V. Gerogiannis & P. Fitsilis, "*Evaluation of the Factors that Determine Quality in Higher Education: an Empirical Study," Quality Assurance in Education,* 18, 3, 2017, pp. 227-244.

25. T.S. Bajah , *Teaching Integrated Science Creativity, Ibadan University Press,* 1993.

26. K.E. Adenegan: *Setting Basic Sscience Laboratory in Schools and Basic Science Laboratory:* 8 , 2020.

27. P. B. Boma & J. U. Williams: *School Plants and Academic Performance of Secondary School Students.* (Eds). **International Journals of Innovative Psychology and Social Development.** 6 , 2018.

28. N. O. Joy: *Impact of School Facilities on Students Academic Performance in Public Secondary School,* 2017.

29. F. Ogunshola & A.M. Adewale, "*The Effects of Parental Socio-economic Status on Academic Performance of Students in Selected Schools in Edu Local Govt. Area of Kwara State Nigeria,*" **International Journal of Academic Research in Business and Social Sciences,**. 2 (7), 2017, pp. 1-10

30. V.E. Ndum & R.N. Udoye. "*Investigating Parents' Socio-Economic Background and Academic Performance of Business Studies. Academic Paper,* 2021.

31. J.U. Ovansa, *Effect of Socio-Economic Status on the Academic Performance of Junior secondary School Students (A Case Study of Public Junior secondary Schools in Adavi L.G.A of Kogi State).* **International Journal of Education and Evaluation,**. 3 (8), 2017.

32. M.S. Farooq, A.H. Chaudhry, M. Shafiq, & G. Berhanu, G., *"Factors Affecting Students' Quality of Academic Performance: A case of Secondary School level", Journal of Quality and Technology Management* 7 (2): 2017, pp1-14.

33. N.E. Hill, O.R. Castelino, & J.E. Lansford, "Parents Academic Involvement as Related to school Behaviour Achievement and Aspiration: Demographic Variations Across Adolescence", Child Development 75 (5): pp 1491-1509. 2018.

34. M. Abbas & R. Nazir. *"Impact of Socio-Economic Status on Academic Performance of Students,* (A Case Study of Bahawalpur)". Journal of Economics and Economic Education Research, 21, (2), 2020.

35. Y.K. Saylor, *Fundamental of Research Methodology and Statistics. New Delhi:* **New Age International** , 2017.

36. N. Ukpong. *Administration of School Business: A Planning Approach. Boston: Ally and Bacon, Inc. See Discussions, Stats,*2020.

37. N.M. Masanja. *Essentials in Higher Education Administration in a Period of Economic Constraints.* **Bakatsina Journal of Education,** 2019.

38. B.M. Bello, *Educating Border Dwellers to Promote Peace and Security in an Electoral Process: Perception of Community Members'* **Journal Pengabdian Kepada Masyarakat: Teknologi dan Aplikasi ,** 2020.

Chapter Two

Literature Review

The review of the related literature for this study was carried out under the following subheadings: conceptual framework, theoretical framework, review of empirical studies and summary of literature review.

2.1 Conceptual Review

2. 1. 1 School Plant Facilities

i. School Plant and Students' Academic Performance

ii. Classroom Facilities and Students Academic Achievement in Basic Science

iii. Science laboratory Facilities and Students Academic Achievement in Basic Science

iv. Library Facilities and AcademicPerformance in Basic Science

2.1.2 Family Background

i. Parental Education Level and Academic Achievement in Basic Science

ii. Parental Income Background and Students Academic Achievement in Basic Science

iii. Family Size and Students Academic Achievement in Basic Science

2.2 Theoretical Framework

2.2.1 Theoretical Framework on School Plants

- System Theory
- Production Function Model

2.2.2 Theoretical Framework on Family Background

- Parental Attachment Theory
- Good Parenting Theory

2.3 Review of Previous Empirical Works

- Review of Previous Empirical Works on School Plant
- Review of Previous Empirical Works on Family background

2.4 Conceptual Framework

2.5 Summary of Literature Review

2.0 Conceptual Review

2.1 Conceptual Review on School Plant Facilities

The material resources given for staff and students to maximize their efficiency in the teaching and learning process are known as school plant facilities. Plants in the classroom are an essential need in the educational system, and their presence increases instructors' teaching abilities as well as students' academic achievement. Education is critical in any community, and Nigeria is no exception. It is the process through which an individual's talents and capacities are developed. Physical, emotional, social, and intellectual abilities are examples of these qualities. The sum of resources that constitute a school's learning environment is referred to as the school plant. The physical manifestation of the school's programs and activities is referred to as the school plant[1]. It is the school's purposefully created and regulated environment that aids in the promotion of teaching and learning activities. School plants are made up of the systems and structures that each educational institution must have in order to function properly and fulfill the goals for which it was created[2]. This definition shows that school plant includes both consumable and non-consumable items, as well as permanent and semi-permanent buildings in the school environment that are required for successful curriculum implementation. The school landscape, which includes trees, grasses, lawns, hedges, and accompanying paths, is divided into two subgroups[3]: security facilities, which include walls, gates, alarm systems, phones, and visitor books; and (ii) security facilities, which include walls, gates, alarm systems, phones, and visitors books. (iii) services such as power, piped water/boreholes, and transportation. (iv) instructional materials such as computers, chalkboards, chalk, charts, flannel graphs, beakers, burettes, pipettes, test tubes, thermometers, weighing scales, maps, glass jars, globes, and so on. (v) office equipment such as filing cabinets, generators, typewriters, and photocopiers (vi) sporting facilities such as football fields, table tennis courts, and basketball courts, (vii) classroom/educational

equipment such as chairs, desks, tables, chalkboards, dusters, wash-hand basins, napkins, chalk (viii) structures such as classrooms, administrative blocks, libraries, laboratories, health blocks, kitchens, examination halls, dining halls, assembly halls, clinics, rest rooms, toilets, hostels, store, staff rooms, workshops, and (ix) play grounds such as football, volley ball, basketball, and badminton, tennis court, swing slide Classroom furniture, such as student seats and tables, as well as buildings and playgrounds, are just as significant as any other school plant. The two former (classroom and educational equipment and structures) are, on the other hand, extremely important in the teaching-learning process[4].

School plant and facilities are described as "physical and spatial facilitators and enhancers of teaching and learning[5]." Classrooms, libraries, farms, gardens, laboratories, workshops, offices, stores, school buildings, staff quarters, chairs, tables, text books, magazines, journals, pictures, filmstrips, charts, bulletin board, posters, cartoons, school museums and archives chalk-board, play fields, and other school plant facilities are included in secondary school education. Permanent buildings, semi-permanent structures, temporary structures, mobile structures, collapsible structures, boat schools, and even structures under the shade of trees are all available in Nigeria[3]. He asserted that the goal of school plant and facilities development in primary education is to increase school attendance, motivation and to improve academic performance of students. The key components of both direct and indirect aspects in the learning environment are school facilities. The school's plant and infrastructure, he claims, are materials created to serve certain objectives. She cited the need for plant and facilities in schools to provide opportunities for firsthand experience, experimentation, and demonstration; for specific investigation, to provide diversity of thought; for observation and inquiry for the development of scientific attitudes and skills, to protect the individual, provide comfort, and illustrate concepts; and for observation and inquiry for the development of scientific attitudes and skills, to protect the individual, provide comfort,

and illustrate concepts[5]. It was argued that in an educational setting such as secondary schools, school plant and facilities such as furniture, laboratory equipment, and materials have an undeniable impact on the teaching and learning process because without them, no matter how appealing, empty buildings and structures cannot be used for educational purposes[5]. As a result, school plant and facilities are unquestionably an important component of instructional design without which students' academic progress would suffer. With time, the notion of a functional plant for school buildings has matured and extended. The word "school plant" refers to the school's immovable construction. It consists of a school building, a playground, a classroom, a dormitory, a library, apparatus and equipment, a blackboard, and stores, among other things[6]. While school facilities are moveable structures which are also designed to promote teaching and learning effectiveness.

2.1.1 School Plant Facilities

2.1.1.1 School Plant and Students' Academic Achievement

School Plant: The school plant is the sum total of building, equipment, textbook including the surrounding where teaching and learning takes place. The school plant includes all permanent and semi – permanent structures in the school.

2.1.1.2 Academic Achievement is the measurement of student achievement across various academic subjects. Teachers and education officials typically measure achievement using classroom performance, graduation rates and results from standardized tests.

Everything about a child's early life implies that the child's psychosocial and intellectual environment should be as engaging as possible in order to maximize a student's intellectual growth and smooth psychosocial adjustment. As a result of the above, it was expected that, just as everything about students is currently changing at a rapid pace, so must school plant and facilities in education. Secondary education, like all previous levels of

education, may be viewed as an open system that accepts inputs from the environment, converts or processes them, and then returns the inputs to the same environment[6]. The conversion process, as well as the outcomes, will be problematic if the inputs are inadequate or substandard. At this point, it can be claimed that, just as a system's output is proportionate to the input available for processing, a school's academic achievement is a function of the resources available in various subject areas[6].From a researcher education is having two parts: "inputs" and "outputs."The fact that inputs are people and material resources, while outputs are the results of the educational process[7].The inputs and outputs form a dynamic organic whole, and that the impacts of one component on the other must be investigated if the educational system is to be investigated and assessed in order to enhance its performance[7]. Examining the plant and facilities provided for learning experiences is a powerful measure for evaluating educational standard and quality. More frequently than not, the overall emphasis of educational development programs is on quantitative difficulties. How many schools should be built, and how many instructors are required to educate the students within the predicted time frame and budget? However, the availability or lack thereof of physical facilities and the entire milieu in which learning takes place has a direct bearing on the quality of education our students get[6]. Furthermore, after the quantity of the student population to be serviced has been determined, it is critical to focus on the quality of the school plant and facilities that will be supplied for them[6]. Although the availability of school facilities and equipments is not a necessary prerequisite for exceptional performance, it is cleared that schools with adequate equipments and facilities are more likely to give a higher level of learning and motivation among students than those without. The primary purpose of supplying school plant and facility equipments is to suit the educational needs of children; nonetheless, school plant and facility equipments must be curriculum-related[7]. There is a clear correlation between instructional resources and student academic achievement[8]. Schools

with better resources performed better than schools with fewer resources. The quality and quantity of these resources (school plant) have been identified as critical factors influencing students' achievement[6,9]. The relevance and applicability of these learning materials to the local context are critical to achieving national objectives and aims, materials school plant is classifying as "didactic" that encourage educational programs[10].

One of the most important problems preventing successful performance in secondary schools is a lack of school infrastructure[7]. The primary goal of the school plant is to create the best possible environment for successful teaching and learning. The best environment for learning is one that is supportive and responsive, allowing learners to interact freely with one another and with the subject matter, and that in such an environment, students will not require extensive reward or punishment because they will learn naturally through their own activity[8]. Following primary school, secondary school is the next level of education.Secondary school as an intermediary between elementary school and college where general, technical, vocational or college preparatory courses are usually offered[4]. Because secondary school students' academic achievement is influenced partly by the classroom setting, its availability, management, and upkeep are critical. For the comfort and convenience of both staff and students, contemporary schools require appropriate classrooms, libraries, recreational facilities, assembly halls, school farms, staff rooms, and offices.

The type, conditions, adequacy, and relevance of the school plant have a direct influence on learner engagement; school plant as the physical manifestation of the school's programs and activities[6]. It is a deliberately constructed and managed environment with the goal of attaining educational goals inside the school. The school plant and educational goals should be considered as intimately linked and interdependent for effective teaching and learning settings[9]. The function of school plant generally is to provide the most suitable environment for effectives teaching and learning. An assertion that a supportive and

responsive environment, which permits the learners to interact freely with one another and with the subject matter, is best for learning and that in such an environment, students will not need extensive reward or punishment as they learn naturally through their own activity secondary school is the stage of education that follows primary school[10]. Secondary school as an intermediary between elementary school and college where general, technical, vocational or college preparatory courses are usually offered[11].

Although teaching and learning do not take place exclusively in schools, the importance of classroom and educational equipment and buildings, such as a spacious and well-ventilated classroom, in the proper implementation of school curriculum and effective delivery of class instruction, cannot be overstated in a formal school setting[12,13,14]. The latter kind of school plant (playground) is undoubtedly required to support the school's co-curricular activities. As a result, it is reasonable to conclude that the importance of school plant variables such as school building, science laboratory facilities, and library facilities in the implementation of the curriculum are not mutually exclusive, and that all of these variables contribute to and link together to form a relationship that influences students' academic achievement in Basic Science in Secondary Schools[14]. For effective teaching and learning situations, school plant and educational goals should be viewed as being closely interwoven and interdependent[15]. School plant, apart from protecting students from sun, rain, heat and environment has tremendous impact on comfort and safety for everyone within the school premises. To this end the study conceptualized the links and relationship among classroom facilities, science laboratory facilities and library facilities and how it influence academic achivement of Basic Science Students In Secondary Schools.

2.1.2. Classroom Facilities and Students Academic Achievement in Basic Science

School structures, such as workshops, dormitories, staffrooms, assembly halls, and classroom equipment, are thought to have a significant impact on student enrolment and academic achievement. School plants are essential in the educational system, as they increase teachers' teaching skills and students' academic achievement. School buildings should be designed with enough space, ventilation, lighting, humidity, and temperature[12]. Poor school infrastructure has been identified as one of the most significant barriers to effective secondary school performance[6],[12]. views school plant as operational inputs of every instructional programme. Also, the school plant is made up of the environment, facilities, equipment, and buildings[7]. For the comfort and convenience of both staff and students, modern schools require appropriate classrooms, libraries, recreational facilities, assembly halls, school farms, staff rooms, and offices. The nature, circumstances, suitability, and relevance of a school's physical environment have a direct impact on students' attitude towards learning; The school plant is defined as the physical manifestation of the school's programs and activities. It is a purposefully constructed and managed environment with the goal of achieving educational goals inside the school[7].

A more understanding of the link between student and teacher health and performance, as well as school buildings. This study backed up earlier studies and findings[10,14,15,16]. The relationship between building condition and student accomplishment. indicates that there is a beneficial association between the state of the school and the health and performance of students and teachers. The difference in achievement scores of students in buildings rated as being in good or poor condition reflected this link. The disparity in student performance varied from 3% to 17% [6,16,17,18,20].Another reason for not finding a relationship between classroom condition and student achievement might reside in how the researchers establish the school classroom numbers for comparison purposes. Normally, the achievement test scores of students in classrooms assessed as being in poor condition are compared with test

scores of students in satisfactory schools to determine any significant differences. Therefore, all of the school buildings in the population need to be assessed to determine their condition, as far as being either good or poor. The classroom buildings assessed in each study normally contain a numerical score that is assigned to each building as a result of the rating instrument.

In this modern technological world, the quality of available facilities and resources in the classroom has an impact on the entire educational setup, particularly the teaching-learning process and administrative activities[9]. Classrooms must be brightened and decorated with multi-colors, lawns, swimming pools, grounds, and other facilities so that students' interest in learning and teachers' interest in teaching can be increased[19]. Natural light and well-ventilated classrooms, as well as clean, airy classrooms, have a positive impact on students' learning[11]. Planting in schools and planning grounds maintain a normal temperature in the school[12]. Classrooms must be well-planned, spacious, airy, well-ventilated classrooms with proper lights, fans, black/whiteboards, chairs, and benches so that the quality of the teaching-learning process can take place and academic improvement can be ensured.[13]. The quality of the classroom either inhibits or aids the teaching-learning process since students' concentration and attention to learning increase in new, well-designed, and pleasant constructed buildings, resulting in excellent academic grades[14]. With the newly renovated school facility, students' learning performance has increased[15]. Classrooms require adequate desks, networks, labs, performance areas, practice spaces, and other facilities; these facilities must be adequately spacious, safe, and well-equipped[16]. Science labs, cafeterias, ICT laboratories, art rooms, libraries, examination halls, electricity, water, toilets, common rooms, guesthouses, playgrounds, and other such facilities must be provided to use for the development and enhancement of the school, as well as the quality of teachers and students.[17]. A well-facilitated classroom improves students' outcomes[18]. Classrooms and its facilities, which include ventilation, lightning , classrooms, toilets, and fresh drinking water facilities,

as well as libraries, offices, laboratories, and other materials and infrastructure, are very helpful in improving the educational system by motivating teachers and students to participate in the teaching-learning process[19]. All educational facilities and materials must be available in the classroom[20]. School buildings are meaningless and useless without educational resources, as students will not be able to demonstrate better academic achievements or teachers will not be able to demonstrate better teaching performance.

2.1.3 Importance of School Plant on Academic Achievement of the Students

Many researchers have shown the obvious relationship between school plant and curriculum, which in turn affects effective teaching and learning. The impact of the physical environment, in which teaching – learning takes place, is very important. The reasons for this are not far-fetched and include:

1. School plant helps improve students' performance in achievement tests (WAEC,NECO, JAMB, SAT etc).
2. School plant improves attendance and reduces dropout rate.
3. School pant improves student's attitude to learning.
4. School plant increase teaches retention rate.
5. It boosts teaching effectiveness.

2.1.4 Student Performance in Achievement Tests

Learning is a complex activity that puts student's motivation and condition to the test. It has been a long held assumption that curriculum and teaching only have an impact on learning. However it is becoming apparent that the physical conditions of school can influence students' achievement. A study found on 2nd grade students in standard school buildings scored higher as measured by the comprehensive test of basic skill than did their

counterparts attending class in sub-standard facilities. They also found that air conditioning, absence of graffiti, condition of labouratories, classroom furniture correlated with students' achievement at a significant level. In Nigeria, analysis of the WAEC and NECO exams results show that students in well equipped schools (mainly private and urban) do better that those in poorly equipped schools (mainly public and rural). It can be concluded that technologies and adequate school plant better equip students for success in achievement tests.

2.1.5 Students Attitude to Learning

Factors of the school plant that affect behavior and attitude are known as ambient environmental conditions. These factors include temperature, ventilation, lighting, colour and noise level. These elements produce comfort and Irritation, either of which can affect behavior of school students. The attitude of students is often driven by how they perceive the surroundings, including their physical environment. Annoyed students often become disciplinary problems for example: The thermal environment of classrooms can be very important to the well being of children. Temperature levels have been found to have a significant impact upon attention span of students.

Interior factors such as lighting and aesthetic features can affect student behavior and influence disciplinary referral rates. Evidence exists that florescent lighting may increase stress level and hyperactivity more so than full spectrum or incandescent lighting that students in classrooms without adequate ventilation had more negative attitudes than children exposed to natural light. A researchers have suggested that educators can manipulate atmosphere from constricting to engaging by changing colour schemes in instructional areas.

2.1.6 Science Laboratory Facilities and Students Academic Achievement in Basic Science

Many studies have defined laboratory in various ways, yet they all lead to the same conclusion. Science should be learned by inquiry rather than dogma[23]. This will help you think more logically, critically, and independently. Science laboratories should be at the heart of scientific education in Secondary Schools[41,42]. This is a place where people participate in human activity to investigate and explain natural occurrences. Laboratories have been discovered to be a main vehicle for increasing formal thinking, abilities, and comprehension in students, hence improving the intended learning results.

Facilities from one of the potent variables that contribute to academic achievement in the school system[13]. Buildings, classrooms, laboratories, furniture, apparatuses, equipment, and other educational items are among school plant or facilities. It was explaining further that the accessibility, relevance, and sufficiency of school plant contribute to academic success. In another breakthrough[14].Students in Secondary Schools with and without adequate instructional facilities did not differ significantly. However, the instructional facilities were necessary for students' academic success in Biology, Geography, Physics, Chemistry, Basic Science, and English, but that students might achieve in other disciplines without sophisticated teaching tools. Therefore, concluded that, the effect of instructional facilities on students' academic achievement is more felt in pure and social sciences. The students' achievement was determined by exposure of students to instructional materials to subjects that required sophisticated instructional facilities which were adequate compared to other subjects and as well when they are inadequate. One of the reoccurring challenges in science instruction is huge classes. One of the goals of science education in schools is to transmit scientific knowledge and to ensure that students learn the method and abilities of science. This can only be accomplished if students are exposed to enough practical work and laboratory experimentation. Unfortunately, many secondary schools that have been built over the years still lack scientific laboratories, while others have laboratories that are inadequately

or inadequately equipped. Laboratory boosts students' attention by requiring them to participate in practical scientific tasks and experimentation on their own, laboratory experience gives students the opportunity to grasp basic skills and the scientific method[20]. Laboratories in science and other science-related courses had the impact of "seeing is believing," because students are more likely to grasp and recollect what they see than what they hear or are told. There is widespread agreement among scientific educators that the laboratory is an important part of science education, if the laboratory is the central position in science instruction, it must be equipped, and the equipment and facilities must be used appropriately during the learners' exposure to instill skills and problem solving in sciences. Well-equipped laboratories do better in certificate exams than those without[21,22]. Availability and utilization of Basic Science laboratory facilities in Junior Secondary Schools; a panacea for reform in Science Technology and Basic Science Education.

Resources or facilities are facilities that can be used to develop or enhance educational programs and encourage teaching and learning. Human or material science laboratory facilities are available. Personnel such as scientific professors and laboratory technologists or assistants fall under the category of human resources. Science laboratory facilities include text books, computers, thermometers, fire extinguishers, chalk boards, first aid kits, ovens, incubators, models, chemicals, television, and other electronic equipment available to science teachers for teaching and learning. The frequency with which current laboratory facilities are employed during laboratory experiments by science teachers to improve efficient teaching of science subjects is referred to as utilization of existing laboratory resources[30]. The laboratory's unique role in science teaching and learning. Science professors must guarantee that suitable laboratory facilities are bought and used efficiently in order for pupils to learn effectively. Laboratory experiments aimed at confirming well-known scientific concepts or rules would not always work as anticipated[30]. Teachers would

need to conduct preliminary study on laboratory activities in order to provide adequate outcomes that would satisfy the method and skill (knowledge) being transferred to the students. As a result, the teachers would need to conduct laboratory activities beforehand and make use of the available resources.

"Hands-on experience" promotes students to build a spirit of inquiry and allows them to gain scientific skills and the proper mindset to handle scientific tools and materials[26]. Because of the frequent use of laboratory equipment and apparatuses, students must comprehend not only how to conduct experiments, but also why they are worthwhile and what purpose they serve in gaining a deeper knowledge of concepts, relationships, and processes. Based on the roles of science laboratories in science teaching and learning, it follows that schools without laboratories where students can perform Chemistry, Biology, and Physics practical will produce students who lack the knowledge of science practical required by examination bodies to pass school examinations. Consequently these students will lack requisite requirement qualification for courses like medicine, engineering, agricultural science and other related career for which all involves practical aspects of practicing to obtain skills.

2.1.7 Library Facilities and Academic Achievement

School is thought to be a place where people learn. One of the most important services in the school system is the library (primary, secondary and tertiary). The existence of a library at a school helps to speed up the execution of instructional programs, allowing for the achievement of educational goals and objectives[67]. A functional school library allows students to have more reading chances, which improves their knowledge, writing skills, reading skills, and clarity of expression. Curriculum is dynamic, libraries assist both students and teachers in school by keeping them up to date on new educational developments. The school library refers to a school's total collection of books and -other useful materials. Which

includes non-print resources such as films, slides, and tapes, as well as books and journals. Material resources, such as books, periodicals, CD Roms, and thesis abstracts, and human resources, such as the librarian and support personnel, are examples of these resources. As a result, the school library is the resource center of any school. A school library is a physical and digital learning area where students' information, knowledge journey, and personal, social, and cultural growth are centered on reading, inquiry, research, thinking, imagination, and creativity. School Media Centre, Centre for Documentation and Information, Library Resource Centre, and other titles are used to describe this physical and digital location. The word "school library" is, nevertheless, the one that is most generally used to describe the facility and its functions. It is a self-development center as well as a service station. It also serves as the focal point for individual study in schools. Every tertiary institution needs a school library as a learning resource[6]. Educational colleges cannot complete their missions without the support of relevant and efficient libraries[8].

Students and instructors benefit from the library because it keeps them informed about new developments in education. Meanwhile, research has indicated that library service is strongly linked to students' academic achievement. The student intellectual development is linked to constant use of library resources[42]. Thus, library is meant to fulfil their information needs because it is more convenient for students to collect reading materials from the school library. Furthermore, library information resources are related to learners' learning outcome[41]. The importance of library cannot be underestimated; therefore library contributes immensely to the academic achievement of students in schools[67].

There are more studies on library services that have been undertaken in Africa that support the findings of the previous studies for example, looked into the relationship between library use and academic success at the University of Cape Town in South Africa. The researcher gathered the sampled students' first-year results as well as reports on their

activities in the school library. The data was gathered from students who had both good and low grades. The data was statistically analyzed, and the study's conclusions revealed that there was a strong positive association between library and academic achievement. The findings of the preceding study are consistent with who looked into the impact of library use on student success[67]. Good reading habit of students was linked to the availability of library services. The researcher used two schools to carry out the study. The first school had a library service, while the second school did not have a library. She concluded that schools with library services performed better, while school without the library service did not perform better. This showed that library service remains an indispensable service in the school system. The relationship between library service and academic achievement of students in rural areas in Uganda. The outcome of the study is that, the library service, to some extent, influenced students' academic performance[74]. It was recommended that more studies should be carried out empirically on the two variables. Exhibiting good reading can only be realized through the use of the library, the link between the library program and student achievement. Students were encouraged to be proactive in their academic pursuits through library initiatives such as online browsing[75]. As a result, the study concluded that more research on library services and academic achievement in secondary schools is required. Similarly, the ability of providing a library service to students had the potential to alter students' lives in schools. The library's support has a direct and substantial correlation with the pupils' academic success. On the relationship between school librarians and students' academic success in schools were consistent with this finding[29]. Both qualitative and quantitative methodologies to look at the evaluation of use of library in Tanzanian secondary schools.

They discovered a positive association between library services and academic achievement in secondary schools in Nigeria in their study on the relationship between library services and educational achievement[7,32]. The survey found that libraries are still an

important part of the educational system, and that a school without one cannot be considered good. Also, the researchers were of the view that more studies on the relationship library services and academic achievement of students need to be carried further. In contrast to the foregoing findings, meantime, several research had been undertaken to discountenance the conclusions of those that demonstrated a favorable significant association between library service and academic achievement in schools.

There is a negative association between library services and secondary school academic attainment. They discovered that majority of the secondary schools used for the study had antiquated and under-equipped libraries. Their data support the absence of a relationship between library services and academic achievement. They reasoned that library services in Nigerian secondary schools had been dormant for years with no attempt to resurrect them. As a result, students' negative attitudes toward using the library to study were impacted. In Malawian secondary schools, the relationship between library services and academic achievement. They concluded that there was no correlation between library services and reading development among students in Malawian secondary schools. All the above studies suggested that more studies should be carried to know whether future findings would be similar or not. It was also recommended that apart from library services, other dimensions of student personnel services should be studied. Furthermore, a negative relationship between library services and students' academic achievement they concluded that study habits of the students were bad and students' academic achievement was poor. In the light of this, the study recommended among others that study hours and library should be compulsory on the school timetable with a view to allow students to have a precise time to use the school library on a daily or weekly basis. Also, school libraries should open beyond normal school hours for the benefit of the students the relationship between library and students' learning outcome. that there was no significant relationship between library and students' academic outcome.

The situation of the libraries was bad. In the light of the findings, it was recommended that the provision of functional libraries should be provided across the schools (rural and urban) in the state. They found that there was no significant relationship of students in rural and urban secondary schools in terms of accessibility of library facilities. They recommended that provision of library facilities should be in rural and urban secondary schools in the state with a view to enhance the academic achievement of the students.

Libraries are viewed as social institutions dedicated to expanding knowledge, preserving cultural heritage, and providing information to a variety of people. Having books and other non-books available in the classroom can assist students succeed academically. The effective provision of library services in schools is dependent on the use of school library information resources. In support of the aforementioned, it was discovered that the level of satisfaction of its users with relevant library information resources, library staff, and user-centric library services is based on the provision of successful library services. The students' use of the library helps them enhance their work and class notes, as well as aid them prepare for exams. Library users use school library for many reasons, they are: for research purpose, for leisure, and some use them for to prepare for examination[35]. "Status of School Education in Present Tanzania and Emerging Issues," he argued that "pass percentage of the students had been declining continuously from 82.3 percent to 50.7 percent over the last five years, and provided many factors for the students failure in their Form Four examinations, including insufficient books in the school library, and high cost of the books when compared to the students economic situations." He also discovered that the majority of the schools lacked adequate textbooks, laboratory equipment, and infrastructure.

Library media centers had larger holdings of higher quality information resources and were staffed at higher levels (more employees, more hours). Students and staff used the resources more frequently, and library media specialists collaborated with classroom teachers

to teach information literacy curricular standards. Despite the information cited about the importance of having well-established library services in secondary school buildings, the purpose of this study is to investigate the availability and usability of such library services in impacting students' academic performance.

2.2 Family Background

In general, scientific literature treats the term “family background” a bit differently. Education research projects, monographs, and other literature sources apply the following related terms: family context – family background – socio-economic status of family – socio-economic status and home possessions of family – family configuration and processes. These terms are sometimes used as synonyms, but sometimes also as terms with different shades of meaning.

With respect to education, family background normally excludes factors such as climate in the family, interrelationships among family members, parent hopes and expectations regarding children’s education, and parenting style.

Student's performance in schools around the world has been heavily influenced by their family background. This is because, in most cases, academic success is a product of the motivation that children receive from the individuals with whom they contact in their early years of life[54], Students' educational achievement and years of schooling completed vary greatly depending on their parental origins. When compared to children from more disadvantaged families, students from less disadvantaged families had higher average test scores and were more likely to have never been pushed back a grade. They did, however, point out that it was unclear how to account for the causal effect of a child's family background on his or her educational attainment.

Children from low-income families with divorced or separated parents would fare better than average if they came from homes with good attitudes and substantial support for their children[50]. Children and youth found that family background characteristics, parental support, and teacher support all had a substantial impact on a child's educational attainment[54].

2.2.1 Family Background and Students' Academic Achievement

Without a doubt, it is essential to look at the many factors of academic accomplishment within the context of a certain home environment. Family problems, on the other hand, cannot be separated from the larger culture (example, societal values, traditions, attitudes and home environment). As a result, one of the study's applicable components is secondary school kids' performance as impacted by family structure, functions, values, and other psychological factors including parental views. The influence of important people (parents and home environment) on kids' academic achievement, for example, was identified as a key element in shaping the first constellation of adolescents' attitudes toward learning[53]. "When children are raised in a home that nurtures a sense of self-worth, competence, autonomy, and self-efficacy, they will be more apt to accept the risks inherent in learning[55].

Supported this trend and emphasized that their study "strongly suggest that parental motivational practices are causal influences on children's academic intrinsic motivation and school achievement" There was a need to instruct parents on motivational practices such as encouragement of persistence, effort, mastery of subject area, curiosity and exploration that are likely to impact on the academic performance of the student[56].

In fact, the impact of family on students' motivation and school achievement is an old issue that was stressed some years ago. Some of these studies showed that experiences with peers and family members do influence social and academic integration in complex ways[57]. The demands, for example, of family and friends outside the academic institution can limit opportunities for social integration[54,57]. Despite the fact that humans are liberally endowed

with intrinsic motivational tendencies, the evidence was now clear that the maintenance and enhancement of this inherent propensity requires supportive conditions, as it can be fairly disrupted by various unsupportive conditions[58]. Research has revealed that external negative impacts such as threats, deadlines, directives, pressured evaluations, and imposed goals diminish intrinsic motivation. Consequently the same reported that studies showed that autonomy-supportive parents, relative to controlling parents, have children who are more intrinsically motivated[59]. Factors which are present in the family contributed greatly to the performance of the students. Among these are parental educational background, income, exposure, parental relationship with each other, strength of the family population, religion, occupation etc. determine to a greater extent the readiness of the child to learn.

2.2.2 The Negative Effects of Family Background on the Educational Productivity and Attainment of Secondary School Students

The participation in education is an investment in human capital made because of the expected returns later in life. This investment in the education of children is the sole responsibility of parents, guardians or other caretakers especially if children are dependants. This investment in the education of children is beneficial to both the children and the parents in the future. The parents are expected to "weigh off the future benefits of sending their children to school against the immediate costs. Those benefits can be for the child, but also for the parents themselves, because in the absence of pension systems, children may be the old-age security."

The above being stated, it is worthwhile to also note that there are many factors militating against educational attainment and productivity of students. The socio - economic status of parents is one of the major causes that family background can affect the educational attainment and productivity of students. The socio-economic status of a family provides the

home environments and experiences that will mold a child which has a lot of effects on the children in every sphere of their lives. This also determines the academic environments and experiences of a child. The educational achievement gap has deep root; it is evident very early in child's lives; even before they enter schools. Socio–economic differences – such as health and nutrition status, home environments that provide access to academically related experiences, mobility rates, and financial assets can certainly influence academic achievements.

The above quotation from Laosa implies that children from low socio-economic families will be affected physically, socially, economically and academically more than children from the high socio-economic families. This is reflected in the following areas:

a. Health status. The socio-economic background or status of parents results in the type of medical care their children receive hence determining their health status. The health status of a child affects his/her academic performance negatively especially if the parents are from the low socio-economic status. A rural community where nutritional status is relatively low and health problems are prevalent, children academic performance is greatly hindered. The health and nutritional status and condition of a pregnant woman form the developmental environment of an unborn child and determine the brain or intellectual development of the child. This will show in the comprehension and educational alertness of the child as he or she grows up to maturity and passes through the different levels of education. Whatsoever affect the development environment of children would possibly affect their education or disposition to it. Parental status is one of such variables. When a woman's nutritional status improves, so too does the nutrition of her young children.

b. Parental occupation. Parents whose job barely feeds and take care of the family hardly spare funds to invest in their children's education. Some that struggle to send their children to school find it difficult to fully be involved in and support the educational activities of their children. The involvement of parents in the school progress of their children. The report admits that "there is a strong relationship between social class and parental involvement. The higher the social class, the more parental involvement was evident. This implies that, the lower the socio-economic class, the less parental involvement and support will be evident.

c. Poverty. Many families are struggling with poverty. Some parents are jobless while others are local traders, laborers, messengers, cleaners, farmers etc who most of the times have periodic income which makes them to live below the poverty line. Such families are living from hand to mouth, i.e. all their struggle is afford what to eat, any other issue like health, and education etc is a secondary issue. Families living under this condition find it difficult to sponsor their children's education, the poorer are people's circumstances the more difficult it is assumed to be to support a child's educational development. Families that struggle with poverty majorly struggle with material or resources deprivation. This affects the level and extent to which parents will be involved in the educational pursuits of their children.

2.2.3 Parental Education Level and Academic Achievement in Basic Science

The effective learning involved partnership of students, teachers and parents[60,]. As a result, parents' educational levels impact not just parent-child learning interactions, but also the need for aid at home, which often comes at the price of keeping children in school[82]. Parents with less formal education may be unfamiliar with school terminology, restricting their capacity to promote learning and engage in school-related activities[83]. Parental knowledge, views, values, and aspirations regarding child upbringing are influenced by

parental education, and a number of parental behaviors are indirectly associated to children's school achievement[84]. A high level of education may help parents become more active in their children's schooling as well as learn and model social skills and problem-solving tactics that are beneficial to their children's academic achievement. Thus students whose parents have higher levels of education may have an enhanced regard for learning, Positive abilities, beliefs, a stronger work orientation and they may use more effective learning strategies than children of parents with lower levels of education[23]. Parents' positive value attached to education is a function of their educational achievement, courtesy of their vision and aspiration[53]. Families with higher educational levels are likely to be more permissive and less strict in parenting, while parents with lower educational attainment use coercive strategies for discipline which in turn predisposed their children to antisocial and abnormal behavior, such children perform poorly in the lower grades[85].

In all nations, the degree of education of parents has an impact on their children's academic success. Students whose parents have a post secondary degree of education do much better in science, reading, and arithmetic assessments than students whose parents had very basic training[79]. Thus, average grades attained by children with well-educated parents ranged from 70% higher than those gained by students with less educated parents in impoverished nations to 45 percent higher in most industrialized countries throughout these three fields. Despite the fact that the majority of the work on parents' education focuses on their direct, beneficial impact on achievement, the evidence also implies that it has an impact on the parent's attitudes and actions, leading to positive outcomes for children and youth[62, 84]. The parents of moderate to high income and educational background held beliefs and expectations that were closer than those of low-income families to the actual performance of their children, Low-income families instead had high expectations and performance beliefs that did not correlate well with their children's actual school performance. Research on

parenting also has shown that parent education is related to a warm, social climate in the home. Mothers' education and family wealth were key indicators of the home's physical environment and learning experiences, but that only mothers' education predicted parental warmth[84]. The home environment moderated the relationship between family income and parents' education and children's academic success[64]. Maternal education had a larger mediation impact than family income. As a result, these authors hypothesized that schooling may be connected to distinct home accomplishment behaviors. The mother education had the most consistent direct impact on children's cognitive and behavioral results, as well as some indirect impact through a cognitively stimulating home environment. However, they only looked at two of the family mediators, learning stimulation and adopting effective.

If additional parent actions and attitudes were studied, mediation may have appeared. The reviewed of 18 papers involving 5,831 school-aged students based on a rigorous review of educational, psychological, and sociological literature[88]. As a result, they came to the conclusion that students' ability and accomplishment are more directly connected to the home's socio-psychological environment and intellectual stimulation than to parental socio-economic status indicators like profession and educational attainment.

2.2.4 Parental Income Background and Students Academic Achievement in Basic Science

What More than Parental Income?

This paper argues that given the amount of research on intergenerational mobility and the focus on family background, it is somewhat surprising that relatively little research has been devoted to exploring sibling correlations in income. Sibling correlations are used as overall measures of the impact of family background and community influences on individual outcomes. While most correlation studies show that siblings are quite similar in terms of future achievement, we lack specific knowledge of what it is about family background that

really matters. Studies on intergenerational income mobility show that parental income matters to some extent, but they also show that more than half of the family background and community influences that siblings share are not even correlated with parental income. This paper is based on a data set that contains rich information about families in order to explore what factors in addition to parental income can explain why siblings tend to have such similar outcomes.

Even within educational studies, the concept of financial background utilized differs greatly. Socioeconomic background is represented by the index of Economic, Social, and Cultural Status, which is a composite score derived by principal components analysis and is comprised of the International Socioeconomic Index of Occupational Status; the highest level of education of the student's parents, converted into years of schooling; the PISA index of family wealth; the PISA index of home educational resources; and the PISA index of possessions related to 'classical' culture in the family[89], Family history can be analytically separated into at least three distinct components. financial (physical), capital (family income or wealth), human capital (parent education), and social capital are the three types of capital. Although there is some debate over the magnitude of the influence, the link between a student's family income and their educational achievement appears to be long-lasting and significant. The OECD determined, using PISA data, that "although many disadvantaged students thrive in school, socioeconomic status is associated with considerable variations in performance in most countries and economies that participate in PISA." By huge percentages, advantaged students outperform their underprivileged peers'[14]. The relationship's intensity ranges from extremely strong to moderate in each of the participating nations, but it does exist in each of them. In Australia, students from the top quartile of socioeconomic status perform at a level that is around three years higher than those from the bottom quartile[15]. The extent of this link has changed little during the 15 years of PISA data currently available, and

the gap between advantaged and disadvantaged pupils has remained unchanged for the past 50 years since the Coleman Report was published. What is the mechanism that allows these effects to spread? Despite all of the research, the ongoing difference between advantaged and disadvantaged students reveals that it is still unclear how socioeconomic position affects student achievement. Some argue that the links between socioeconomic position and educational success are quite moderate, and that the advantages of SES are minimal when cognitive aptitude or previous achievement are taken into account. Cognitive ability is thought to be an inherited trait, with schools having only a minor influence on its outcomes[16]. Much of the body of knowledge, particularly that derived from large-scale international studies, appears to be at odds with this logic. Others have argued that students from low socioeconomic level homes are at a disadvantage in schools because they lack an academic home environment, which influences their academic success at school. Books in the home, in particular, have been found to be one of the most powerful elements on student accomplishment in several large-scale international studies spanning many years. Parents with a higher socioeconomic standing are able to provide financial assistance and home resources for their children's personalized learning from the start. They are more likely to provide a stimulating home environment to encourage cognitive development since they are more likely to have a higher degree of education. Parents from higher socioeconomic background may be able to provide their children with more psychological support by creating situations that facilitate the development of abilities needed for academic achievement. The issue of how school-level socioeconomic background effects achievement is also of interest. Clearly one way is in lower levels of physical and educational resourcing, but other less obvious ways include lower expectations of teachers and parents, and lower levels of student self-efficacy, enjoyment and other non-cognitive outcomes[17]. There is also some evidence that opportunity to learn (particularly in Basic Science) is more restricted for

lower socioeconomic students, with 'systematically weaker content offered to lower-income students so that rather than ameliorating educational inequalities, schools were exacerbating them'. One of the greatest concerns of educational sociology has been to see whether students' of socio-economic background would bear any relationship to the measures of achievement. Thus, the study examine the concepts of parental income level as regards economic index and social capital for the socio index.

2.2.5 Parental Income Level

Family income refers to wages, salaries, profits and any flow of earnings received[87]. Income can also come in the form of workers compensation, pensions, interest or dividends, royalties or family financial assistance. Income can be looked at in two terms i.e. relative and absolute[82]. Absolute income is the relationship in which 24 income increases, so will consumption but not at the same rate. Relative income dictates a person or family's saving and consumption based on the family's income in relation to others. The investment perspective, family income enables families to invest in cognitively stimulating materials and experiences, thereby providing a better learning environment such as better schools, nicer houses and safer neighbourhood, better medical care, all of which serve as valuable resources for children's development[67]. Therefore, children's success is affected not only by the transmission of biological endowment from their parents but also by the available resources that their parents invest in them. Also in determining access to education by children, family income is found to be an important factor. This is because there are many costs associated with schooling and educational process ranging from school fees, uniform and P.T.A. fees.

Family income allows families to invest in cognitively stimulating materials and experiences, resulting in a better learning environment, such as better schools, nicer houses and safer neighborhoods, and better medical care, all of which are valuable resources for children's development[87]. As a result, children's performance is influenced not only by their

parents' biological endowment, but also by the resources that they have available to spend in them. Family income is also discovered to be a significant influence in shaping children's access to schooling. This is due to the numerous costs associated with schools and the educational process, which include school fees, uniforms, and P.T.A. fees.

In terms of their children's educational attainment, there is a direct link between parental financial and human capital and their children's effective learning experiences[76]. He did emphasize, however, that while both of these elements are essential drivers of children's educational achievement, there is still a significant amount of variation in educational success that cannot be explained just by these variables this disparity by referring to "social capital," which mediates the relationship between parents' financial and human capital on the one hand, and their children's development on the other[76]. A study of low-income minority households found that moms with higher education had higher expectations for their children's academic accomplishment and that fathers with higher education had lower expectations for their children's academic achievement, these expectations were related to their children's subsequent achievement in Math and reading[76].

Researchers studying African family processes, particularly single-mother households[88], have paid close attention to the economic deprivation perspective. Fifty percent of African female-headed households live in poverty, making them the continent's poorest demographic. The proponents of the economic deprivation perspective stated that the possible impacts of single parenting are attributable to the absence of the economic resources generated by the missing parent, rather than the physical absence of one parent. When income is statistically controlled or when families are matched on income level, the effects of marital status on child well-being are minimized. Parents who lost their jobs were more likely to reject their children and that their children were at risk for developing feelings of inadequacy associated with parental rejection. However, the empirical research on the effects of income

has not been adequately tested nor has it consistently supported these assumptions for African children[90]. The limitations and small effect sizes found by family structure studies, as well as the income perspectives, led many researchers to criticize both approaches for several reasons[78]. The major flaw in pathological studies was not the harsh facts that described a large number of African families, but the failure to investigate how these families managed to survive in such difficult circumstances[78]. Single motherhood reduces family economic resources because non-custodial fathers contribute far less to their children's household than they would otherwise. In fact, only a small percentage of children with non-custodial fathers receive any kind of child support, and it's usually extremely minimal. Single motherhood increases the time children must spend doing housework and working for pay by reducing income and necessitating more paid work by mothers, which may negatively affect educational achievement and progress[11]. Family income had an impact on children's educational goals, peer status, neighborhood quality, life stability, and family insecurity, all of which could influence child outcomes[17]. Furthermore, because single mothers are unable to take advantage of the work/home specialization given by two-parent households, child care costs are frequently higher than they would be with a spouse. Another advantage of specialization is that married parents can strategically invest in human capital, which can increase the rewards from a work/home division of labor over time. Husbands and wives can take use of each other's comparative advantage in household and market production to spend more in their children than they would otherwise be in the absence of specialization.

2.2.6 Relationship between Parental Income Positions and students' Academic Achievement

The parental income position is related to students' academic performance as an average parent with a small income can only take care of a small percentage of a child's education, and such parents may only be able to pay school fees while the child is deprived of basic needs such as sandals, school uniform, a balance diet, textbooks, pocket money and so on. Child that is deprived of those needs might end up having a low academic performance in school. Poor feeding and housing resulting in overcrowding appear to handicap child academic performance. This means that such child cannot perform well academically. However, children from high and middle economic status parents are better exposed to a good learning environment at home because of the provision and availability of extra learning facilities.

The effect of parental income on children's outcome can be viewed in three ways: the correlation between parental income and children's outcome, the causal effect of parental income on children's outcome and the effect of particular policies implemented to raise the income of poor families. Despite the limitations associated with them, Mayer recommends that they are useful in highlighting changes overtime and across countries in relation to parental income and children's outcome. In her analysis, she concluded that parental income has a positive relationship on children's outcomes.

2.2.7 Parental Social Capital

Social capital theories are increasingly being employed to explain differences in academic attainment in both developed and developing countries[53,56,84]. However, it appears that the operationalization of these principles has gotten little attention thus far. It wasn't until lately that scholars began developing scales for assessing social and cultural capital. The initial attempts were made by who created and validated a 42-items social and cultural capital questionnaire, and (In press), who validated a revised version of the same scale with 35 items[90]. In the field of education, experts agree that it's critical to understand the structure of

relationships between social and educational institutions by looking at how people's diverse social and cultural experiences influence their learning and educational outcomes[16,59,80]. There is a strong link between social and cultural capital and academic achievement, according to research in the field of general education[80]. It means that those who have more of these two types of capital are more likely to succeed in school.

Social capital has also been extensively researched in a variety of sectors. It was initially defined in the literature by, who defined it as "the sum of real or potential resources associated to possession of a lasting network of more or less institutionalized mutual acquaintance and recognition ties." From a sociological and pedagogical standpoint, social capital is important. Many research papers have sprouted to investigate the relationship between social capital and other characteristics such as academic achievement. As a result, social capital has been found to be a significant predictor of academic achievement[97]. They were looking for an answer to the question, "For whom does the school bell ring?" The effect of family, school, and community on students' educational attainment was investigated[89]. They came to the conclusion that the school bell rings for students who have access to, and actively engage in, caring and guiding environments not only at home, but also with other adults at school and in the broader community. There has been a significant amount of research into the impact of social and cultural capital in students' academic success in general, and academic achievement and attainment in particular[99]. The effect of family socioeconomic status on the probability of high school students' dropping out of school. They discovered that having a higher socioeconomic status (SES) was linked to students dropping out of school. Another study looked at the impact of social capital on students' chances of graduating and enrolling in post-secondary education. They concluded that social capital had a significant impact on high school graduation and college attendance. A study to investigate the effect of social capital on promoting educational achievement among public school

students[99]. They showed that social capital (both family and community) influenced high school students' educational achievement. Conversely, students' distant relationships with parents would result in declining their academic achievement, a finding which highlighted the importance of the interplay of family and school as main sources of providing social capital[99].

The impact of social capital on students' reading abilities, as independent variables, the parent-child relationships in the household, teacher/school-pupil relationships, and parent-school relationships[100]. The findings revealed that parental academic engagement and the teacher-student interaction were both linked to students' reading ability.

2.2.8 Family Size and Students' Academic Achievement

In this case, family size refers to the entire number of children in the student's family, not just the child himself. A child's family type, whether monogamous or polygamous, has a significant influence on his or her academic success. Furthermore, the size of the family is determined by the kind of family (monogamous or polygamous). Africa, in general, and Kenya, in particular, are known for their polygamous families. Polygamous households are widespread in both well-educated and poorly-educated families[85]. It is as common among professional and management dads at the top of the occupational ladder, yet polygamy is more prevalent among unskilled employees , children from larger households do poorly than children from smaller families[102]. The children in lower birth orders do worse than those in higher birth orders, firstborns or the eldest kid benefit from a lot of attention and warmth throughout their life, which they entertain on their own. The firstborn is frequently given more attention and time[82].

Previous research into the relationship between academic success and birth order has found that there is a favorable link. On a verbal test of creativity, The firstborns and configurations of eldest and only children are much more creative than later born. First-born children had considerably higher intellectual achievement than second-born children. There

was a considerable difference in intellectual ability between firstborn infants and later born offspring[59]. Student's achievement is dependent on parental time and financial inputs; the more children in the household, the less of both inputs are available[58]. These inputs do not just include money; they also include time, attention, resource dilution, and so on, on the other hand, the children from bigger households had lower educational levels[87].

2.2 Theoretical Framework

2.2.1 Theoretical Framework on School Plant

2.2.1.1 System Theory

The system theory may be identified as the foundation for this research. A system is a collection of interconnected pieces that operate together to produce the desired results or consequences. This refers to a group of people, resources, concepts, and processes assembled to carry out a certain task or achieve a specific objective. An input, transformation process, and output make up a system, which is surrounded by an environment. The system's environment is made up of numerous factors that are external to the system. In essence, they are not input-output processes, but they have an impact on the system's goals and hence its functioning. The specifics are shown in Figure 1.

The physical conditions of a large percentage of secondary schools are not conducive to learning. There was a claim that a favorable physical environment for students in secondary schools is necessary to enhance student performance[1]. Unfortunately, some urban and rural schools lack adequate infrastructure such as classroom blocks, causing some students to learn under the shade of trees (especially the newly established ones). Rainstorms have blown off the bulk of the roofs of the classroom blocks that do exist. Other schools' classrooms have enormous flaws that need to be fixed or updated. Worse, a higher percentage of students sit and write on the bare floor due to a shortage of classroom chairs. This condition, without a doubt, will not help pupils improve their learning abilities and, as a result, their performance in class, including tests. As a result, he advised that all hands be on deck to ensure that obstacles were eliminated and that a strong solid foundation could be established for future generations[2].

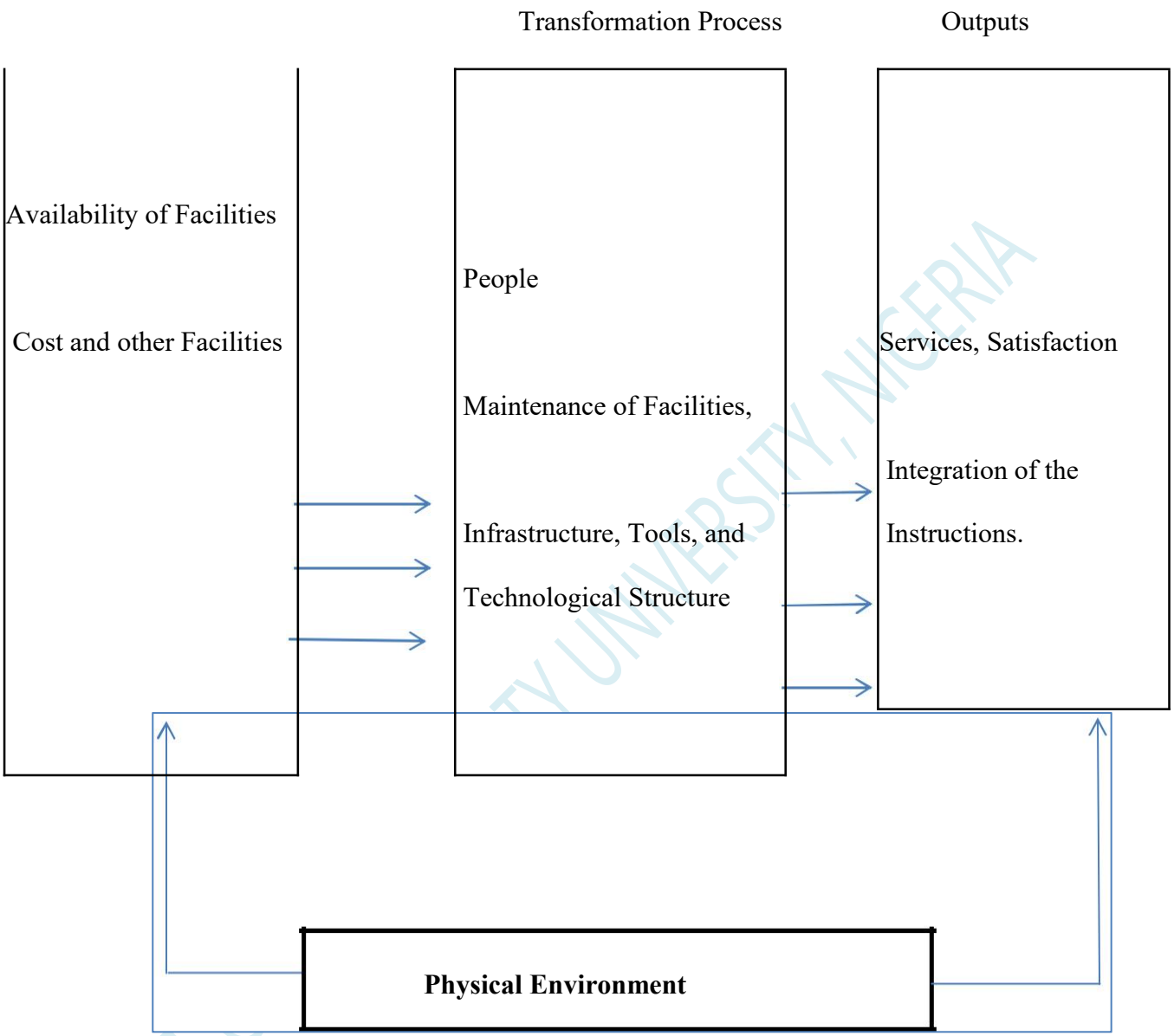

Fig. 1: System and it Environment

Source: Maes and Hootegem 2019

The efficacy and efficiency of a system are frequently assessed. The degree to which goals are met in the educational environment is referred to as system effectiveness. As a result, effectiveness is used to assess the degree to which the institution of learning has met its objectives. While efficiency refers to how a school's activities may be carried out in such a way that waste of resources is minimized in order to achieve the goals. As a result, efficiency

attempts to reduce costs and assess how efficiently resources are being utilized for the upkeep of existing facilities. This is determined by the output-to-input ratio[2].

According to the system theory, a school is a social system whose sustainability is dependent on its capacity to maintain the relative consistency of its processes and relationships within and outside the system. The capacity to keep its processes and relationships within and outside the system relatively consistent. A model of an energetic input-output system with energetic returns is used in the procedure. The outputs, in other words, revive the system. Figure 2 shows how this works.

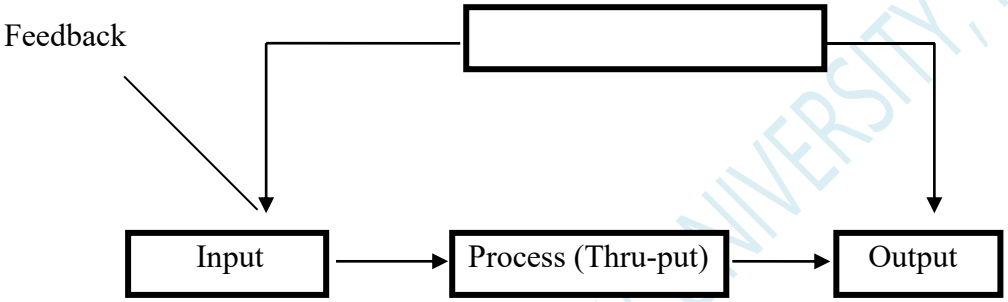

Fig 2: Input Output System

Source: Macs and Hootegem 2019

The inputs entering the system are processed within the system, and the outputs are obtained, as shown in Figure 2. Some of the outputs are transmitted to the environment, such as the school, while others return to be used as inputs.

According to the theoretical framework, the impact of school facilities on student performance plays a critical role in any school (particularly secondary schools), as it facilitates and permits seamless planning, directing, organizing, staffing, and regulating inside the school. The major goal of school facilities is to make it as pleasant as possible for students and instructors to teach and study in order to achieve excellent results. The school facilities are operated by students, academics, and non-academic employees in order to provide effective and accurate results to the society at large. In additions, it answers the

increasing needs of schools as it allows staff and students to have access to all relevant school facilities which enables them to take active role within and outside community[31].

2.2.1.2 Production Function Model

The production function model of schooling guided the research. The education production function model asserts that a school is a business that accepts inputs (students, resources, and instructors) and converts them into educational outputs (graduates) through a process. A number of experts, including its proponent James Coleman and subsequently Fuller, have utilized the production function model. This approach was employed in the United States of America to try to quantify the impact of numerous influences on educational achievement. The purpose of the study was to discover why poor and minority children did badly.

The findings of this survey, which were published, indicated that students were separated in schools based on race and socioeconomic level. Those from low-income families attended schools with limited resources. Students' accomplishment is measured by standardized achievement test results in the education model's production function. Kids and school infrastructure are the study's inputs, while school outputs are the students' academic achievement as evaluated by test scores.

2.2.2 Theoretical Framework on Family Background

2.2.2.1 Parental Attachment Theory

According to the parental attachment theory, a kid creates a deep emotional link with another person (care giver) throughout childhood, which has permanent repercussions[116]. According to him, a sensitive and empathetic approach to parenting aids in the formation of a stable attachment style in children, which promotes their social-emotional growth and well-being, because the proponent of this theory gives hints regarding children's emotional development, this idea is significant to the research. He also offered sound advice to parents

and guardians on how to help their children's mental growth. Parents are more aware of the importance of forming a solid attachment relationship with their children. According to the theory, throughout childhood, a child creates a deep emotional link with another person (caregiver), which has permanent repercussions[76]. Sensitive and empathetic parenting aids in the formation of a stable attachment style in children, which promotes their socio-emotional growth and well-being. Parents who are less sensitive and emotionally invested in their children's needs are more likely to neglect their children's needs, resulting in insecure attachment styles, which are a risk factor for a child's mental development[40].

The proponent of this theory gives hints regarding children's emotional development, this idea is significant to the research. He also offered sound advice to parents and guardians on how to help their children's mental growth. Parents and guardians are now more aware of the need of developing a solid attachment relationship with their children. As a result of these relationships, the children will develop a stable attachment and a secure frame of mind later in life. Parents will learn how to recognize their children's biological and psychological requirements, as well as how to avoid setting false expectations based on their behavior.

2.2.2.2 Good Parenting Theory

The "good parenting theory" is another beneficial notion in this study. "Good parenting theory" in some years back considered parental economic level to be a primary driver of a student's sentiments. Children are harmed by low income not because poor families have less money to invest in them, but because it limits their parents' ability to be "good parents"[56].

However, there are two variations of the theory: parental stress and role model stress. The "parental stress version" influences a child's psychology, and this suggests that poverty is a difficult endeavor, and that the stress of poverty weakens parents' ability to be helpful, dependable, and interested in their children's education. It also shows that bad parenting harms a child's social and emotional development, limiting their training and chances,

whereas another version of the thesis focused on parents' capacity to engage with their children, which does not necessarily imply that they are broke[56].

Increased parental income leads to less stress, which improves parenting abilities, according to the parental stress hypothesis. In conclusion, the stress role model form of the "good parenting theory" is important to this study, particularly the stressed version, which deals with parents' psychology and their incapacity to concentrate and think positively about their children's social and emotional development. Inability of parents to focus on how to best support their children socially and emotionally may result in a decrease in training, which has a negative impact on their children's academic progress. The stress role model version, on the other hand, stated that disadvantaged family backgrounds, particularly low-income parents, establish unfavorable views and norms regarding their children's academic achievement. This idea defined cultural endowment as the value parents placed on their children; a small number of wealthy parents do not consider their children's education as a significant investment. Some people would rather invest in a business that would yield a rapid return than in their children's future[56]. Good parenting theory; the hypothesis proposes that parental income is a significant factor on a student's sentiments[58]. Low poverty, he claims, harms children not because poor families have less money to spend in them, but because it limits their parents' capacity to be "good parents."

The stressed form of the good parenting theory, which deals with the psychology of the parents and their incapacity to concentrate and think positively about their children's social and emotional development, is critical to the study. Inability of parents to provide the greatest social and emotional care for their children may result in a drop in training, which has a negative impact on their children's academic achievement.

If their cultural endowment is similar to the value parents place on their children, some parents might not view their children's education as a significant investment; instead, they

choose to engage in commercial initiatives that will yield a rapid return rather than in their children's future. Others, on the other hand, would spend their last dime to guarantee that their children receive the greatest education possible[75]. Some people would rather enjoy their lives than invest in their children's future. Their preference or decision has a direct impact on their academic performance.

The parental stress and role model variations of this idea exist. The parental stress version influences the child's psychology, and this suggests that poverty is a difficult endeavor, and that stress poverty reduces parents' ability to be helpful, dependable, and interested in their children's education. Poor parenting also harms a child's social and emotional development, limiting their training and possibilities, while another version of the notion focused on a parent's capacity to engage with their children, which does not always imply that they are broke. Increased parental income translates to less stress, which improves parenting abilities, according to the version[45].

Review of Previous Empirical Works

2.3.1 Review of Previous Empirical Works on School Plant

The teaching-learning process is inadequate without good construction. The researcher focused on the school building and its influence on student academic progress in this study. The study's major goal was to determine the influence of school buildings on secondary schools students in Pakistan's Khyber Pakthunkhwa province. The research was descriptive in nature. The respondents were polled using a dichotomous questionnaire. To achieve the study's goal, descriptive and inferential statistics were utilized. The current study's findings reveal that there is a link between kids' academic achievement and the structure of their school[99].

The impact of school plants on students' academic Achievement in Economics at Secondary Schools in Ondo State's Ile-Oluji Okeigbo Local Government Area was explored

in a research. The study used an ex-post facto research design. A total of 1,342 students offering Economics were selected as a sample, accounting for 29.0 percent of the 4632 Junior Secondary School (JSS) students. The study employed the School Plant Availability Checklist (SPLAC), which has a Cronbach Alpha () of 0.73. The hypotheses were tested using Analysis of Covariance (ANCOVA) at the 0.05 level of significance. The findings revealed that instructional equipment, facilities, and playgrounds all had a substantial impact on students' economic performance[100].

The provision of laboratory facilities in Calabar Secondary Schools has brought little or no results in terms of student academic achievement in recent years[106]. The purpose of this article is to assess the impact of laboratory facilities on students' academic performance in Calabar. However, 350 copies of a questionnaire were sent to Chemistry students in order to measure the influence of the facilities on the students' academic performance. The findings of the data collection and analysis suggest that Secondary School Laboratory Facilities are insufficient for teaching Chemistry. This conclusion was also confirmed by the tested hypothesis, which showed that facility adequacy had no significant impact on student academic performance in Chemistry.

While showing encouraging outcomes, research has developed a corpus of papers dealing with the link between school building condition and student accomplishment[101]. Other studies, on the other hand, have found no significant difference in achievement results between students in poor and good condition facilities. The discrepancies in research results might be due to the methods used. The most significant distinction is in how the structure is evaluated and the tool used. More accurate data on the actual learning situation of a school building is provided by an instrument that reports those building aspects that have a direct research relation to student performance, resulting in more meaningful conclusions.

"Influence of Library Service on Students' Academic Performance in Ordinary Certificate of Secondary Education Examination in Mtwara Mikindani Municipality, Tanzania" was conducted that several Secondary Schools in Mtwara Mikindani Municipality did not have libraries[107]. Furthermore, students from secondary schools with libraries and sufficient materials performed better in CSEE than students from secondary schools without libraries and sufficient materials. This is because the availability of well-equipped libraries encourages learning habits and enhances students' study skills, resulting in better CSEE performance.

The library is regarded as a crucial component in the implementation of school programs. In view of the aforementioned, the researcher looked at the perceived impact of library services on Secondary School Students' academic progress[108]. Twenty schools and their principals were chosen from three senatorial districts in Kwara State using non-probability procedures (stratified, purposive, and convenience selection techniques). To obtain relevant data for the study, the research design comprised an interview and an observational checklist. The data was analyzed using the Nvivo software (version 10) program. The study's findings demonstrated that library services had a favorable impact on students' academic progress. The findings also revealed that libraries in schools lacked basic facilities and contents. In addition, schools had untrained or inadequate library staff.

The correlation between school plant provision and secondary school students' academic achievement in Rivers State's Tai and Eleme Local Government Areas. To do this, the study was guided by four research questions and four null hypotheses. The findings of the studies revealed that there is a link between school plant provision and kids' academic achievement in secondary schools[117]. The result was that school plants are essential components of the educational system, and their presence improves instructors' teaching abilities as well as students' academic achievement. School buildings should have appropriate

space, ventilation, lighting, humidity, and temperature. Instructional resources, library services, and a scientific lab should all be available.

The impact of laboratory exposure on students' academic achievement in practical topics in secondary schools in the Wakiso district was investigated. The study looked at the availability of laboratories, their utilization, and the availability of science instructors, as well as science teachers' assessments of how laboratory availability affects students' performance in science courses. Schools did not have laboratories, according to the findings; instead, they had science halls that lacked laboratory space. All of the tested schools had insufficient or nonexistent apparatus and chemicals; instead, schools improvised their own equipment by using locally accessible materials in their surroundings. Experiments were carried out in big groups with little children, there was a severe scarcity of scientific teachers[116].

School is a basic necessity of education that contributes to the country's growth, but the government has spent a significant amount of money on school construction. Low-cost school buildings minimize the overall cost of construction and make it easier to expand the number of schools in the country. In this study, several methods and materials were used to accomplish low-cost school construction in terms of both economy and safety. The major focus of this research is on building materials and the economy. For ease of comprehension, a few low-cost materials are chosen, and reports are also supplied in the specification chapter. The materials and procedures indicated may be beneficial for constructing school buildings in a cost-effective manner.

2.3.2 Review of Previous Empirical Works on Family Background

The impacts of Junior Secondary Schools Students' socioeconomic background on their academic performance in Adavi LGA, Kogi state, were explored in a research, to acquire data on students' socioeconomic background and academic achievement, surveys and ex-post facto study design work were employed[113]. The study's participants are outgoing Junior

Secondary School Students from the chosen schools, as well as their parents' socioeconomic background. The secondary schools and students for the research were chosen using a stratified random approach. The study hypothesis was examined using simple percentages. The findings suggest that the children' academic achievement was impacted by their parents' socioeconomic level.

The Relationships among Parents' Educational level, Income, Academic Adjustment and Performance of Junior Secondary School Students in Kaduna Metropolis, Nigeria and find out that significant positive relationship exists between Parental Educational level and academic performance of Junior Secondary School Students, r = .651 p = .011, significant positive exists between Parental income level and academic performance of Junior Secondary Students, r = .550 p = .012, significant positive relationship exists between Parental Educational and academic adjustment of Junior Secondary School Students, r = .505 p = .037 and significant positive relationship exists between Parental income level and academic adjustment of Junior Secondary School Students, r = .842 p = .000. Parents should offer a home environment that supports students' development and motivates them to pursue greater educational outcomes at school, according to the research. Parents should also strive to demonstrate a good attitude toward their children's education by participating actively and providing all necessary encouragement[102].

Nowadays, the focus is on parent socioeconomic situation, which has a significant impact on student educational attainment. Educational processes might be official or informal. Economic and social growth are among the advantages it provides to people and society. Education is viewed as both consumption and investment from an economic standpoint, but only a few individuals comprehend this. Active parental involvement and participation in student issues might be linked to improve academic success. These influences include parent involvement, profession, interest in education, learning materials at home, family size,

stability, background, social stratification, and socio-economic status of parents, all of which are thought to play a significant role in determining students' academic achievement. Many apparent changes will be noted, which may be overt or covert, if the family is involved or participated in the child's education in good ways, such as attitude, behavior, test scores, attendance records, rate of graduations, and high number of enrollment in higher education. The main instrument utilized in collecting data for this study was a well-instructed questionnaire, which was validated through the use of a pilot study. The students were informed about the research's objectives, the confidentiality of their replies, and how to reply to the questionnaire's questions and items. The correlations between the two replies and the outcome indicated a significance of (p 0.05), which was statistically significant[112] .

The study investigated the association between social and cultural capital and academic achievement by giving the Social and Cultural Capital Questionnaire (SCCQ) to 320 undergraduate students majoring in English language and connecting the subscales with the learners' university GPA. The learners' GPA was shown to be substantially associated with all five SCCQ components. Furthermore, the researchers discovered that literacy and cultural competency were predictive of a better GPA after doing regression analysis. The researchers then used the regression model to enter the educational levels of their parents. The findings of this study revealed that, in addition to literacy, the mother's educational level predicted 23% of the differences in learners' GPA. The educational degree of the father, on the other hand, was not a good predictor of academic accomplishment[101].

The effect of a student's family's socioeconomic situation on their academic achievement was investigated[110]. The study used a descriptive survey research approach. Students from the College of Education and Behavioural Sciences were the intended audience. Through stratified random sampling, 172 students were selected from the target demographic. The findings revealed that: first, family income had no effect on students' academic

achievement; second, there was a statistically significant negative relationship between sex and students' academic achievement; and third, family education level contributed 40.96 percent (R2*100 percent) to students' academic achievement, while 59.04 percent (1-R2)*100 percent) were unexplained variables.

A study was conducted to look at the link between family socioeconomic status (SES) and children's reading ability. There were 2294 eighth-grade pupils that took part in the study. Parents' educational level, occupational status, and family property were used to determine SES, while children's reading ability was calculated using item response theory. We looked at whether the parent–child interaction mediated and was modified by learning motivation the association between family SES and reading ability. According to the findings, the parent–child interaction mediated the association between SES and reading ability. The learning motivation of the pupils moderated this association. At high, medium, and low levels of learning motivation, the direct impacts of SES on reading ability were 0.24, 0.32, and 0.40, respectively[108].

A study of how parental education influence students' academic performance was carried out, the study's major goal is to determine how parental education and educational qualification effect secondary school students' academic performance in Kuala Terengganu, Malaysia. Descriptive Survey Research design was used in which data from 200 respondents was collected using self-administered questionnaire from 4 selected secondary schools within Kuala Terengganu. The respondents were chosen using a stratified random sampling procedure. Regression analysis was used to examine the data. Demographic data, descriptive analysis and inferential analysis are all used to explain the outcome. Students with high educational qualifications perform those with inferior educational qualifications, according to the findings of the study.

Investigation revealled that family background affects children's academic achievement at an early stage. Through analysis of data from the Chinese Family Panel Study in 2010(CFPS2010), this paper proposes two pathways through which family influences children's academic performance[117]. Firstly, parents compete for high-quality educational opportunities for their children and better educational opportunities lead to better academic performance. Secondly, parenting behavior and educational support for their children could cultivate children's learning habits and affect academic performance. We also find urban students' academic performance are more heavily affected by their families' socioeconomic status compared with rural students. These findings bear important implications for how to reduce the class difference in students' academic performance and promote educational equity in contemporary.

This study investigated the influence of teachers' qualification and experience on students' academic performance in basic science in junior secondary schools in Nigeria. The research was done in the form of a descriptive survey. Eight Junior Secondary Schools (J.S.S.) in Ogun State's Ogun East senatorial area were chosen using simple random sampling. There were 18 basic science instructors in attendance, as well as 540 junior secondary school pupils. A questionnaire and a Basic Science achievement exam were used to collect data. Descriptive statistics, one-way analysis of variance, and Pearson Product-Moment Correlation were used to analyze the data. The findings of this study revealed that the majority of Basic Science teachers at the J.S.S. level were not trained as Basic Science teachers; science teachers' qualifications influenced students' Basic Science academic performance; and Basic Science teachers' years of teaching experience had no positive correlation with students' Basic Science academic performance.[116].

The relationship between social and cultural capital and academic achievement was explored in the study administering the Social and Cultural Capital Questionnaire (SCCQ) to

320 undergraduate students majoring in English language and correlating the respective subscales with the learners' university GPA. The learners' GPA was shown to be substantially associated with all five SCCQ components[116]. Furthermore, the researchers discovered that literacy and cultural competency were predictive of a better GPA after doing regression analysis. The researchers then used the regression model to enter the educational levels of their parents. The findings of this study revealed that, in addition to literacy, the mother's educational level predicted 23% of the differences in learners' GPA. The educational degree of the father, on the other hand, was not a good of academic achievement.

A study conducted by the relationship between parents' socio-economic status and their children's academic performance investigated the various socioeconomic elements that influence secondary school students' academic performance[114]. A total of 720 students were chosen for the study. The study's primary hypothesis and six sub-hypotheses were investigated using the Pearson product movement correlation statistical approach. The academic performance of the students was shown to have a positive significant association with total family income and father's work grade. The study found that a parent's socioeconomic situation had a significant impact on their children's academic achievement. The study is similar to the current study in that they both discuss how socioeconomic status influences secondary school students' academic performance, with a little difference in sample size[114].

On the impact of students' socioeconomic background on academic performance in universities examined the factors that impact students' academic achievement, as well as the 50 percent correlation between socioeconomic status and academic performance[102]. Simple random selection was used to determine a sample size of 186 students from all six faculties at the institution. Data was collected via questionnaires. Descriptive and inferential statistics were used to analyze the data. The association between students' socioeconomic background

and academic achievement was determined using regression analysis. The findings demonstrated that students' socioeconomic status had an impact on their academic achievement.

The effects of Parental socio-economic status on Academic performance of students Parents' socioeconomic position, educational background, parental educational qualification, and students' health state were all investigated[112]. To lead the research, four hypotheses were developed. A total of 188 students from three secondary schools were included in the study. At the 0.05 level of significance, the data were examined using the t-test, analysis of variance (ANOVA), and pair-wise comparison using the turkey test. The study's findings imply that parents socioeconomic level and educational background had no substantial impact on the children' academic achievement. However, parents' educational qualifications and youngsters' health situation are important factors that influence academic achievement[51].

2.4 Conceptual Framework

The independent variables of this study are school plant and family background. School plant components considered for this study are Classroom, Science Laboratory Facilities and Library Facilities, while that of Family Background is divided into the following components; Parents' Educational Status, Parents' Income Status and Family Size while the dependent variable is Secondary School Students' Academic Achievement. Students' psychological variables are the intervening variable, and the school setting is the moderating variable, which is thought to have a contingent influence on the dependent variable. The features of an individual school, such as the kind of school, the administration, the school's decision-making procedures, and the degree of student participation in decision-making, are all part of the school environment. This is seen in Figure 1 below:

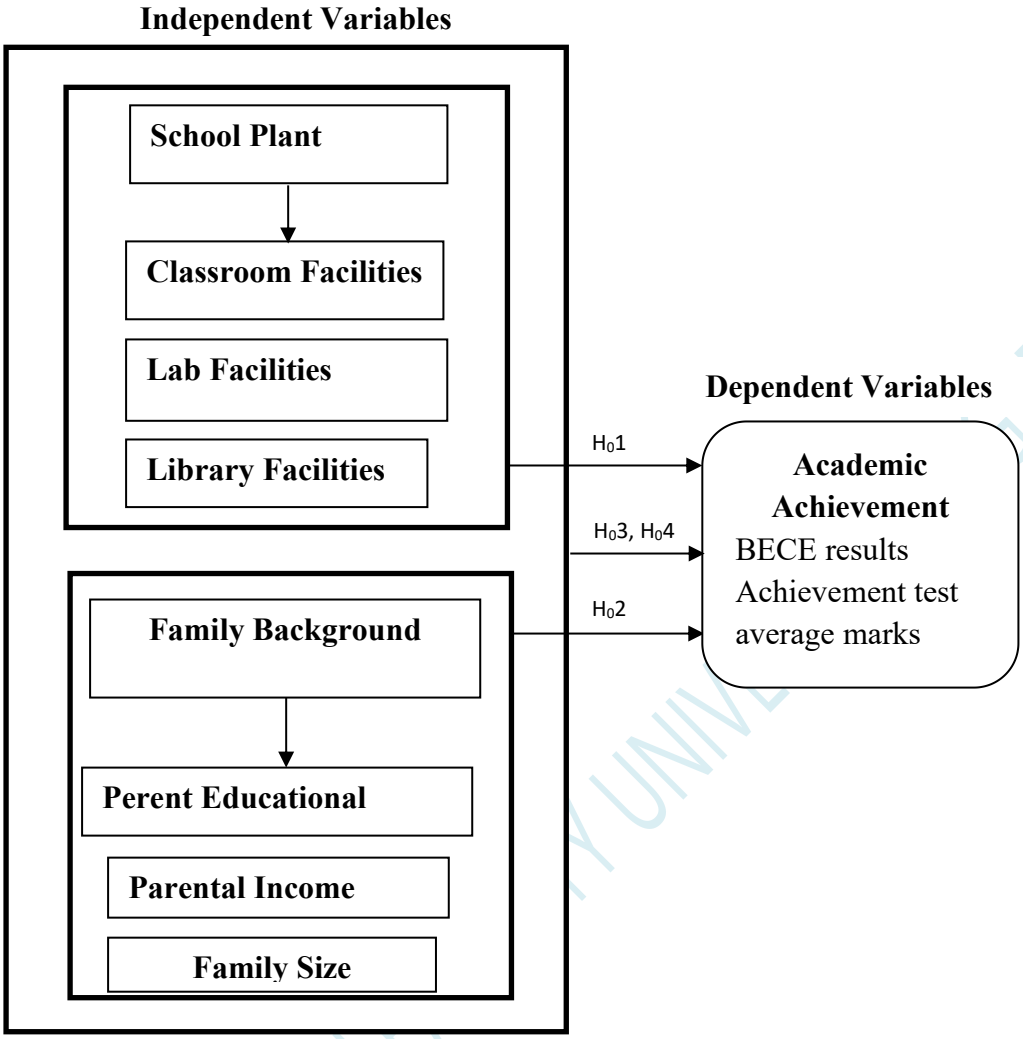

Figure 1: Conceptual Framework
Source: This Research Work 2021

2.6 Summary of Literature Review

The review of literature is divided into three sections: conceptual concerns, theoretical framework, and preceding empirical studies. It is self-evident that school plant/facilities and family background are critical components of an educational program's effectiveness and efficiency. A good school environment/facilities, as well as a decent home background and parents' positive attitudes toward education, all contribute significantly to greater educational attainment. A rich learning environment, regardless of where a school is located, is pleasant and safe from danger; radiates a sense of well-being; and sends a loving message, according to the review. As a result, a good learning environment is essential for a high-performing

educational institution. It also looks at the impact of teaching and learning facilities, family size, social capital, and parents' educational level on pupils' academic attainment. The theoretical framework comprises parental attachment theory and good parenting theory, as well as theories of school plant/facilities, which include classrooms, school libraries, and labs, as well as family background on academic success of pupils. It is clear from the literature that a well-facilitated classroom enhances student results. 18. School buildings, which include school plants, classrooms, bathrooms, and fresh drinking water facilities, as well as libraries, offices, labs, and other materials and infrastructure, are very useful in improving the educational system, and instructors and students benefit much as a result libraries, offices, laboratories, and other materials as well as infrastructure are quite helpful to bring betterment in the educational system due to which teachers and students are highly motivated towards the teaching-learning process[19]. Classroom must be equipped with all educational facilities and resources[20]. Without educational resource, classroom is quite meaningless and useless where students will not able to show better academic performance or teachers to show better teaching performance[21].

Family Background factors such as parental educational level, parental income and familiy size, parental occupation are important factor in the child's success in the school system. This chapter also discussed the influence of Parental educational and Income levels on the behaviour and quality of education of their children and that Parents' educational and Income levels affect children in many ways as to influence academic adjustment and performance either positively or negatively. Two relevant theories have been discussed to support the argument of the study.

Many writers centered their investigations on specialized subjects other than Basic science, according to both theoretical and empirical data. This is mostly owing to their conceptual and computational areas of interest. Previous studies, such as those conducted,

compared one or two factors other than the ones included in this study to their study's accomplishment. As a result, no previous research has looked at the two variables of school plant indices and family background indices as predictors of academic success in junior secondary school basic science in a single study like this one. This is a void that this research aims to fill. More so, different researchers used different operational definition of term for school plants, family background and academic achievement. It is this gap that arouses the researcher's interest to undertake a study on the School Plant and Family Background as predictors on Achievement of Junior secondary School Basic Science in Atiba Local Government Area of Oyo State, Nigeria.

Endnotes

1. Y.D. Usman, *Educational Resources: An Integral Component for Effective School Administration in Nigeria. (RS4.35 Nassarawa Eggon Unit Command, Nasarawa State, Nigeria,* 2017.

2. M. I. Arowojolu, S.T. Yinusa, F.A. Ameh, & T. A. Arowojolu, *School Plants Planning and Maintenance as Correlate Students' Academic Performance in Irele Local Government Area of Ondo State, Nigeria, 2019, 87-92.*

3. J.N. Osuji, *Impact of School Facilities on Students' Academic Performances in Public Secondary Schools in Giwa and Zaria Education Zones. (An M.Ed*
4. *Thesis, Amhadu Bello University, Zaria,* 2017.

5. V.O. Sam-Kalagbor,"*Perceived Influence of School Physical Facilities on Students' Academic Performance in Public Secondary Schools in Rivers State"*. **International Journal of Innovative Social & Science Education Research,** 9(1), 2021, 46-59.

6. B. Peter, T. Alberto, S. Tigran, A. Diego, & M. Ustinova, *The Impact of School Infrastructure on Learning A Synthesis of the Evidence* ,**International Bank for Reconstruction and Development / The World Bank**, (1818 H Street NW, Washington, DC 20433, 2019).

7. R.A. Okereke, *Evolving Maintenance Culture in Nigeria: The Role of Facilities Management Current issues in Educational Management in Nigeria. Benin,* **Ambik Press Ltd,** 2020..

8. C.O. Akomolafe, & V.O. Adesua, *The Impact of Physical Facilities on Students' Level of Motivation and Academic Performance in Junior secondary Schools in South West Nigeria,* **Journal of Education and Practice**,7(4), 2016.

9. I A. Olaefe, *Research Writing For Academic Growth. Zaria: Ahmadu Bello University,* 2017.

10. M.K. Smith. '*What is teaching?' in The Encyclopedia of Pedagogy and Informal Education. [https://infed.org/mobi/what-is-teaching/,* 2018.

11. S. Bediako. "*Models and Concepts of Curriculum Implementation, some definitions and influence of Implementation,* 2019.

12. V. Nam, *Second Secondary Education Sector Development Program: Education Sector Development Program Implementation Manual. Addis Ababa, EMPDA,* 2016.

13. E. Obi, Osuji & A. Ndu (Eds), *Management of School Plant for Effective Administration of Schools. In G.N. Educational Administration for Colleges of Education and Universities. Owerri: Tony Ben Publishers.*

14. E.N. Okwuduba & E.C. Okigbo, *Effect of Teaching Methods on Students' Academic Performance in Chemistry in Nigeria: Meta Analytic Review.* **Bulgarian Journal of Science and Education Policy (BJSEP),** 12(2), 2018.

15. B.O. Abdulraheem, "*Parents' Socio-Economic Status as Predictor of Secondary School Students' Academic Performance in Ekiti State, Nigeria". ISSN 2222 – 1735* 1(6) , 2017,123 – 124.

16. A. Abraham, *The Family Effect on Academic Performance in School. A Case Study of Selected Schools in Kabale District. Academic Paper*, 2017.

17. Chandio & M. Ali, *The Role of Socialization in Child's Personality Development.* **Research Journal of Modern Sciences,** I, 2019, 70.

18. C.N. Nnamani, H.G. Dikko & L.M. Kinta, *Impact of Students' Financial Strength on their Academic Performance: Kaduna Polytechnic Experience,* **An International Multidisciplinary Journal, Ethiopia**, 8 (1), 2017, 83-98

19. Z. Li & Z. Qiu, *How does Family Background affect Children's Educational Achievement? Evidence from Contemporary China*. **The Journal of Chinese Sociology**, 5(13), 2018.

20. B.O. Abdu-Raheem, *Parents' Socio-Economic Status as Predictor of Secondary School Students' Academic Performance in Ekiti State, Nigeria*. **Journal of Education and Practice,** 6 (1), 2015, 123-128.

21. D.H. Caro, "*Socio-Economic Gaps in Subject Interest: the Mediating Role of Parental Cognitive Involvement. Large-scale Assessments in Education*,6(13), 2018.

22. Q. Chen, *"Family Background, Ability and Students' Achievement in Rural China-Identifying the Effects of Unobservable Ability using Feminine-generated Instruments", http.//repository.upenn.edu/gansu papers/*26, 2018.

23. V.E. Ndum, & R.N. Udoye, *"Investigating Parents' Socio-Economic Background and Academic Performance of Business Studies. Academic Paper*, 2021.

24. J.U. Ovansa, *Effect of Socio-Economic Status on the Academic Performance of Junior secondary School Students (A Case Study of Public Junior secondary Schools in Adavi L.G.A of Kogi State),***International Journal of Education and Evaluation** ISSN 2489-0073, 3(8)), 2017.

25. M.S. Farooq, A.H. Chaudhry, M. Shafiq, & G. Berhanu, G., *"Factors affecting students' quality of academic performance: A Case of Secondary School level*", **Journal of Quality and Technology Management** 7 (2), 2017, 1-14

26. N.E. Hill, O.R. Castelino, & J.E. Lansford, *"Parents Academic Involvement as related to School Behaviour Achievement and Aspiration: Demographic Variations Across Adolescence", Child Development* ,75 (5), 2018,1491-1509.

27. M. Abbas & R. Nazir, "*Impact of Socio-Economic Status on Academic Performance of Students) A Case Study of Bahawalpur),***Journal of Economics and Economic Education Research,** 21(2), 2020.

28. Y.K. Saylor, *Fundamental of Research Methodology and Statistics. New DelhI,* **New Age International(P) Ltd**, 2017.

29. N. Ukpong, **Administration of School Business: A Planning Approach. Boston: Ally and bacon, Inc. See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication /339468424,** 2020.

30. N.M. Masanja, *Essentials in Higher Education Administration in a Period of Economic Constraints.***Bakatsina Journal of Education,** 2019.

31. B.M. Bello, *Educating Border Dwellers to Promote Peace and Security in an Electoral Process: Perception of Community Members'***Journal Pengabdian Kepada Masyarakat: Teknologi dan Aplikasi,** 2020.

32. G. Maes and G.V. Hootegem, *"A Systems Model of Organizational Change*". **Journal of Organizational Change Management,** 32 (7), 2019, 725-738.

33. J. S. Owens, A. S. Holdaway, J. Smith, S. W. Evans, L. K. Himawan, E. K. Coles, E. Girio-Herrera, C. S. Mixon, T. E. Egan, & A. E. Dawson, *Rates of Common Classroom Behaviour Management Strategies and Their Associations with Challenging Student Behaviour in Elementary School.* **Journal of Emotional and Behavioral Disorders,** 26(3), 2018, 156–169.

34. A.A Davidescu, A. Simona-Andreea, P. Andreea & I. Casuneanu. *"Work Flexibility, Job Satisfaction, and Job Performance among Romanian Employees— Implications for Sustainable Human Resource Management". www.mdpi.com/journal/sustainability. 2020.*

35. Suleiman, Yusuf; Hanafi, Zahyah; & Tanslikhan, Muhajir, *"Perceived Influence of Library Services on Students' Academic Achievement in Secondary Schools in Kwara State, Nigeria",***Library Philosophy and Practice (e-journal). 1744. https://digitalcommons.unl.edu/libphilprac/174**, 2018.

36. S. Manabete, & S. T Duwa, *The Use of School Services in the Management of Technical Colleges in North-East Geo-Political Zone of Nigeria,* 2017.

37. G. Da-Silva & R.C. dos Santos, *"Balancing family agriculture to improve sustainable public management of school feeding"*. **Brazilian Journal of Development**, 2020.

38. AVairamidou1 & P. "Stravakou, *Classroom Management in Primary and Secondary Education Literature Review".* **Journal of Education and Human Development,** 8,(2), 2019, 49-59.

39. K. Kayıkç, O. Yılmaz & A. Şahin, *"The Views of Educational Supervisors on Clinical Supervision,.* **Journal of Education and Practice,** .8 (21), 2017.

40. A Mafini, "*The Contribution Of Organisational Climate To Employee Well-Being".* **The Journal of Applied Business Research**, 2017.

41. J. Jahn. *"Teachers' Perceptions of Organizational School Climate and Communication Satisfaction". A Dissertation for degree of Doctor of Education with an emphasis on Educational Leadership, Faculty of College of Saint Mary,* 2019.

42. S. Maxwell, K. J. Reynolds, E. Lee, E. Subasic & D. Bromhead, *"The Impact of School Climate and School Identification on Academic Achievement: Multilevel Modeling with Student and Teacher Data" Original Research,* 1, 2017.

43. V. F. Peretomode & S. O. Bello. *"Analysis of Teachers' Commitment and Dimensions of Organizational Commitment in Edo State Public Secondary Schools".* **Journal of Educational and Social Research,**8 (3), 2018.

44. T. A. Chirkina & T. E. Khavenson, *"School Climate A History of the Concept and Approaches to Defining and Measuring it on PISA Questionnaires"*, **Russian Education & Society Journal,** 60 (2), 2018,133–160.

45. M. D. Camp. *"The Power of Teacher-Student Relationships in Determining Student Success"*

46. F. Whelan, *The learning challenge: How to ensure that by 2020 every child learns. Available online at: www.acasus.com/wp-content/uploads/2014/02/Acasus (Accessed,*10, 2017).

47. K.B. Dukpe, B.O. Agyekum & B. Konlan, *School Libraries and Students' Academic Achievements in Bunkpurugu- Yunyoo District of Northern Ghana.* **Library Philosophy and Practice (e-journal),** 2018.

48. V.K. Maheshwari, *Basic Science Laboratory and Lab Method -Activity Oriented Pedagogy in Basic science Teaching. (India: The Concept of Mocksha,* 2019, 52-61.

49. K.E. Adenegan, *Setting Basic Science Laboratory in Schools. Lecture of Numerical Analysis, Department of Basic Science Adeyemi College of Education Ondo, Nigeria,* 2019, 7-10.

50. L.N Nworgu, *Traditional Methods of Teaching Biology, Paper Prepared for National Open University, Unpublished Work*, 2006.

51. G.A. Aliyu, *Influence Of Socio-Economic Status On Academic Achievement of Junior secondary Students, In Nassarawa Zonal Education Area Of Kano State, Nigeria,* **Asian Journal of Educational Research**, 4 (4), 2016, ISSN 2311-6080.

52. Omoruyi, I.V. *The Impact of Broken Homes on Students' Academic Performance,* **Indonesian Journal Of Educational Research And Review,** 3(3), 2020, 113-122.

53. R. Ogbugo-Ololube *Impact of Students' Parental Background on Academic Achievement in Secondary Schools in Obio/Akpor LGA, Rivers State, Nigeria.* **International Journal of Scientific Research in Education,** 9(2), 2016, 115-126.

54. K.A. Saidu & H.M. Ali, *Perceived Effect of Households' Socio-economic Variables on the Academic Performance of Junior Secondary School Students in CCA in Maiduguri, Borno State, Nigeria,* **International Journal of Science, Technology and Society**, 7(6), 2019, 87 – 92.

55. D.C. Nweke, J.C. Ihejirika, & Z.D. Deebom, *Influence of Family Background on Academic Achievement of Pupils in Primary Schools in Port Harcourt City Local Government Area, Rivers State,* **International Journal of Education and Evaluation,** 4 (3), 2018, 2489-0073

56. S. J. A. Mgbekem, P. J. Ntukidem & R.B. Etor, *Planning Imperatives for Sustainability of Qualitative Educational Enterprise in Nigeria: The Role of the Educational Planner,* 2019.

57. R.A. Thompson, J. A. Simpson, & L. Berlin, *From Internal Working Models to Script-like Attachment Representations. The Fundamental Questions,* 14, 2021, 111-119.

58. B.P. Nato, *Analysis of Family Structure Influence on Academic Performance Among Secondary School Students in Bungoma East Sub-County,* **Kenya. International Journal of Secondary Education,** 4 (2), 2017, 12 – 22.

59. T.W. Mabuza & R. Mafumbate, *Effects of Parental Involvement in Academic Wellness of Primary School Learners in the Lubombo Region, Eswatini,* **Journal of Culture, Society and Development An International Peer-reviewed Journal DOI**, 51, 2019, 2422-8400

60. J.O. King'oina, M. M. Kadenyi & B. N. Ngaruiya, *Effect of Teachers' Morale on Standard Eight Pupils' Academic Achievement in Public Primary Schools in Marani Sub-County, Kenya,* **International Journal of Scientific and Research Publications,** 5(10), 2015.

61. S. Samiullah, *Influence of Parenting Style on Children's Behaviour,* **Journal of Education and Educational Development**, 3(2) , 2017.

62. E. Farrell, *The Most Important Thing About Family Business is Continuity. Family Business: Education*, 2019.

63. A.A. Oyelade & J.O. Egbebi, *Instructional Supervision for Quality Education Delivery in Nigeria: Innovation Option for Effective Learners' Achievement. Kampala International University* ISSN: 2415-0843, 3(1), 2018, 331–339.

64. S. Yakubu1 & G. Sowunmi, *School Plant Planning: A Prerequisite for the Attainment of Educational Goals and Objectives,* **Journal of Education and Practice** www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online), 8(18), 2017.

65. I. Kostereliogl u, *Effects of Parenting Style on Students' Achievement Goal Orientation: A Study on High School Students. Educational Policy Analysis and Strategic Research,* 13(4), 2018, 91-107.

66. S.G. Dalibi, *Socio-Economic Performances of Mega Construction Projects (MCPs) in the Light of Sustainable Development of Nigeria's Built Environment. IOP Conference Series Earth and Environmental Science*, 2020.

67. M.K. Sahabi, N.K. Askia & E.S. Unobe, *Use of Electronic Information Resources by Undergraduates of Ahmadu Bello University library in Nigeria,* **International Journal of Academic Research in Education and Review**, 2020.

68. O.O. Olagbaju, *Effects of Audio-Visual Social Media Resources-Supported Instruction on Learning Outcomes in Reading*. **International Journal of Technology in Education** 3(2) , 2020.

69. G.K. Mathias & Y. Abdulsalam, Experience of an Academic Library During the COVID-19 Pandemic. t: https://digitalcommons.unl.edu/libphilprac, 2020.

70. J.B. Besong*, Possible Opportunities for Educational System Efficiency and Effective Governance in Cameroon.* **International Journal of Managerial Studies and Research (IJMSR),** 2(8), 2016, 68-74.

71. R. I. Osarenren-Osaghae & Q. O. Irabor, *Educational Policies and Programmes Implementations: A Case Study of Education Funding, Universal Basic Education*

(UBE) and Teacher Education, International Journal of Educational Administration and Policy Studies, 10(8), 2018, 91-102.

72. S. Manca, V. Cerina, V. Tobia, S. Sacchi & F. Fornara, *The Effect of School Design on Users' Responses: A Systematic Review* (2008–2017). Received: 27 January 2020; Accepted: 16, 2020.

73. A.Wondimu, *An Overview of Ethiopian Education System, Curriculum, Curriculum Development Processes and Its Historical Trends and Patterns***: A Review. Historical Research Letter** ISSN 2224-3178 (Paper) ISSN 2225-0964 (Online), 50, 2019.

74. U.I. Assoumpta & H.O. Andala. "*Relationship Between School Infrastructure and Students Academic Performance in Twelve Years Basic Education in Rwanda*". **Journal of Education,** 3(1), 60 - 74. 2020.

75. H. Moruf & J.O. Muhammed. "The Use of Library Resources by Teachers in Oyo State: A Study of Selected Secondary Schools in Akinyele L. G. A., Nigeria". International Journal of Research & Method in Education, 5(3), 2018, 49-54.

76. M. Isebe. "*Effective Selection and Organization of Information Resources in School Library*". **International Journal of Library and Information Science Studies,** 1(1), 2016, 27 – 33.

77. J.A. Olayiwola. "*Human Capital Accounting Information and Firm's Value: An Analysis of Selected Quoted Manufacturing Companies in Nigeria* (2007-2014**)". International Journal of Economics Commerce and Management.** 14, (2016), 14-27.

78. F.E. Acheampong, & M. Bouhaouala. "*African Footballers' Life Cycles According to the Analysis Of Transfer Value Along their Career Path:* **A Case Study of Ghanaian Players. Sport in Society Cultures, Commerce, Media Politics"**, 2019.

79. E.Y. Acheampong. "*Giving back to society*: **Evidence from African Sports Migrants. Sport in Society Cultures, Commerce, Media Politics**". 22 (12),. 2018.

80. S.N. Otchere1, J.B. Afari & C. Kudawe. "*Examining the Relationship Between School Facilities and the Learning Environment*: *A Case Study of Oda Seniorigh School*". **Journal of Education and Practice** ISSN 2222-1735 (Paper), 10 (26), 2019.

81. Ekeh, F.I *,Research Methodology and Statistics in Education*. Abakaliki Madol Press, 2020.

82. M. El Harfi, J. Charafi, K. Houmanat, H. Hanine & A. Nabloussi. "*Assessment of Genetic Diversity in Moroccan Sesame* (Sesamum indicum) **Using ISSR Molecular Markers"**. Research Article, 2020.

83. M.A. Soharwardi, "*Impact of Parental Socioeconomic Status on Academic Performance of Students:* A Case Study of Behaviour, Pakistan". **Journal of Economics and Economic Education Research,** 21(2), 2020.

84. M.A. Bhat, J. Joshi &I.A. Wani. *"Effect of Socio Economic Status on Academic Performance of Secondary School Students***". The International Journal of Indian Psychology,** 4(56), 2016.

85. Q. Chen, Y. Kong, W. Gao, & Lei Mo. "*Effects of Socioeconomic Status, Parent–Child Relationship, and Learning Motivation on Reading Ability*". Published online 2018.
86. M.A. Pobbi. *"Parental Motivations & Involvement*: A Developing Country Perspective". **European Journal of Education Studies**, 7(1), 2019.

87. S.U. Nnorom, S. Ezenwagu & B.C. Nwankwo. "*Home Environmental Factors Influence on Academic Performance of Secondary School Students in* Owerri Zone II, Imo State, Nigeria". **Asian Journal of Advances in Research,** 2(3), 2020.

88. Z.O. Murundu & H.H. Murundu. *"Influence of Parents' Supervision of Homework and its Influence on Academic Achievement of Pupils in Public Primary Schools*". IAR **Journal of Humanities and Social Science,** 1(3), 2020, 173-179.

89. N.F. Rahmaniah. *"Perception as an Intermediary in the Relationship between Socioeconomic Status, Expectations, and Participation***". Journal of K6 Educational Management,** 2(2), 2020.

90. M.A. Bhat1, J. Joshi & I.A. Wani . *"Effect of Socio Economic Status on Academic Performance of Secondary School Students" The International Journal of Indian Psychology.* Volume 3, Issue 4, No. 56, DIP: 18.01.004/20160304 ISBN: 978-1-365-23992-2 http://www.ijip.in | July-September, 2016.

91. A.M. Bala, I. Yahaya & J. Aliyu. "*Towards Socio-Economic Status of parents and Access to Quality Education in Secondary Schools Education in Nigeria"***International Journal of Research and Scientific Innovation (IJRSI) |** Volume VII, Issue V, May 2020.

92. A.R. Vargas, A.A.M. Macías, K.C. Arredondo-Soto, Y.B. Lopez, T.C. Gutiérrez & G.H. Escobedo. *"The Impact of Environmental Factors on Academic Performance of University Students Taking Online Classes during the COVID-19 Pandemic in Mexico*". Published: 5 November 2020.

93. K.R. Pant. *"Influences of Parental Socio-Economic Status on Academic Achievement: A Case Study of Rural Communities in Kailali,* Nepal". **Contemporary Research: An Interdisciplinary Academic Journal,** Kipp2020, vol. 4 (1): 95-109.

94. N.M. Ishak, N.H.M. Satar & R.H. Zakaria. *"Parental Involvement in Education among Urban Families in Malaysia".*

95. O. Akrof. *"Academic Achievement of Primary School Pupils: Investigating Home Environment Factors Contributing to Low Academic Performance".* **E-Journal of Humanities, Arts and Social Sciences (EHASS),** 1(2), 2020, 49-57.

96. K. Walter and W. Beth. *"Influence of Parental Level of Education and Parental Income on Students' Academic Performance in Public Day Secondary Schools*". **Journal of Education and Practice,** 9(35), 2018.

97. A.S. Eshetu *"Parental Socio-economic Status as a Determinant Factor on Academic Performance of Students in Regional Examination :***Case of Dessie town; Ethiopia". International Journal of Academic Research in Education and Review**. Vol. 3(9), pp. 247-256, October 2016.

98. J.O. Olayiwola & O.W. Jegede. "*The Role of Social Media in Advertising Product among Artisans in Ibadan Metropolis".* **Proceedings of the 2nd International Conference, The Federal Polytechnic,** Ilaro, 10th – 11th Nov., 2020.

99. J. Vennix. "*Do Outreach Activities in Secondary STEM Education Motivate Students and Improve their Attitudes Towards STEM"?***International Journal of Science Education**. May, 2018.

100. M.N. Daemi, A. Tahriri & A.M. Zafarghandi. *"The Relationship between Classroom Environment and EFL Learners' Academic Self-Efficacy*". **International Journal of Education & Literacy Studies. Volume 5, 2017.**

101. G.L. Garrido. Self-efficacy: *The Exercise of Control.* New York: Freeman. 2020.

102. N.R. Adimonyemma, E.E. Akachukwu & N.A. Igboabuchi. *"Impact of Class Size on Students' Academic Performance in Biology in Idemili North Local Government Area of Anambra State.***International Journal of Education and Evaluation** 4(8):, 2018. 22-32.

103. M.M. Gebauer, N. McElvany, W. Bos, O. Köller & C. Schöber. "*Determinants of Academic Self-Efficacy in Different Socialization Contexts: Investigating the Relationship Between Students' Academic Self-Efficacy and Its Sources in Different Contexts".Social Psychology of Education volume* 23, pages339–358 (2020).

104. M.A. Ndidi & I.E. Effiong. *"Influence of Classroom Environment on Junior Secondary School Students' Academic Achievement in Basic Science* in Calabar

Nigeria". **Educational Research and Reviews,** Vol. 15(8), pp. 495-503, August, 2020.

105. M. Abid, A. Muhammad, S. Aaqib & S. Farhat. *"The Effect of Self-Efficacy on Academic Performance at Higher Level of Learning:* A Case Study of Punjab University Lahore. **Journal of Educational Sciences and Research**". 6(1), (2019) 33-47.

106. J. Metsämuuronen & P. Räsänen. "*Cognitive–Linguistic and Constructivist Mnemonic Triggers in Teaching Based on Jerome Bruner's Thinking*".https://www.researchgate.net/publication/329584578, 2018.

107. A.Amadi & C.R. Ezeugo. *"Physical Resources Availability and the Academic Performance of Students in the Universal Basic Education Scheme,* Rivers State". **International Journal of Innovative Development and Policy Studies** 7(1), 2019. 13-23.

108. E.O. Uyanne, O.L. Badamas & A.O. Balogun. "*Influence of Motivation on Teachers' Effectiveness in Ilorin West Local Government, Kwara State***". Journal of Education and Learning (EduLearn**) Vol. 14, No.3, August 2020, pp. 345~351.

109. A.I. Oludipe: *Gender Difference in Nigeria Junior Secondary school students Academic Achievement in Basic Science.* 2012.

110. A.Danjuma: ***A Comparative Study of Upper Basic Science Students' Academic Performance in Public and Private School*** in Taraba State., Nigeria. **Journal of Research in Humanities and Social Science 7** (3), 2019 pp.:26-31.

111. H. Wordu & D. Oneobari. *School Plant Provision and Academic Performance of Secondary School Students in Tai and Eleme Local Government Areas,* Rivers State. **International Journal of Innovative Education Research** 7(1):7-14, Jan.-Mar., 2019.

112. K. Julius. *the Effect of Laboratory Exposure on Students' Academic Achievement in Practically Based Subjects In Secondary Schools In Wakiso District. a Dissertation Submitted to the College of Education, Open and Long Distance Learning in Partial* fulfilment of the Award for Bachelor of Science with Education of Kampala International University, 2017.

113. W. Y. Ibrahim, H. A. Umar & I. Clement. Impact of School Facilities on Students' Academic Achievement. International Journal Advance Resources. 5(12), 878-889. www.journalijar.com Article DOI: 10.21474/IJAR01/603.

114. N. Abu Bakar, I. Mamat & M. Ibrahim. *Influence of Parental Education on Academic Performance of Secondary School Students in Kuala* Terengganu. **International Journal of Academic Research in Business and Social Sciences**, 2017, Vol. 7 (8), 296-309.

115. O. Jimoh, T. Nathaniel & A. Ojo-Maliki. *Influence of School Plant on Secondary School Students" Academic Performance in Economics* in Ile-Oluji Okeigbo Local Government Area of Ondo State, Nigeria. Asia Pacific **Journal of Multidisciplinary Research,** Vol. 5 (2), May 2017.

116. Z. Li & Z. Qiu. *How does Family Background Affect Children's Educational Achievement? Evidence from Contemporary*. **The Journal of Chinese Sociology**. 2018, 1-21

117. I.O. Daniel & D. O. Bimbola: *Do Teachers' Qualifications and Experience Influence Academic Performance of Students in Basic Science in Junior Secondary Schools in Nigeria?* **Journal of Education in Black Sea Region** Vol. 6 (2), 2021.

118. E. Nwafor: *Comparative Study of Students' Academic Performance in Junior Secondary School Certificate Basic Science in Public and Private Secondary Schools in Ebonyi State Nigeria*. **Academic Discourse: An International Journal**

Chapter three

Methodology

The methodology and procedures employed in the study were detailed in this chapter. The research design, population of the study, sample and sampling techniques, validity of research instrument, reliability of the research instrument, administration of research instrument, method of data collection and method of data analysis were all covered in this chapter.

3.1 Research Design

Descriptive survey research design was adopted for this study because it is aimed at ascertaining and establishing the status quo, facts or pieces of information concerning the population. Survey method is appropriate especially for seeking individual opinions, attitudes and perceptions in their natural settings, since the researcher is expected to describe the variables as they are and factual information that describes the existing phenomenon through the use of structured questionnaires therefore, the descriptive survey design is adopted for the purpose of this study.

3.2 Population of the Study

The study's population consists of all Junior Secondary School Students in Oyo State with the total population of 225,580[3]. The target population of the study is all the Junior Secondary School Students in Oyo State.

3.3 Sample and Sampling Techniques

Multi-stage stage sampling procedure was used to arrive at the sample for the study. At the first stage, Oyo state was divided into three using proxy of senatorial districts. These are Oyo South, Oyo North and Oyo Central Senatorial Districts.

Secondly, Local Government Area with highest and lowest number of schools in each of the senatorial districts were selected.

Thirdly, slovin's formula for sample size was adopted.

Lastly, simple random sampling techniques was used to select students from sampled schools as shown below:

Table 3.1: Population of the Study

S/N	Senatorial District	Local Government Areas	Number of schools	LGA with Lowest & Higest schools	Sample School	No. Selected Students & Sample size
		Afijio	17			
		Akinyele	36	36	7	220
		Egbeda	30			
		Ogo Oluwa	13			
		Surulere	23			
		Lagelu	26			
1.	Oyo Central	Oluyole	29			
		Ona Ara	33			
		Oyo East	11	11	4	120
		Oyo West	11	11	4	106
		Atiba	15			
		Sub-total	**244**	**58**	**15**	**446**
		Saki West	22			
		Saki East	11			
		Atisbo	12			
		Irepo	6	6	2	66
		Olorunsogo	4			
		Kajola	16			
		Iwajowa	9			
		Ogbomoso North	15			
2.	Oyo North	Ogbomoso South	16			
		Iseyin	23	23	5	126
		Oorelope	8			
		Itesiwaju	11			
		Orire	18			
		Sub total	**171**	**29**	**8**	**192**
		Ibadan North	42	42	8	264
		Ibadan North West	13			
		Ibadan South West	30			
		Ibadan North East	34			
		Ibadan South East	36			
		Ibarapa East	11			
3.	Oyo South	Ibarapa North	8	8	3	98
		Ibarapa Central	10			
		Ido	26			
		Sub total	**210**	**50**		**362**
Grand Total			**625**	**128**	**30**	**1000**

Source: Nigeria Digest of Educational Statistic

3.4 Description of Research Instrument

The main instruments that were adopted for this research were data from both questionnaire and achivement test. The questionnaire was structured in a simple clear language to elicit data to answer the stated research questions. Items were selected based upon their relevance to performance expectancy, effort expectancy, social influence, facilitating conditions and school settings. The questionnaire is chosen as instrument because it is useful tool for gathering data from a large number of respondents within a period of time. The questionnaire were divided into two sections (Section A and B), Section A were designed to obtain the demographic information of the respondents such as; gender, age bracket, class and religion. Section B has fifteen items and is structured using four points Likert scale of strongly Agree (SA), Agree (A), Disagree (D), and strongly Disagree (SD) will be the response mode for this section.

The second instrument used to collect data on academic achievement was Basic science Achievement Test (BSAT). Test items on developed by the researcher using Basic Education Certificate Examination(BECE) standard test. The test contained 25 items of multiple choice questions of junior secondary Basic science. This helped the researcher obtain first-hand information about students' achievement.

3.5 Validity of Research Instrument

The Basic science content and face validation procedure included a discussion with three experienced teachers about the Basic science test items that were adopted from the items bank of the Basic Education Certificate Examination (BECE) standard exam alongside high school Basic science curricula. During the procedure, a number of criteria were used. The following criteria were used: I the coverage specified in the curriculum standards, and (ii) the topics' acceptability for a multiple-choice format. (iii) the panel's rating of the topics.

Topics with the weight of 3 were considered to be important topics since they were given the widest coverage in the curriculum specification of the Ministry and BECE.

After the construction of questionnaire by the researcher/students, it was given to the supervisor to assess its face and content validity and other two lectures from science education department of Lead City University Ibadan checked the questions for clarity, appropriateness, correctness, commensuration of questions with the topic of the research. And also, two BECE chief examiners, and two Basic science teachers, who all agreed that the items on the questionnaire were face validated. This was important to guarantee that the BSAT and questionnaire instruments were both content and face valid.

3.6 Reliability of the Research Instrument

For the objective of establishing the instrument's reliability, a pilot study was undertaken with fifty students from various schools that were not part of the state's selected schools. The reliability coefficient of BSAT for the pilot research was estimated using the KR_{20} reliability approach. The result was a score of 0.82. BSAT was deemed dependable for the investigation based on the computed reliability coefficient. The Cronbach Alpha technique was used to determine questionnaire reliability, yielding a reliability coefficient of 0.76. As a result, the study's questionnaire reliability was rated equally dependable.

3.7 Administration of Research Instrument and Method of Data Collection

The researcher sought permission from the authorities of the schools concern before administering the instrument. After permission was sort, the two instruments were administered simultaneously. The distribution and collection of the questionnaire was done by the researcher with the help of some research assistants. The collection of the two instruments was immediately after their completion to ensure speedy and accurate return of all copies of the questionnaire.

3.8 Method of Data Analysis

The data collected from administered questionnaires were subjected to statistical manipulations. The descriptive statistics were used to analyze biographical data. The research questions raised were answered using mean and simple percentage while hypotheses raised were tested using regression analysis tools. Statistical Package for Social Science (SPSS) version 23 was used to ensure accuracy of the analysis of the data collected for study.

Endnotes

1. A.J. Vickers, Underpowering in Randomized Trials Reporting a Sample Size Calculation. Journal of Clinical Epidemiology, (5) 6, 2003 , 717–720.

2. Cochran, W. G. (1977). Sampling Techniques (3rd ed.). New York: John Wiley & Sons.

Chapter Four

Results and Discussion of Findings

The purpose of this study was to investigate school plant and family background variables as predictors on academic achievement in junior secondary schools Basic science in Oyo state. This chapter therefore deals with the presentation of data analysis for the study. The results were presented in tables on the basis of the research questions and null hypotheses formulated for the study. Descriptive statistics of percentage mean and standard deviation was used to answer the research questions while regression and independent t-test statistics were used to test the null stated hypotheses at a 0.05 level of significant. The findings were outlined and discussed accordingly.

4.1 Gender of the Respondents

The study sought information on the gender of the respondents. Table 4.1 presents a summary of the gender distribution for all the categories.

Table 4.1 Gender Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Gender	Male	386	38.6
	Female	614	61.4
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

The table 4.1 revealed that out of the 1000 respondents, 616 respondents which constitute 61.4% represented the female participants while 386 respondents representing 38.6% of the sample represented male. This shows that we have more female students in the secondary schools more than the male.

The study sought information on the class of the respondents. Table 4.2 presents a summary of the class distribution for all the categories.

Table 4. 2 : Class Distribution of Respondent

Variables	Categories	Frequency	Percentage
Class	JSS2	490	49.0
	JSS3	510	51.0
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

For the students/respondents in table 510 (51.0%) were JSS 3 students while 490 (49.0%) were JSS2 students.

4.1.3. Age of the Respondents

The study sought information on the age of the respondents. Table 4.3 presents a summary of the age distribution for all the categories.

Table 4.3 Age Distribution of the Respondent

Variables	Categories	Frequency	Percentage
Age	10-12yrs	520	52.0
	13-15yrs	300	30.0
	16-18yrs	180	18..0
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

For the students/respondents in table 520 (52.0%) were aged between 10 and 12 years, 300 (30.0%) were aged between13- 15 years, while 180 (18.0%) were aged between 16 and 18 years. This clearly indicated that many respondents for the study were within the acceptable age.

4.1.4 Parental Education Level of the Respondents

The study sought information on the Parental Education Level of the respondents. Table 4.1.4 presents a summary of the Parental Education Level distribution for all the categories.

Table 4.4: Parental Education Level Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Parental Education Level	primary	290	29
	secondary	440	44
	NCE/OND	210	21
	B.SC	60	6
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

The table 4.1.4 above indicated that 440 (44.0%) of the respondents parent had secondary education, 290 (29.0%) of the respondents parent had primary education, 210 (21.0%) of the respondents parent had NCE / OND education level while 60 (6.0%) of the respondents parent had University (B,SC) education. This clearly indicated that majority of the parents of the respondents had primary and secondary education.

4.1.5 Parental Income Level of the Respondents

The study sought information on the Parental Income Level of the respondents. Table 4.1.5 presents a summary of the Parental Income Level distribution for all the categories.

Table 4.5: Parental Income Level Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Parental Income Level	below 21000	90	9
	21000 - 50000	306	30.6
	51000 - 100000	299	29.9
	10100 - 150000	213	21.3
	above 200000	92	9.2
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

The results from the table above 4.1.5 indicates that the overall number of students whose parents had income status level between 21000 – 50000 naira per month is 306, also, the overall number of students whose parents had income status level between 51000 – 100000 naira per month is 299. However, the overall number of pupils whose parents had income status level between 10100 - 150000 naira per month is 213. The overall number of students whose parents had income status level above 200000 naira per month is 92. The results from the table above indicates that the overall number of students whose parents had income status levelof below 21000 naira per monthis 90.This clearly indicated that many respondents for this study were from average income parent range from 21000 to 100000.

4.2.6 Family Size of the Respondents

The study sought information on the Family size of the respondents. Table 4.5 presents a summary of the Family size distribution for all the categories.

Table 4.6: Distribution of the Respondents' Family Size

Variables	Categories	Frequency	Percentage
Family size	1-2	60	6
	3-4	240	24
	5-6	341	34.1
	7-8	289	28.9
	9& above	70	7
	Total	**1000**	**100.0**

Source: Fieldwork, 2021

The results from the table above indicates that the overall number of students whose parents had Family size level between 5-6 children is 341 (34.1%), hwever, the overall number of students whose Family size level rage between 7-8 children is 289 (28.9%), the overall number of students whose Family size level rage between 3 – 4 children is 240 (24.0%), the overall number of students whose family size level between 9 & above children is 70 (7.0%) and lastly, the results from the table above indicates that the overall number of students whose family size level between 1to 2 children is 60 (6.0%). This clearly shown that majority of the respondents for this study were from large family.

4.2 Analysis of the Research Questions

Research Question One: What is the level of availability of school plant (classroom, science laboratory and school library) of junior secondary school in Basic science in Oyo state Nigeria?

Analysis of the research question one is represented in the Table 4.2

Table 4.7: Descriptive Statistics on Level of Availability of School Plant (Classroom) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev	Remarks
1	Buildings	1000	3.4700	.71411	**HA**
2	Adequate Space	1000	3.1900	.68898	**HA**
3	Duster & Chalk	1000	3.2700	.87084	**HA**
4	Wall Charts	1000	3.0700	.01332	**HA**
5	Chalkboard	1000	3.1900	.82160	**HA**
6	Power Points	1000	2.3200	.14183	**NHA**
7	Visual Teaching Aids	1000	2.3400	.97261	**NHA**
8	Lightling and Ventilation	1000	2.9700	1.01529	**A**
9	Writing Kit	1000	1.1400	1.06879	**NA**
Grand total		**1000**	**2.773333**	**0.700819**	

HA: Highly Available, A: Available, NHA: Not highly Available, NA: Not available
Source: Fieldwork, 2021

Table 4.7 showed that each of the items 1 to 9 on the level of availability of school plant (classroom) used for Basic science teaching in junior secondary schools in Oyo state. The results from the table revealed that obtained grand mean score 2.77, which was above the criterion of 2.50 set for the study. This results of grand mean of 2.773 which is greater than 2.5 decision mean implied that the respondents rated the level of availability of school plant (classroom) used for Basic science teaching in junior secondary schools in Oyo state as adequately available while the average standard deviation of 0.701 indicated that the respondents were not far from the mean and from one another in their responses. Also, the Table above revealed that item1 had the highest mean of 3.47, followed by items 2 to 5. This

indicated that classroom Buildings with adequate space, duster and chalk, chalkboard and wall charts were all highly available for used as classroom materials in Basic Science teaching while averagely some classrooms were lightling and ventilated. Likewise, power points, visual teaching aids were rated to be not highly available in the classroom for used in basic science teaching while the least mean was that of item 9 with a mean score of 1.14 to indicate that writing kit were not available for used. Thus, it can be concluded that school plant (classroom) used for Basic Science teaching in junior secondary schools in Oyo State is adequately available.

Table 4.8 Table Level of Availability of School Plant (laboratory Facilities) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev	Remarks
1	Laboratory.	1000	3.6000	.88255	**HA**
2	Measuring cylinder.	1000	3.0200	.93865	**HA**
3	Skeleton.(Model)	1000	1.6000	.73546	**NA**
4	Dissecting Equipment.	1000	3.3700	.89130	**HA**
5	Litmus paper	1000	3.3200	.35460	**HA**
6	Cotton wool	1000	3.4900	.81916	**HA**
7	Conical flask.	1000	3.1700	.95005	**HA**
8	Calorimeter	1000	3.0200	.88369	**HA**
9	Laboratory funnel.	1000	3.1400	.91750	**HA**
11	Test tube and Racks.	1000	2.8700	.95636	**A**
12	Beaker.	1000	2.9900	.78161	**A**
13	Aquarium.	1000	2.8000	.12343	**A**
14	Thermometer.	1000	3.0700	.15209	**HA**

15	Microscope.	1000	1.0200	.93865	**NA**
16	Magnifying glasses.	1000	3.1200	.81652	**HA**
17	Dropping pipette.	1000	2.8700	.05592	**A**
18	Bunsen burner.	1000	2.9700	.15383	**A**
19	Preserved specimen	1000	2.7500	.09063	**A**
20	Tripod stand.	1000	2.7200	.05045	**A**
Grand Mean			**2.89**	**0.604866**	

HA: Highly Available, A: Available, NHA: Not highly Available, NA: Not available
Source: Fieldwork, 2021

Table 4.8 showed that each of the items 1 to 20 on the level of availability of school plant (Laboratory Facilities) used for Basic Science teaching in Junior Secondary Schools in Oyo State. The results from the table revealed that obtained grand mean score is 2.89, which was above the criterion of 2.50 set for the study. this results of grand mean of 2.89 which is greater than 2.5 decision mean implied that the respondents rated the level of availability of school plant (Laboratory Facilities) used for Basic Science teaching in Junior Secondary Schools is adequately available while the average standard deviation of 0.6048 indicated that the respondents were not far from the mean and from one another in their responses. Also, the Table above revealed that item1 had the highest mean of 3.47, which indicated that laboratory is highly available for teaching of Basic Science that is most schools have laboratory. Likewise, laboratory facilities were highly available as regards items 1 to 9, 14 and 16 as indicated in the above table. However, most of the facilities in the table above were available for used in the teaching of Basic science with the exception of items 2 and 15 i.e Skeleton (Model) and Microscope with the mean score of 1.02 and 1.60 respectively which is below 2.5 mean decision to indicate that Skeleton (Model) and Microscope are not available

laboratory facilities using for the teaching of Basic Science. Finally, with Grand mean of 2.89, it can be concluded that school plant (laboratory facilities) used for Basic science teaching in junior secondary schools in Oyo state is adequately available.

Table 4.9: Table Level of Availability of School Plant (Library Facilities) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev	Remarks
	Library	1000	3.2600	.97055	**HA**
1	eBook	1000	2.4700	.71411	**NHA**
2	Magazines: titles, suppliers and costs (print and e-zines)	1000	3.1900	.68898	**HA**
3	Suppliers of stationery and library consumables: barcodes, covering materials, labels etc	1000	1.0200	.03865	**NA**
4	Library shelving, furniture and equipment suppliers	1000	2.8200	.81652	**A**
5	E-library services	1000	2.2700	1.05592	**NHA**
6	Professional support	1000	2.7001	.90911	**A**

HA: Highly Available, A: Available, NHA: Not highly Available, NA: Not available

Source: Field Work, 2021

Table 4.9 showed that each of the items 1 to 6 on the level of availability of school plant (library facilities) used for Basic science teaching in junior secondary schools in Oyo State. The results from the table revealed that Obtained grand mean score 2.70, which was above the criterion of 2.50 set for the study. This results of grand mean of 2.70 which is greater than 2.5 decision mean implied that the respondents rated the level of availability of school plant (library facilities) used for Basic Science teaching in Junior Secondary Schools is adequately available while the average standard deviation of 0.909 indicated that the respondents were not far from the mean and from one another in their responses. Also, the Table above revealed that item1 had the highest mean of 3.26 which indicated that library is highly available for teaching of Basic Science that is most schools are having library. The

results also, revealed that item3 i.e. Magazines with the mean score of 3.19 is highly available in the library for used in the teaching of Basic Science. However, Library shelving, furniture and equipment suppliers and Professional support are adequately available as indicated by mean scores of 2.82 and 2.70 respectively. Likewise, eBook, E-library services were rated to be not highly available in the library for used in basic science teaching while the least mean score was that of item 3 with a mean score of 1.02 to indicate that Suppliers of stationery and library consumables was not available for used. Thus, it can be concluded that school plant (library facilities) used for Basic Science teaching in junior secondary schools in Oyo state is adequately available according to the grand mean score of 2.70.

Research Question Two: To what extent is the level of family background (education status of parents, family size and parental income) on academic achievement of Junior Secondary Schools in Oyo State, Nigeria?

Analysis of research question two representing the crosstab analysis of the students' family background in relation to their academic achievement outcome is shown in table 4.3.

Table 4.10: Crosstab Analysis of the Students' Parental Educational Level as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		**16-25 marks**		**26-35 marks**		**36-50 marks**		**Total**
Parental Education Level	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Primary	228*	78.62	33	11.38	19	6.55	10	3.45	290
Secondary	283*	64.32	81	18.41	44	10	32	7.27	440
						17.14			
NCE/OND	24	11.43	75	35.71	36		75*	35.71	210
B.SC	3	5	13	21.67	21	35	23*	38.33	60
Total	**538**		**202**		**120**		**140**		**1000**

****Highest number of students according to their parent educational level depending on academic achievement***

Source: Fieldwork, 2021

The table 4.10 above represents crosstab result of level of education status of parents' impact as against the academic achievement of Junior Secondary Schools in Basic Science. The overall number of students whose parents had a primary education level is 290, according to the result from the table above. However, 228 (78.62%) out of 290 students score the lowest marks of between 0 -15 while only 10 (3.45%) of students whose parents had a primary education level were able to obtain highest marks range of 36 to 50. Also, the overall number of students whose parents had a secondary education level is 440, according to the result from the table above. However, 283 (64.32%) out of 440 students score the lowest marks of between 0 -15 while only 32 (7.27%) of students whose parents had a secondary education level were able to obtain highest marks range of 36 to 50. Furthermore, the overall number of students whose parents had a NCE/OND education level is 210, according to the result from the table above. However, 75 (35.71%) out of 210 of students whose parents had a secondary education level were able to obtain highest marks range of 36 to 50 and 16 to 25 respectively while only 24 (11.43%) students obtained the lowest marks range from 0 to 15. Finally, the overall number of students whose parents had a B.SC education level is 60, according to the result from the table above. However, 23 (38.33%) students whose parents had a secondary education level were able to obtain highest marks range of 36 to 50 and 21 (35.0%) students obtained marks range of 26 to 35 respectively while only 3 (5.0%) students obtained the lowest marks range from 0 to 15. It may be established that students with parents who have completed secondary school had the highest population in the study area. Additionally, children whose parents had a tertiary education level did better than those whose parents had a primary or secondary education level.

Table 4.11: Crosstab Analysis of the Students' Parental Income Level as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		**16-25 marks**		**26-35 marks**		**36-50 marks**		**Total**
Parental Income Level	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
below 21000	37*	41.11	34	37.78	14	15.56	5	5.56	90
21000 – 50000	134*	43.79	98	32.03	18	5.88	56	18.30	306
51000 – 100000	146*	48.83	102	34.11	31	10.37	20	6.69	299
10100 - 150000	52	24.41	28	13.15	87*	40.85	46	21.60	213
above 200000	20	21.74	12	13.04	31*	33.70	29	31.52	92
Total	**389**		**274**		**181**		**156**		**1000**

H***ighest number of students according to their parent income level depending on academic achievement***
Source: Fieldwork, 2021

The table 4.11 above represents crosstab result of level of Parental income status impact as against the academic achievement of junior secondary schools in Basic science. The results from the table above indicates that the overall number of pupils whose parents had income status level between 21000 – 50000 naira per month is 306. However, 134 (43.79%) of those students score the lowest marks range from 0 -15 while 56 (18.30%) of those students were able to obtain highest marks range of 36 to 50.

Likewise, the overall number of pupils whose parents had income status level between 51000 – 100000 naira per month is 299, according to the result from the table above. However, 146 (48.83%) of those students score the lowest marks range between 0 -15 while only 20 (18.30%) of those students were able to obtain highest marks range of 36 to 50.

Also, the overall number of Students whose parents had income status level between 10100 - 150000 naira per month is 213, according to the result from the table above. However, 87

(40.85%) of those students were able to obtain average marks range from 26 to 35, closely followed by those who score highest marks rage from 36 to 50 with 46 (21.60%) while 52 (24.41%) of those students score the lowest marks range between 0 -15.

Furthermore, the overall number of Students whose parents had **income status** level above 200000 naira per month is 92, according to the result from the table above. However, 31 (33.70%) of those students were able to obtain average marks range from 26 to 35, closely followed by those who score highest marks rage from 36 to 50 with 29 (31.52%) while 20 (21.74%) of those students score the lowest marks range between 0 -15.

The results from the table above indicates that the overall number of Students whose parents had income status levelof below 21000 naira per monthis 90. However, 30 (41.11%) of those students score the lowest marks range between 0 -15 while only 5 (5.56%) of those students were able to obtain highest marks range from 36 to 50. It can be clearly inffered from the results that students from high income family performed better than those from low income family.

Table 4.12 Crosstab Analysis of the Students' Family as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		**16-25 marks**		**26-35 marks**		**36-50 marks**		**Total**
Family Size	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
1-2	19	31.67	23*	38.33	11	18.33	7	11.67	60
3-4	34	14.17	32	13.33	115*	47.92	59	24.58	240
5-6	134*	39.30	80	23.46	58	17.01	69	20.23	341
7-8	111	38.41	119*	41.18	17	5.88	42	14.53	289
9& above	42*	60.00	8	11.43	9	12.86	11	15.71	70
Total	**309**		**262**		**210**		**219**		**1000**

highest number of students according to their family size depending on academic achievement

Source: Fieldwork, 2021

The table 4.12 above represents crosstab result of level of Family size impact on academic achievement of Junior Secondary Schools in Basic Science. The results from the table above indicates that the overall number of Students whose parents had Family size level between 5-6 children is 341. However, 134 (39.30%) of those students score the lowest marks range from 0 -15 while 69 (20.23%) of those students were able to obtain highest marks range from 36 to 50. Likewise, the overall number of pupils whose Family size level rage between 7-8 children is 289, according to the result from the table above. However, 119 (41.18%) of those students score range between 16 – 25, this closely followed by 111 (38.41) of students whose score the lowest marks of 0-15 while 42 (14.53%) of those students were able to obtain highest marks range of 36 to 50. Also, the overall number of pupils whose Family size level rage between 3 – 4 children is 240, according to the result from the table above. However, 115 (47.92%) of those students were able to obtain average marks range from 26 to 35while 59 (24.58%) of those students score the lowest marks range between 0 - 15. Furthermore, the overall number of pupils whose family size level between 9 & above children is 70, according to the result from the table above. 42 (60.0%) of those students score the lowest marks range from 0 -15 while 11 (15.71%) of those students were able to obtain highest marks range from 36 to 50. Lastly, the results from the table above indicates that the overall number of pupils whose family size level between 1to 2 children is 60. However, 23 (38.33%) of those students were able to obtain average score thatrage from26 – 35, followed by those who score highest marks rage from 36 to 50 with 19 (31.67%) while only 7 (11.67%) of those students were able to obtain highest marks range from 36 to 50. It can be concluded that students with family size rage from 5 to 6 children had the highest population in the study area. Additionally, students from small family size performed better that those from large family size.

Research Question Three: What is the level of academic achievement of Junior Secondary Students in Basic Science in Oyo state?

Analysis of research question three is represented in the table Table 4.4

Table 4.12: Analysis of the Level of Academic Achievement of Junior Secondary Students in Basic Science

Academic achievement (Student scores)	Frequency	Percent
0-15	309	30.9
16-25	312	31.2
26-35	210	21
36-50	169	16.9
Total	**1000**	**100.0**

Source: Fieldwork, 2021

The table 4.12 above presents the analysis of the level of academic achievement of junior secondary students in Basic Science. It revealed that 312 representing 31.2% of the respondents out total respondents of 1000 scores range from 16 to 25 out of total mark of 50, 309 representing 30.9% of the respondents scored between the range of 0 to 15 marks, 210 representing 21% of the respondents scores range from 26 to 35 marks while 169 representing 16.9% of the respondents scored between the range of 36 to 50 marks. Thus, most students' marks fall within the range of 0 to 25 marks. As a result, it can be inferred that junior high school pupils' academic achievement in Basic science is fairly average.

4.3 Test of Hypotheses

HO_3: There is no significant combined influence of school plant variables (classroom, science laboratory and school library) and family background variables (education status of parents, family size and parental income) on academic achievement of junior secondary school in Basic science

Table 4.13: Joint Influence of School Plant Variables (Classroom, Science Laboratory and School Library) and Family Background Variables (Education Status of Parents, Family Size and Parental Income) on Academic Achievement of Junior Secondary School in Basic Science

R	R Square	Adjusted R Square	Std. Error of the Estimate
.417	.174	.168	9.6335

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3046.328	2	507.721	7.511	.000
Residual	9665.865	998	67.593		
Total	12712.193	1000			

Source: Fieldwork, 2021

Table 4.13 shows the Joint contribution of school plant variables and family background variables influence on academic achievement. The table also shows a coefficient of multiple correlation (R = .417 and a multiple R2 of .174. This means that 17.4% of the variance is accounted for by six predictor variables when taken together. The significance of the composite contribution was tested at $P < .05$. The table also shows that the analysis of variance for the regression yielded a F-ratio $_{(2, 998)}$ of 7.511 (significant at 0.05 level). This implies that the joint contribution of school plant variables and family background variables influence on academic achievement was significant and that other variables not included in this model may have accounted for the remaining variance.

HO_4: there is no significant relative influence of school plant variables (classroom, science laboratory and school library) and family background variables (education status of parents, family size and parental income) on academic achievement of junior secondary school in Basic science.

Table 4.14: Relative Contribution of School Plant Variables and Family Background Variable Influence on Academic Achievement

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	35.328	2.813		26.249	.000
Classroom	3.961	1.359	.106	2.843	.015
Laboratory	5.125	.788	.593	6.503	.000
Library	-3.815	1.036	.335	-3.681	.000
Parental education	.048	.017	.710	3.450	.000
Parental income	.996	.019	.601	4.389	.000
Family size	-.009	.017	-.023	-.513	.608

Source: Fieldwork, 2021

Table 4.14 reveals the relative contribution of the three independent variables to the dependent variable. Classroom facilities (β =.106, t = 2.843, P <.05), laboratory facilities (β =.593, t = 6.503, P <.05), and library facilities (β =.335, t = -3.68,1 P <.05) are the relative contributions of school plant characteristics on academic success given as beta weights. since all of the p values are less than 0.05. It can be concluded that the classroom, laboratory, and library facilities had a considerable relative impact on students' academic achievement in basic science.

Also, the relative impact of family background factors on students' academic achievement in Basic science is shown in Table 4.8. Parental educational level (β =.710, t = 3.450, P < 05), parental income (β =.601,t = 4.389, P < 05), and family size (β =-.023, t = -.513 P >.05) are the relative contributions of family background variables effect on academic

success given as beta weights. While parental educational level and parental income had a substantial impact on kids' academic achievement in Basic science, family size did not.

4.4 Discussion of Findings

According to the findings of research question one for this study, the school plant provided in the school includes well-built classrooms, a science lab, and a school library. This suggested that classroom buildings had sufficient space, duster and chalk, chalkboards, and wall charts were all readily available as classroom supplies in Basic Science education, and that some classrooms were light and ventilated on average. In addition, based on the findings, library shelving, furniture, and equipment providers, as well as professional support, are all readily available. This support the findings that instructional equipment, facilities, and playgrounds were fairly available for teaching and learning of economic; with the premise that school buildings should have sufficient space, ventilation, lighting, humidity, and temperature, school plants are key components of the educational system, and their presence increases instructors' teaching abilities as well as students' academic accomplishment[9,113&117].

It was revealed from the result of research question two for this study that children whose parents had a tertiary education level did better than those whose parents had a primary or secondary education level. Furthermore, the results indicated that students from higher-income families scored better than those from lower-income families. This is in line with the findings that children's academic achievement is influenced by their parents' socioeconomic status, as well as the findings that Parents' Educational Level, Income, and Academic Adjustment influence students' academic achievement[102&108]. Furthermore, pupils from small families outperformed students from large families. Similarly, parental involvement, occupation, interest in education, learning resources at home, family size, stability, background, social stratification, and socioeconomic position of parents are all

regarded to play a substantial effect in influencing adolescents' academic progress, according to certain results[101,112&114].

The academic achievement of junior high school students in Basic science is fairly average, according to research question three for this study. This is in line with the findings of a study that found that schools with proper equipment and facilities are more likely to provide children with a higher level of learning, motivation and academic achievement than those without[6]. Although the availability of school facilities and equipment is not a necessary prerequisite for exceptional performance[7].

The analysis of hypothesis one which sought the significant relative influence of school plant variables (classroom facilities, science laboratory facilities and library facilities) on academic achievement of Junior Secondary Schools Basic Science in Oyo State revealed that school plant variables have positive influence on academic achievement of Basic Science students. This implies that the availability of well structured classroom and facilities, spacious and well equipped laboratory, and availability and accessibility of library facilities had a considerable relative impact on students' academic achievement in Basic science. This supports the work of [7]who stated that the environment, facilities, equipment and buildings constitute school plant and contributing to students' academic success. Thus, modern schools require suitable classroom, libraries, recreational facilities, assembly hall, school farm, staff rooms, office etc. for the comfort and convenience of both staff and students particularly teaching learning process[5]. Furthermore, this study is in agreement with some scholars that the nature, conditions, adequacy and relevance of school plant have direct impact on the learning engagement and students' academic achievement[2,4&5]. However, findings of [1]that school facilities are one of the potent factors that contribute to academic achievement in the school system. These include school buildings, classrooms, laboratories, furniture, apparatuses, equipment and other instructional materials. He went further to say that their

availability, relevance and adequacy contribute to academic achievement. This corroborates the results of this study that the availability and accessibility of laboratory and library facilities had positive impacts on student academic achievement in Basic science.

The results of the analysis of hypothesis two which sought on the relative influence of family background (Parents' educational status, financial status of parents and family size) on the academic achievement of Junior Secondary Schools Basic Science in Oyo State revealed clearly that while parental educational level and parental income status had a substantial impact on students' academic achievement in Basic Science, family size did not. Since most students from the selected public secondary schools are from large family size and they are being seen exceptional cases where students from such family background are very sound academically may contribute to why family size seem influencing academic achievement to them. However, there is significant influence of family background on the academic achievement of Junior Secondary Schools Basic Science. This is in line with the findings of the scholars that children's attainment depends on inputs of time and money from their parents; the more children there are in the family the less of both inputs. These inputs are not money alone, but other essential things like time, attention and resource dilution[9,10&11]. However, the children from larger families have lower levels of education[11]. Furthermore, that there was a need to instruct parents on motivational practices such as encouragement of persistence, effort, mastery of subject area, curiosity and exploration that are likely to impact on the academic achievement of the student corroborate findings from this study[13].

The interpretation of the results from the hypothesis three on the joint influence of school plant variables (classroom, science laboratory facilities and library facilities) on academic achievement of Junior Secondary Schools Basic Science in Oyo State indicated that the joint contribution of school plant variables influence on academic achievement of students in Basic Science was significant. This is in agreement with the scholars' views that

School Plants with well-designed school building, classrooms, toilets, and fresh drinking water facilities, libraries, offices, laboratories, and other materials as well as infrastructure are quite helpful to bring betterment in the educational system due to which teachers and students are highly motivated towards the teaching-learning process[3,4,6&7].

From the result of hypothesis four which based on the joint contribution of family background variables influence on students' academic achievement in Basic Science was significant. This means that there is significant joint influence of family background on the academic achievement of Junior Secondary Schools BasiScience students. This is however in congruent with scholars' views that parents and home environment in students' academic achievement is a main factor which shapes the initial constellation of students' attitudes they develop toward learning parents' and also positive value attached to education is a function of their educational achievement [8,9,12&13].

Endnotes

1. H. Wordu & D. Oneobari. *School Plant Provision and Academic Performance of Secondary School Students in Tai and Eleme Local Government Areas, Rivers State.* **International Journal of Innovative Education Research** 7(1):7-14, Jan.-Mar. 2019.

2. K.. Julius, *The Effect of Laboratory Exposure on Students' Academic Achievement in Practically Based Subjects in Secondary Schools in Wakiso District. A Dissertation Submitted to the College of Education, Open and Long Distance Learning in Partial Fulfilment of the Award for Bachelor of Science with Education of Kampala* **International University** September, 2017.

3. W. Y. Ibrahim, H. A. Umar & I. Clement. ***Impact of School Facilities on Students' Academic Achievement***. **International Journal Advance Resources.** 5(12), 878-889. www.journalijar.com Article DOI: 10.21474/IJAR01/603, 2017.

4. N. Abu Bakar, I. Mamat & M. Ibrahim. *Influence of Parental Education on Academic Performance of Secondary School Students in Kuala Terengganu.* **International Journal of Academic Research in Business and Social Sciences**, Vol. 7 (8), 296-309, 2017.

5. O. Jimoh, T. Nathaniel & A. Ojo-Maliki. *Influence of School Plant on Secondary School Students" Academic Performance in Economics in Ile-Oluji Okeigbo Local Government Area of Ondo State, Nigeria.* Asia Pacific **Journal of Multidisciplinary Research,** Vol. 5 (2), May 2017.

6. Z. Li & Z. Qiu. *How does family background affect children's educational achievement? Evidence from Contemporary.* **The Journal of Chinese Sociology.1-2.** (2018). https://doi.org/10.1186/s40711

7. P. B. Boma: *School Plants and Academic Performance of Secondary School Students. J. U. Williams (Eds).* **International Journals of Innovative Psychology and Social Development.** 6 2018.

8. C.N. Nnamani, H.G. Dikko & L.M. Kinta*, Impact of Students' Financial Strength on their Academic Performance: Kaduna Polytechnic Experience.* **An International Multidisciplinary Journal**, Ethiopia Vol. 8 (1), Serial No. 32, 2014, p. 83-98.

9. Z. Li & Z*, How does Family Background affect Children's Educational Achievement? Evidence from Contemporary China*. volume 5, Article number: 13, 2018.

10. B.O. Abdu-Raheem, *Parents' Socio-Economic Status as Predictor of Secondary School Students' Academic Performance in Ekiti State, Nigeria.* ***Journal of Education and Practice*****,** v6 n1 p123-128, 2015.

11. D.H. Caro, "Socio-Economic gaps in Subject Interest: the Mediating role of Parental Cognitive Involvement, Volume 6, Article number: 13, 2018.

12. D.C. Nweke, J.C. Ihejirika, & Z.D. Deebom, *Influence of Family Background on Academic Achievement of Pupils in Primary Schools in Port Harcourt City Local Government Area, Rivers State.* **International Journal of Education and Evaluation** ISSN 2489-0073 Vol. 4 No. 3 2018.

13. N.E. Hill, O.R. Castelino, & J.E. Lansford, "Parents academic involvement as related to school behaviour achievement and aspiration: Demographic variations across adolescence", Child Development 75 (5): 1491-1509. 2018.

Chapter Five

Conclusion

This chapter presents summary of the major research findings and conclusions of the study. The chapter also presents recommendations, contribution

to knowledge and suggestions for further researches.

5.1 Summary of the Findings

The study investigated the school plant and family background as predictors of academic achievement of Junior Secondary School Basic Science in Oyo State, Nigeria. Three research questions were raised and answered and two hypotheses were formulated and tested to guide the study at .05 level of significance. The study used survey research design. A sample of 1000 students was utilized for the study. The research instruments used for data collection were both questionnaire and Basic Science Achievement Test (BSAT). The instrument was subjected to face and content validity and the Cronbach Alpha reliability estimate and KR20 of 0.73 and 0.84 were obtained respectively. The data collected were analyzed using descriptive statistics for the stated research questions. Multiple regression and linear regression statistics were used to test the stated hypotheses.

The results using multiple regressions revealed that the regression correlation (R) is .736,R = .417 and a multiple R2 of .174. This means that 17.4% of the variance in accounted for by school plant variables (classroom, science laboratory facilities and library facilities) and family background variables when taken together to predict students' achievement in Basic science. The significance of the composite contribution was tested at P < .05. The results show that the analysis of variance for the regression yielded a F-ratio (2, 998) of 7.511 (significant at 0.05 level). This implies that the joint contribution of school plant variables and family background variables influence on academic achievement was significant.

Furthermore, it was revealed equally that contribution of the individual variables factors as indicated by standardized Beta (B) weights in order of magnitude. Laboratory facilities (β =.593, t = 6.503, P <.05), and library facilities (β =.335, t = -3.681, P <.05) and classroom facilities (β =.106, t = 2.843, P <.05). This indicated that classroom, laboratory, and library facilities had a considerable relative impact on students' academic achievement in basic science.

Also, the relative impact of family background factors on students' academic achievement in Basic science. Parental educational level (β =.710, t = 3.450, P < 05), parental income (β =.601,t = 4.389, P < 05), and family size (β =-.023, t = -.513 P >.05) are the relative contributions of family background variables effect on academic success given as beta weights. While parental educational level and parental income had a substantial impact on students' academic achievement in Basic science, family size did not.

5.2 Conclusion

This study examined school plant and family background as predictors of achievement of Junior Secondary School Basic Science in Oyo State, Nigeria. The educational environment and students' family background have a significant impact on their learning outcomes. The classroom, library, and Basic science laboratory, along with parental education level of parent, parental income, and family size, are all elements that influence students' academic success in Basic science. This study can therefore conclude that the impacts of combining school plant and family background variables on student academic achievement were beneficial. This means that academic achievement is influenced not only by school circumstances, but also by factors at home.

5.3 Recommendations

The following recommendations were made in light of the findings and conclusions reached in this current study.

1 Features of school buildings and classroom facilities, such as ventilation, space, and classroom height, should be insisted upon. Teachers and students should instill positive habits of cleanliness and order in both indoor and outdoor learning environments.

2 Adequate library, laboratory, and workshop equipment should be supplied, with plans in place to improve and maintain them.

3 School facilities should be used as a priority, and users of school facilities should be taught how to use them to help students perform better.

4 Government should adequately equipped science laboratories across the state for effective teaching and learning of Basic science.

5 Policymakers and instructors should discuss how to maximize student usage of the library and library services, increasing the chances of favorable outcomes. Interventions that help students learn more effectively.

6 Parents of high socioeconomic status children (adolescents) should volunteer to help schools with educational growth by voluntarily supplying learning resources to the less fortunate children (adolescents).

7 Education is a crucial industry in developing countries like Nigeria since it supplies the necessary manpower for development. As a result, parents should view their children's education as a worthwhile investment and make all necessary provisions to ensure that they are adequately prepared to become good and productive members of society.

8 Private schools have sprung up all throughout the country, making it impossible for government institutions to function efficiently. This is because most of our teachers and the country's wealthier citizens prefer private schools to public schools for their children,

whereas those who are less fortunate have no choice but to continue with public education. To close the gap, the government should reform all public schools across the country and ensure that talented teachers are hired and fairly compensated. Basic amenities should also be given for public schools in order to maintain a high level. Fees for school, tuition, and all other academic levels should be made reasonable.

9 Scholarships are disappearing at an alarming rate. Because Nigeria's education sector has been politicized, his scholarships intended for the less fortunate are being channeled to the wealthy. Financial institutions and corporate centers have been converted into schools. Governments and non-governmental organizations (NGOs) should encourage all citizens to pursue higher education by offering scholarships to those who are less fortunate. Scholarships that are done with sincerity of purpose will allow less fortunate pupils to benefit from such a scheme.

10 The government should educate families about the necessity of supporting their children's education in order to improve their academic performance. School supervisors, principals, homeroom teachers, and education supervisors should all advise parents on how to best use their resources to assist their children's academic progress at whatever level of education.

11 Finally, everyone's primary purpose should be to raise educational standards to the highest level possible. The government, political leaders, spiritual leaders, parents, and community elders should work together to restore education's lost glory in this country.

5.4 Contribution to Knowledge

The findings of this study add to the body of knowledge that; classroom facilities, library facilities, and Basic science laboratory facilities, as well as parental education level, parental income, and family size, all have an impact on students' academic achievement in Basic science in Oyo state, Nigeria.

The findings of this study contribute to knowledge to engage National Research and Development Council (NERDC), National Education Plan and curriculum implementation and assessment on the importance of home factors influence on students' academic achievement.

5.5 Suggestions for Further Studies

Based on the findings and conclusions of this study, it is clear that it did not cover all elements; therefore, the following recommendations for further research in the following areas were made.

1. A comparative utilizing the all variables to the study should be carried out across Oyo state and six geopolitical zones to see if all of the independent variables influence students' Basic science achievement in junior secondary schools in Oyo state, Nigeria.
2. An investigation into the possible ways to reform and re-orientate education agents in Nigeria.
3. An inquiry into a holistic approach to improving the nation's educational standards.

Bibliography

Journals

Abbas M. & Nazir R.. "*Impact of Socio-Economic Status on Academic Performance of Students)* A Case Study of Bahawalpur)". **Journal of Economics and Economic Education Research,** 21(2), 2020.

Abdu-Raheem B.O., *Parents' Socio-Economic Status as Predictor of Secondary School Students' Academic Performance* in Ekiti State, Nigeria. **Journal of Education and Practice**, 6(1), 2015, 123-128.

Abid M., Muhammad A., Aaqib S. & Farhat S.. "*The Effect of Self-Efficacy on Academic Performance at Higher Level of Learning:* A Case Study of Punjab University Lahore. **Journal of Educational Sciences and Research**". 6(1), 2019, 33-47.

Abraham, A.*The Family Effect on Academic Performance in School. A Case Study of selected Schools in Kabale District.* Academic Paper, 2017.

Abu Bakar, Mamat I & Ibrahim M.. *Influence of Parental Education on Academic Performance of Secondary School Students in Kuala Terengganu*. **International Journal of Academic Research in Business and Social Sciences,** 7 (8), 2017, 296-309.

Acheampong E.Y.. "*Giving back to society: Evidence from African sports migrants. Sport in Society Cultures, Commerce, Media Politics". 22 (12): 2045-20641.* Doi/full/10.1080/17430437.2018.1551367, 2018.

Acheampong F.E., & Bouhaouala M.. *"African Footballers' life Cycles According to the Analysis of Transfer value along their Career path*: **A Case Study of Ghanaian Players. Sport in Society Cultures,** Commerce, Media Politics". 22 (12), 2019, 2024– 2044.

Adenegan K.E.. *Setting Basic Science Laboratory in Schools. Lecture of Numerical Analysis, Department of Basic Science Adeyemi College of Education Ondo, Nigeria,* 2019, 7-10.

Adenegan K.E.: *Setting Basic Science Laboratory in Schools and Basic Science Laboratory,* 8, 2020.

Adeyemi M. & Adeyemi S. B., "*Personal Factors as Predictors of Students' Academic Achievement in Colleges of Education in South Western Nigeria*," **Academic Journal,** 9, (4). 2014, 97-109.

Adimonyemma N.R., Akachukwu & Igboabuchi N.A.. "*Impact of Class Size on Students' Academic Performance in Biology in Idemili North Local Government Area of Anambra State***. International Journal of Education and Evaluation** 4(8), 2018, 22-32.

Akomolafe C.O & Adesua V.O., *The Impact of Physical Facilities on Students' Level of Motivation and Academic Performance in Junior secondary Schools in* South West Nigeria. **Journal of Education and Practice**, 7(4), 2016, pp 38-42.

Akrofi. *"Academic Achievement of Primary School Pupils: Investigating Home Environment Factors Contributing to Low Academic Performance".***E-Journal of Humanities, Arts and Social Sciences** (EHASS), 1(2) , 2020, 49-57.

Aliyu G.A., *Influence Of Socio-Economic Status On Academic Achievement of Junior Secondary Students*, In Nassarawa Zonal Education Area Of Kano State, Nigeria. **Asian Journal of Educational Research**, 4(4), 2016, 20-30.

Amadi & Ezeugo C.R.. "*Physical Resources Availability and the Academic Performance of Students in the Universal Basic Education Scheme*, *Rivers State*". **International Journal of Innovative Development and Policy Studies** 7(1), 2019. 13-23.

Arowojolu M. I., Yinusa S.T., Ameh F.A & T. A. Arowojolu, *School Plants Planning and Maintenance as Correlate Students' Academic Performance in Irele Local Government Area of Ondo State, Nigeria,* 2019, 87-92.

Assoumpta U.I & Andala H.O.. *"Relationship between School Infrastructure and Students Academic Performance in Twelve Years Basic Education in Rwanda".* **Journal of Education**, 3(1), 60 - 74. Retrieved from https://stratfordjournals.org/journals/index.php/journal-of education/article/view/511 , 2020.

Bala A.M., Yahaya I & Aliyu J.. "*Towards Socio-Economic Status of Parents and Access to Quality Education in Secondary Schools Education in Nigeria* "**International Journal of Research and Scientific Innovation** (IJRSI) 7(5), 2020.

Bello B.M., *Educating Border Dwellers to Promote Peace and Security in an Electoral Process: Perception of Community Members'***Journal Pengabdian Kepada Masyarakat:** Teknologi dan Aplikasi, 2020.

Besong J.B., *Possible Opportunities for Educational System Efficiency and Effective Governance in Cameroon.***International Journal of Managerial Studies and Research** (IJMSR), 2(8), 2017, 68-74.

Bhat1 M.A, Joshi J & Wani I.A . "*Effect of Socio Economic Status on Academic Performance of Secondary School Students"***The International Journal of Indian Psychology,** 3(4), 2017, 56.

Boma B.: *School Plants and Academic Performance of Secondary School Students. J. U. Williams (Eds).***International Journals of Innovative Psychology and Social Development,** 6, 2018.

Caldas S. J Ban & kston C. L, *"The Effect of School Population Socioeconomic Status on Individual Student Academic Achievement,"***Journal of Educational Research**, 90, 2017, 269-277.

Camp M. D.. "*The Power of Teacher-Student Relationships in Determining Student Success"*

Caro D.H., "*Socio-Economic gaps in Subject Interest: the Mediating role of Parental Cognitive Involvement.* Large-scale Assessments in Education volume 6, Article number, 13, 2018.

Chandio & AliM., *The Role of Socialization in Child's Personality Development.* **Research Journal of Modern Sciences,** I, 2019, 70.

Chen, "*Family Background, Ability and Students' Achievement in Rural China- Identifying the Effects Of Unobservable Ability Using Feminine-Generated Instruments",* http.//repository.upenn.edu/gansu papers, 26 , 2018.

Chirkina A. & Khavenson T. E. *"School Climate A History of the Concept and Approaches to Defining and Measuring it on PISA Questionnaires*". **Russian Education & Society Journal,** 60(2), 2018, 133–160.

Daemi M.N., A. Tahriri & A.M. Zafarghandi. "*The Relationship between Classroom Environment and EFL Learners' Academic Self-Efficacy*". **International Journal of Education & Literacy Studies,** 5, 2017.

Daniel O. & Bimbola D. O.*: Do Teachers' Qualifications and Experience Influence Academic Performance of Students in Basic Science in Junior Secondary Schools in Nigeria*? **Journal of Education in Black Sea Region**, 6 (2), 2021.

Daniyal M, Nawaz ., T., M. Aleem, M. & Hassan A, "*The Factors Affecting the Students' Performance:* A Case Study of Islamia University of Bahawalpur, Pakistan," **African Journal of Education and Technology,** 1(2), 2017, 45- 51.

Danjuma: *A Comparative Study of Upper Basic Science Students' Academic Performance in Public and Private School in Taraba State*., Nigeria. **Journal of Research in Humanities and Social Science** ,7(3), 2019. 26-31

Da-Silva and dos Santos R.C.. "*Balancing family agriculture to improve sustainable public management of school feeding*". **Brazilian Journal of Development,** 2020.

Davidescu A.A., Simona-Andreea A, Andreea P. & Casuneanu I.. "*Work Flexibility, Job Satisfaction, and Job Performance among Romanian Employees*— Implications for Sustainable Human Resource Management". www.mdpi.com/journal/sustainability. 2020.

Dukpe K.B., Agyekum B.O. & Konlan B., *School Libraries and Students' Academic Achievements in Bunkpurugu-* Yunyoo District of Northern Ghana. **Library Philosophy and Practice (e-journal)** , 2018.

Ella E.: *Influence of Family Size and Family Type on Academic Performance of Students. (Eds). Calabar*: IJHSSE Publications, 2 2017.

Eshetu A.S. "*Parental Socio-Economic Status as a Determinant Factor on Academic Performance of Students in Regional Examination*: Case of Dessie town; Ethiopia". **International Journal of Academic Research in Education and Review**. 3(9), 2017, 247-256.

Evans S. & Julius K. M.: *The Relationship between Study Habits and Academics Achievement of Students.* **International Journal of Educational Administration and Policy Studies**, 7, 2017.

Farooq M.S., Chaudhry A.H., Shafiq M., & Berhanu G., "*Factors Affecting Students' Quality of Academic Performance: A Case of Secondary School level",***Journal of Quality and Technology Management** 7(2), 2017, 10-14.

Furstenberg F & Hughes M.E., *"Social capital and successful development among at- risk youth,*" **Journal of Marriage and the Family**, 57(2), 1995, 580-592

Gebauer M.M., McElvany N., Bos W., Köller O. & Schöber C.. *"Determinants of Academic Self-Efficacy in Different Socialization Contexts:* Investigating the *Relationship Between Students' Academic Self-Efficacy and Its Sources in Different Contexts*". **Social Psychology of Education**, 23,2020, 339–358.

Geremew A.: *Factors that Influences Students Academic Performance: A Case of Rift Valley University,* Jimma, Ethiopia. In G. D. Abdissa (Ed). Ethiopia**: Journal of Education and Practice,** 6 ,2017.

Goddard R.D., "*Relational Networks, Social Trust, and Norms: A Social Capital Perspective on Students' Chances of Academic Success*," **Educational Evaluations and Policy Analysis,** 25, 2017, 59-74.

Hill N.E., Castelino O.R & Lansford J.E., "*Parents Academic Involvement as Related to School Behaviour Achievement and Aspiration: Demographic Variations Across Adolescence", Child Development* 75 (5), 2018, 1491-1509.

Ibrahim Y., Umar H. A. & Clement I. . *Impact of School Facilities on Students' Academic Achievement.* **International Journal Advance Resources**, 5(12), 2017, 878-889.

IsebeM.. *"Effective Selection and Organization of Information Resources in School Library".* **International Journal of Library and Information Science Studies,** 1(1), ,2017, 27 – 33.

Ishak N.M., Satar N.H.M. & Zakaria R.H. . *"Parental Involvement in Education among Urban Families in Malaysia,* 12(2), 2018, 11-23.

Jimoh O., Nathaniel T. & Ojo-Maliki A.. *Influence of School Plant on Secondary School Students" Academic Performance in Economics in Ile-Oluji Okeigbo Local Government Area of Ondo State, Nigeria*. **Asia Pacific Journal of Multidisciplinary Research,** 5 (2), 2017.

Joy N. O.: *Impact of School facilities on Students Academic Performance in Public Secondary School*, 2017.

Kayıkç, Yılmaz O. & Şahin A.. "*The Views of Educational Supervisors on Clinical Supervision*". **Journal of Education and Practice**, 8(21), 2017.

King'oina J.O., Kadenyi M. M & Ngaruiya B. N, *Effect of Teachers' Morale on Standard Eight Pupils' Academic Achievement in Public Primary Schools in Marani* Sub-County, Kenya. **International Journal of Scientific and Research Publications**, 5 (10), 2017.

Kostereliogl u I., *Effects of Parenting Style on Students' Achievement Goal Orientation: A Study on High School Students.***Educational Policy Analysis and Strategic Research,** 13(4), 2018, 91-107.

Li & Qiu Z.. *How does family background affect children's educational achievement? Evidence from Contemporary*. **The Journal of Chinese Sociology**.1-2. 2018. https://doi.org/10.1186/s40711

Mabuza T.W. & Mafumbate R., *Effects of Parental Involvement in Academic Wellness of Primary School Learners in the Lubombo Region, Eswatini*. **Journal of Culture, Society and Development** ISSN 2422-8400 **An International Peer-reviewed Journal** DOI: 10.7176/JCSD, 51, 2019.

Maes & Hootegem G.V.. "*A Systems Model of Organizational Change*". **Journal of Organizational Change Management,** 32 (7), 2019, 725-738.

Mafini, "*The Contribution Of Organisational Climate To Employee Well-Being*". **The Journal of Applied Business** Research ,2017.

Manabete S., & Duwa S. T . *The Use of School Services in the Management of Technical Colleges in North-East Geo-Political Zone of Nigeria*, 2017.

Manca S , Cerina V., Tobia V., Sacchi S & Fornara F., *The Effect of School Design on Users' Responses: A Systematic Review (*2008–2017). Received: 27 January 2020; Accepted: 16 April 2020; Published: 2020.

Marcus: *Effective Selection and Organization of Information Resources in School Library.***In International Journal of Library (Eds):** UK, 1(1), 2017.

Masanja N.M.. *Essentials in Higher Education Administration in a Period of Economic Constraints.***Bakatsina Journal of Education**, 2019.

Maxwell S., Reynolds K. J., Lee E., Subasic E.& Bromhead D.. "*The Impact of School Climate and School Identification on Academic Achievement: Multilevel Modeling with Student and Teacher Data*" **Original Research Article**, 1, 2017.

Mgbekem J. A., NtukidemP. J .&. Etor R.B, *Planning Imperatives for Sustainability of Qualitative Educational Enterprise in Nigeria: The Role of the Educational Planner,* 2019.

Michael S.O., "*Restructuring U.S. Higher Education: Analyzing Models for Academic Program Review and Discontinuation," The Review of Higher Education,* 21(4), 1998, 377- 404.

Moruf & Muhammed J.O.. *"The USE of library Resources by Teachers in Oyo State: A Study of Selected Secondary Schools in* Akinyele L. G. A., Nigeria". **International Journal of Research & Method in Education , 5**(3), 2018, 49-54.

Murundu Z.O. & Murundu H.H.. *"Influence of Parents' Supervision of Homework and its Influence on Academic Achievement of Pupils in Public Primary Schools".***IAR Journal of Humanities and Social Science,** 1(3), 2020, 173-179.

Nato B.P., *Analysis of Family Structure Influence on Academic Performance Among Secondary School Students in Bungoma East Sub-County*, Kenya. **International Journal of Secondary Education,** 4(2), 2016, 12 – 22.

Ndidi M.A.& Effiong I.E. *"Influence of Classroom Environment on Junior Secondary School Students' Academic Achievement in Basic Science in Calabar Nigeria"*. **Educational Research and Reviews,** 15(8), 2020, 495-503.

Ndum V.E., & Udoye R.N.. "*Investigating Parents' Socio-Economic Background and Academic Performance of Business Studies.* Academic Paper, 2021.

Ngesu & Atieno A. F. *Influence of Home and School Based Factors on Pupils Academic Performance at Kenya Certificate of Primary Education in Makadara Sub-County, Nairobi Coun*t. **International Journal of Trend in Scientific Research and Development (IJTSRD),** 3(3), 2019.

Nnamani C.N., DikkoH.G. & KintaL.M*., Impact of Students' Financial Strength on their Academic Performance: Kaduna Polytechnic Experience*. **An International Multidisciplinary Journal,** Ethiopia, 8 (1), 2017, 83-98.

Nnorom S.U, Ezenwagu S. & Nwankwo B.C.. "*Home Environmental Factors Influence on Academic Performance of Secondary School Students in Owerri Zone II, Imo State, Nigeria"*. **Asian Journal of Advances in Research,** 3(4), 2020.

Nweke D.C, Ihejirika., J.C., & Deebom Z.D., *Influence of Family Background on Academic Achievement of Pupils in Primary Schools in Port Harcourt City Local Government Area, Rivers State*. **International Journal of Education and Evaluation** ISSN 2489-007, 4(3),2018.

Obi, *Management of school plant for effective administration of schools*. (Eds). Educational Administration for Colleges of Education and Universities. Owerri: Tony Ben Publishers.

OdokA.O.*: Social Science and Education,*.

Ogbugo-Ololube R., *Impact of Students' Parental Background on Academic Achievement in Secondary Schools in Obio/Akpor LGA, Rivers State, Nigeria*. **International Journal of Scientific Research in Education,** 9(2), 2016, 115-126.

Okwuduba E.N. & Okigbo E.C., *Effect of Teaching Methods on Students' Academic Performance in Chemistry in Nigeria: Meta Analytic Review*. Bulgarian **Journal of Science and Education Policy** (BJSEP), 12(2) ,2018.

Olagbaju O.O., *Effects of Audio-visual Social Media Resources-Supported Instruction on Learning Outcomes in Reading.* **International Journal of Technology in Education,**3(2), 2020.

Olayiwola J.A.. "Human *Capital Accounting Information and Firm's Value: An Analysis of Selected Quoted Manufacturing Companies in Nigeria* (2007-2014)". **International Journal of Economics Commerce and Management,** 14(2), 2014, 14-27.

Omoruyi, I.V, *The Impact of Broken Homes on Students' Academic Performance* .**Indonesian Journal Of Educational Research And Review**, 3(3), 2020, 113-122.

Osarenren-Osaghae R. I & Irabor Q. O., *Educational Policies and Programmes Implementations: A Case Study of Education Funding, Universal Basic Education (UBE) and Teacher Education,* **International Journal of Educational Administration and Policy Studies,**.10(8), 2018, 91-102.

Otchere1 S.N., Afari J.B. & Kudawe C.. "*Examining the Relationship Between School Facilities and the Learning Environment: A Case Study of Oda Senior High School".*

Ovansa J.U, *Effect of Socio-Economic Status on the Academic Performance of Junior secondary School Students (A Case Study of Public Junior secondary Schools in Adavi L.G.A of Kogi State).* **International Journal of Education and Evaluation ISSN 2489-0073, 3(8),2017.**

Owens S., Holdaway A. S, Smith J., Evans S. W., Himawan L. K., Coles E. K., Girio-Herrera E., Mixon C. S., Egan T. E., &. Dawson A. E. *Rates of Common Classroom Behaviour Management Strategies and Their Associations with Challenging Student Behaviour in Elementary School.***Journal of Emotional and Behavioral Disorders**, 26(3), 2018, 156–169.

Oyelade A.A & Egbebi J.O*., Instructional Supervision for Quality Education Delivery in Nigeria: Innovation Option for Effective Learners'* **Achievement. Kampala International University** ISSN: 2415-0843; 3(1), 2019, 331–339

PantK.R. *Influences of Parental Socio-Economic Status on Academic Achievement: A Case Study of Rural Communities in* Kailali, Nepal". Contemporary Research: **An Interdisciplinary Academic Journal,** 2020, 4 (1), 95-109.

Peretomode F. & Bello S. O.. "*Analysis of Teachers' Commitment and Dimensions of Organizational Commitment in Edo State Public Secondary Schools*". **Journal of Educational and Social Research,** 8(3), 2018.

Peter, Alberto T., S. Tigran S., Diego A & Ustinova M., *The Impact of School Infrastructure on Learning A Synthesis of the Evidence*. *International Bank for Reconstruction and Development The World Bank.* (1818 H Street NW, Washington, DC 20433, 2019.

Pobbi M.A.. "*Parental Motivations and Involvement: A Developing Country Perspective".* **European Journal of Education Studies**, 2(3), 2019, 23-30.

Rahmaniah N.F.. "*Perception as an Intermediary in the Relationship between Socioeconomic Status, Expectations, and Participation*"**. Journal of K6 Educational Management,** 3(3), 2019, 12-20.

Sahabi M.K., Askia N.K. & Unobe E.S., *Use of Electronic Information Resources by Undergraduates of Ahmadu Bello University library in Nigeria*. **International Journal of Academic Research in Education and Review,** 2020.

Saidu K.A. & Ali H.M., *Perceived Effect of Households' Socio-economic Variables on the Academic Performance of Junior Secondary School Students in CCA in Maiduguri, Borno State, Nigeria*. **International Journal of Science, Technology and Society,** 7(6), 2019, 87 – 92.

Samiullah S., *Influence of Parenting Style on Children's Behaviour*. **Journal of Education and Educational Development,** 3(2), 2017.

Sam-Kalagbor V.O.,*"Perceived Influence of School Physical Facilities on Students' Academic Performance in Public Secondary Schools in Rivers State*". **International Journal of Innovative Social & Science Education Research**, 9(1), 2021, 46-59.

Saylor Y.K., *Fundamental of Research Methodology and Statistics. New Delhi: New Age International* (P) Ltd. 2017.

Shute J., Hansen E. G., Underwood J. S. & Razzouk R., *"A Review of Relationship Between Parental Involvement and Secondary School Students' Academic Achievement,"***Education Research International**, 2017, 1-10.

Soharwardi M.A., *"Impact of Parental Socioeconomic Status on Academic Performance of Students: A Case Study of Behaviour, Pakistan".* **Journal of Economics and Economic Education Research,** 21(2), 2020.

Tsinidou M., Gerogiannis V.& Fitsilis P., "*Evaluation of the factors that determine quality in higher education: an empirical stud*y," **Quality Assurance in Education,** 18 (3), 2017, 227-244.

Ukpong N. *Administration of School Business: A Planning Approach. Boston: Ally and bacon, Inc. See Discussions, Stats, and Author Profiles for this Publication at:* https://www.researchgate.net/publication /339468424 - 2020.

UyanneE.O., Badamas O.L., and Balogun A.O.. "*Influence of motivation on teachers' effectiveness in Ilorin West Local Government, Kwara State*". **Journal of Education and Learning** (EduLearn), 14(3), 2020, 345~351.

Vairamidou1 and "Stravakou P.. *Classroom Management in Primary and Secondary Education Literature Revie*w". **Journal of Education and Human Development,** 8(2), 2019, 49-59.

Vargas A.R., Macías A.A.M., Arredondo-Soto K.C., Lopez Y.B., Gutiérrez T.C. and Escobedo G.H.. "*The Impact of Environmental Factors on Academic Performance of University Students Taking Online Classes during the COVID-19 Pandemic in* Mexico". Published, 5 (2), 2020.

Vennix J.. "*Do Outreach Activities in Secondary STEM Education Motivate Students and Improve their Attitudes Towards STEM*"? **International Journal of Science Education,** 2018.

Walter K. and Beth W.. "*Influence of Parental Level of Education and Parental Income on Students' Academic Performance in Public Day Secondary Schools*". **Journal of Education and Practice**, 9(35), 2018.

Wondimu, *An Overview of Ethiopian Education System, Curriculum, Curriculum Development Processes and Its Historical Trends and Patterns*: A Review. **Historical Research Letter** ISSN 2224-3178 (Paper) ISSN 2225-0964 (Online), 50, 2019.

Wordu H. and Oneobari D. *School Plant Provision and Academic Performance of Secondary School Students in Tai and Eleme Local Government Areas*, Rivers State. **International Journal of Innovative Education Research** 7(1), 2019, 7-14.

Yakubu1 S. and Sowunmi G., *School Plant Planning: A Prerequisite for the Attainment of Educational Goals and Objectives.* **Journal of Education and Practice** www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X (Online), 8(18), 2017.

Proceedings

Bediako S.. "*Models and concepts of curriculum implementation, some definitions and influence of implementation",* 2019.

Capraro M. M., Capraro R. M. and Wiggins B. B., "*An investigation of the effect of gender, socioeconomic status, race and grades on standardized test scores*," **Paper presented at the meeting of the Southwest Educational Research Association, Dallas, TX,** *2017.*

Chen Q., Kong Y., Gao W., and Lei Mo. "*Effects of Socioeconomic Status, Parent–Child Relationship, and Learning Motivation on Reading Ability*". **Published online**, 2018.

Dalibi S.G., *Socio-Economic Performances of Mega Construction Projects (MCPs) in the Light of Sustainable Development of Nigeria's Built Environment***. IOP Conference Series Earth and Environmental Science,** 2020.

El Harfi M., Charafi J., Houmanat K., Hanine H. and Nabloussi A.. *"Assessment of genetic diversity in Moroccan sesame (Sesamum indicum) using ISSR molecular markers".* **Research Article**, 2020.

Farrell, *The Most Important Thing About Family Business is Continuity. Family Business: Education*, 2019.

Olayiwola J.O. and Jegede O.W.. "*The Role of Social Media in Advertising Product among Artisans in Ibadan Metropolis".* **Proceedings of the 2nd International Conference, The Federal Polytechnic***, Ilaro,* 2020.

Yenni R. Hernani A. &Widodo A. *The Implementation of Integrated Science Teaching Materials based Socio-Scientific Issues to Improve Students Scientific Literacy for Environmental Pollution Theme.* **In AIP Conference Proceedings** 1848, (1), 2017.

Internet Sources

Maheshwari V.K., *Basic science Laboratory and Lab Method -Activity Oriented Pedagogy in Basic science Teaching.* (India: The Concept of Mocksha, 2018, 52-61.

Mathias G.K. & Abdulsalam Y*, Experience of an Academic Library During the COVID-19 Pandemic*. t: https://digitalcommons.unl.edu/libphilprac, 2020.

Metsämuuronen J., & Räsänen P.. "*Cognitive–linguistic and Constructivist Mnemonic Triggers in Teaching Based on Jerome Bruner's Thinking"*.https://www.researchgate.net/publication/329584578, 2018.

Nam V., *Second Secondary Education Sector Development Program: Education Sector Development Program Implementation Manual. Addis Ababa,* **EMPDA**. 2017.

Nwafor E.: Comparative study of students academic performance in junior secondary school certificate basic science in public and private secondary schools in ebonyi state nigeria. Academic discourse: **an international journal**

Nworgu, L.N. (2006). *Traditional Methods of Teaching Biology, Paper Prepared for National Open University,* ***Unpublished Work***.

Olaefe I. A., Research *Writing For Academic Growth. Zaria: Ahmadu Bello University, 2017.*

Smith M.K.. '*What is teaching?' in The encyclopedia of pedagogy and informal education.* [https://infed.org/mobi/what-is-teaching/. 2018.

Suleiman, Yusuf; Hanafi, Zahyah; and Tanslikhan, Muhajir, "*Perceived Influence of Library Services on Students' Academic Achievement in Secondary Schools in Kwara State,*

Nigeria" (2018). Library Philosophy and Practice (e-journal). 1744. https://digitalcommons.unl.edu/libphilprac/174

Usman Y.D. *Educational Resources: An Integral Component for Effective School Administration in Nigeria.* (RS4.35 Nassarawa Eggon Unit Command, Nasarawa State, Nigeria, 13, 2016, 27-37.

Whelan, *The learning challenge: How to ensure that by 2020 every child learns. Available online* at: www.acasus.com/wp-content/uploads/2014/02/Acasus, 2017.

Theses, Dissertations and Projects

Jahn J.. *"Teachers' Perceptions of Organizational School Climate and Communication Satisfaction".* **A Dissertation for degree of Doctor of Education with an emphasis on Educational Leadership, Faculty of College of Saint Mary**, 2019, 136

Juliu K.. *the Effect of Laboratory Exposure on Students' Academic Achievement in Practically Based Subjects In Secondary Schools In Wakiso District.* **A dissertation submitted to the college of education, open and long distance learning in partial fulfilment of the award for bachelor of science with education of kampala international university september***, 2017.*

Osuji J.N., *Impact of School Facilities on Students' Academic Performances in Public Secondary Schools in Giwa and Zaria Education Zones. (***An M.Ed Thesis, Amhadu Bello University, Zaria***, 2017.*

Textbooks

Bajah T.S.: *Teaching Integrated Science Creativity, Ibadan, Ibadan* **University Press***, 1993.*

Ekeh, F.I (2003). *Research Methodology and Statistics in Education. Abakaliki Madol Press.*

Garrido G.L. *Self-efficacy: The exercise of control. New York: Freeman. 2020.*

*IFLA School Libraries Standing Committee: The IFLA School Library guidelines. In S. J. Barbara, O. Dianne (Eds) Netherlands***: IFLA Publication** , 2015.

Okereke R.A., *Evolving Maintenance Culture in Nigeria: The Role of Facilities Management Current issues in educational management in Nigeria. Benin*: **Ambik Press** Ltd , 2020.

Thompson R.A., Simpson J. A., & Berlin L., From *Internal Working Models to Script-like Attachment Representations. The Fundamental Questions* (Ch. 14, pp. 111-119). NY: **Guilford Press**, 2021.

Appendices

Appendix 1 - Questionnaire

Dear Student,

This questionnaire is primarily designed to examine School Plants and Family Background as predictors of Achievement in Secondary School Basic Science in Oyo State, Nigeria. The research is for purely academic purpose; therefore, you are implored to render your utmost support and co-operation by completing the questionnaire sincerely. Your responses will be treated confidentially.

Thank you.

Olufunke Bukola ADESINA

Section A

(Demographic Data)

Instruction: Please read the following questions and tick (√) the appropriate answer.

1. **Class:** (a) JSS 1 ( ) (b) JSS 2 ( ) (c) JSS 3 ( )
2. **Age:** (a) 10 – 12 years ( ), (b) 13 – 15 years ( ), (c) 16 – 18years ( ), (d) 20 years ( )
3. **Sex:** (a) Male ( ), (b) Female ( )
4. **Parental Education Level:** (a) Primary ( )(b) Secondary ( ), (c) B.SC ( ) (d) MSC (e) PHD ( )
5. **Parental Income Status:** (a) below 21000 ( ), (b) between 21000 - 50000( ), (c) between 51000 - 100000( ), (d) between 10100 - 150000 ( ) (e) above 200000
6. **Family Size:** (a) 1-2 ( ) (b) 2-4 ( ) (c) 5-6 ( ), (d) 7-8 ( ) (e) 9 & above ( )

Section B

Number of Classrooms in your school ----------

Tick (√) from the following options the appropriate position of under listed facilities in your school

SN	Classroom	Highly Available	Available	Not Highly Available	Not Available
1	Buildings				
2	Adequate Space				
3	Duster & Chalk				
4	Wall Charts				
5	Chalkboard				
6	Power Points				
7	Visual Teaching Aids				
8	Lightling and Ventilation				
9	Writing Kit				
10	Instructional Materials				

Number of Science Laboratory in your school ----------

Tick (√) from the following options the appropriate position of under listed facilities in your school

S/N	Laboratory Facilities/Equipment	Highly Available	Available	Not Highly Available	Not Available
1	Laboratory.				
2	Measuring Cylinder.				
3	Skeleton.(Model)				
4	Dissecting Equipment.				
5	Litmus Paper				
6	Cotton Wool				
7	Conical Flask.				
8	Calorimeter				
9	Laboratory Funnel.				
10	Biological Kits.				
11	Test Tube and Racks.				
12	Beaker.				
13	Aquarium.				
14	Thermometer.				
15	Microscope.				

16 Anemometer.

17 Wind Vane.

18 Magnifying Glasses.

19 Dropping Pipette.

20 Bunsen Burner.

21 Model for Eye.

22 Model for Heart.

23 Reagent for Food Test

24 Biological Garden.

25 Preserved Specimen

26 Plant Press.

27 Binoculars.

28 Tripod Stand.

29 Fire Extinguisher.

30 Round and Flat Bottom Flask

Number of Libraries in your school ----------

Tick (√) from the following options the appropriate position of under listed facilities in your school

SN	Library Facilities	Highly Available	Available	Not Highly Available	Not Available
1	eBook Platform, Supplier, Administrator				
2	Magazines: Titles, Suppliers and Costs (Print and e-zines)				
3	Suppliers of Stationery and Library Consumables: Barcodes, Covering Materials, Labels etc				
4	Signage Suppliers, and who to Consult for Bilingual Signage Terms				
5	Library Shelving, Furniture, ICT and Equipment Suppliers				
6	E-Library Services				
7	Professional Support				

Appendix 2 - Basic Science Achievement Test (BSAT)

Choose appropriately

1. _____Not among the characteristics of living thing?

A. Excretion

B. Feeding

C. Reproduction

D. Bathing

2. Which of the following classes of food promotes the healing of wound?

A. Carbohydrates

B. Vitamins

C. Water

D. Fats and oils

3. The simplest unit of a living organism is _____

A. Cell

B. Tissue

C. Organ

D. Cytoplasm

4. Good health can be maintained by the following EXCEPT

A. Balanced diet

B. Drinking beer

C. Personal cleanliness

D. Regular exercise

5. The ability of an organism to live in any environment is termed?

A. Poverty

B. Survival

C. Adaptation

D. Habitat

6. The temperature at which a solid change to liquid is called point.

A. Thermometer

B. Conversation

C. Melting

D. Bolting

7. A substance that allows light to pass through is called _____

A. Opaque

B. Transparent

C. Paper

D. Transparent

8. _____ stands for water chemical formula.

A. H_2O

B. HCL

C. OH

D. N-0

9. Which of the following reduces friction?

A. Rolling

B. Sliding

C. Bearing

D. Lubrications

10. The following are domestic animals except

A. Leopard

B. Dog

C. Duck

D. Chicken

11. _____is the transfer of traits from parents to their offsprings.

A. Continuity

B. Circulation

C. Heredity

D. Ovulation

12. Green plants photosynthesis their food in the presence of _____

A. Flower

B. Air

C. Leaf

D. Sunlight

13. Which of these metals is in liquid form?

A. Sodium

B. Potassium

C. Mercury

D. Sulphur

14. Method used to remove excess water from the land is called _____

A Flooding

B. Water erosion

C. Drainage

D. Afforestation

15. Which of the following is not a radioactive element?

A Thorium

B. Oxygen

C. Polonium

D. Uranium

16. Method and process developed by people to make life easy to live is known as _____

A. Technology

B. Farming

C. Trading

D. Communication

17. Drawing instrument and materials can be used to draw

A. Object

B. Oblique

C. Ordinary

D. Accurate

18. The process of reducing water content from the wood is called _____

A. Conversion

B. Seasoning

C. Preservation

D. Timbering

19. The properties of ceramics are the following except _____

A. Brittleness

B. Elasticity

C. Electrical insulation

D. Breakable

20. An instrument used to measure electric current is known as _____

A. Ammeter

B. Voltmeter

C. Micrometer

D. Thermometer

21. One of the following is not a family trait

A. Complex of the skin

B. height

C. albinism

D. possession of two eyes

22. One of the following is an example of family trait except

A. Recessive

B. dormant

C. generation

D. blood type

23. The following cause soil erosion except

A. Growth of towns

B. building of houses

C. mulching

D. road construction

24. Soil erosion can be controlled by the following except

A. Planting of trees

b. terracing

c. farming

d. planting cover crops

25. Flooding could be due to all these except one.

A. Heavy rainfall

B. sandy soil

C. blocked gutter

D. overflowing of river or sea

Appendix 3 - SPSS Computation Results (Raw Scores)

Gender Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Gender	Male	386	38.6
	Female	614	61.4

Class Distribution of Respondent

Variables	Categories	Frequency	Percentage
Class	JSS2	490	49.0
	JSS3	510	51.0

Age Distribution of the Respondent

Variables	Categories	Frequency	Percentage
Age	10-12yrs	520	52.0
	13-15yrs	300	30.0
	16-18yrs	180	18..0

Parental Education Level Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Parental Education Level	primary	290	29
	secondary	440	44
	NCE/OND	210	21
	B.SC	60	6

Parental Income Level Distribution of the Respondents

Variables	Categories	Frequency	Percentage
Parental Income Level	below 21000	90	9
	21000 - 50000	306	30.6
	51000 - 100000	299	29.9
	10100 - 150000	213	21.3
	above 200000	92	9.2

Distribution of the Respondents' Family Size

Variables	Categories	Frequency	Percentage
Family size	1-2	60	6
	3-4	240	24
	5-6	341	34.1
	7-8	289	28.9
	9& above	70	7

Descriptive Statistics on Level of Availability of School Plant (Classroom) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev
1	Buildings	1000	3.4700	.71411
2	Adequate Space	1000	3.1900	.68898
3	Duster & Chalk	1000	3.2700	.87084
4	Wall Charts	1000	3.0700	.01332
5	Chalkboard	1000	3.1900	.82160
6	Power Points	1000	2.3200	.14183

7	Visual Teaching Aids	1000	2.3400	.97261
8	Lightling and Ventilation	1000	2.9700	1.01529
9	Writing Kit	1000	1.1400	1.06879

Table Level of Availability of School Plant (laboratory Facilities) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev
1	Laboratory.	1000	3.6000	.88255
2	Measuring cylinder.	1000	3.0200	.93865
3	Skeleton.(Model)	1000	1.6000	.73546
4	Dissecting Equipment.	1000	3.3700	.89130
5	Litmus paper	1000	3.3200	.35460
6	Cotton wool	1000	3.4900	.81916
7	Conical flask.	1000	3.1700	.95005
8	Calorimeter	1000	3.0200	.88369
9	Laboratory funnel.	1000	3.1400	.91750
11	Test tube and Racks.	1000	2.8700	.95636
12	Beaker.	1000	2.9900	.78161
13	Aquarium.	1000	2.8000	.12343
14	Thermometer.	1000	3.0700	.15209
15	Microscope.	1000	1.0200	.93865
16	Magnifying glasses.	1000	3.1200	.81652
17	Dropping pipette.	1000	2.8700	.05592
18	Bunsen burner.	1000	2.9700	.15383

19	Preserved specimen	1000	2.7500	.09063
20	Tripod stand.	1000	2.7200	.05045

Table Level of Availability of School Plant (Library Facilities) used for Basic Science

S/N	Items	N	$\bar{x}$	Std. Dev
	Library	1000	3.2600	.97055
1	eBook	1000	2.4700	.71411
2	Magazines: titles, suppliers and costs (print and e-zines)	1000	3.1900	.68898
3	Suppliers of stationery and library consumables: barcodes, covering materials, labels etc	1000	1.0200	.03865
4	Library shelving, furniture and equipment suppliers	1000	2.8200	.81652
5	E-library services	1000	2.2700	1.05592
6	Professional support	1000	2.7001	.90911

Crosstab Analysis of the Students' Parental Educational Level as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		16-25 marks		26-35 marks		36-50 marks		Total
Parental Education Level	N	%	N	%	N	%	N	%	
Primary	228*	78.62	33	11.38	19	6.55	10	3.45	290
Secondary	283*	64.32	81	18.41	44	10	32	7.27	440
NCE/OND	24	11.43	75	35.71	36	17.14	75*	35.71	210
B.SC	3	5	13	21.67	21	35	23*	38.33	60

Crosstab Analysis of the Students' Parental Income Level as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		16-25 marks		26-35 marks		36-50 marks		Total
Parental Income Level	N	%	N	%	N	%	N	%	
below 21000	37*	41.11	34	37.78	14	15.56	5	5.56	90
21000 – 50000	134*	43.79	98	32.03	18	5.88	56	18.30	306
51000 – 100000	146*	48.83	102	34.11	31	10.37	20	6.69	299
10100 - 150000	52	24.41	28	13.15	87*	40.85	46	21.60	213
above 200000	20	21.74	12	13.04	31*	33.70	29	31.52	92

Crosstab Analysis of the Students' Family as Based on their Academic Achievement Outcome

	Academic Achievement (Students' Scores)								
	0-15 marks		16-25 marks		26-35 marks		36-50 marks		Total
Family Size	N	%	N	%	N	%	N	%	
1-2	19	31.67	23*	38.33	11	18.33	7	11.67	60
3-4	34	14.17	32	13.33	115*	47.92	59	24.58	240
5-6	134*	39.30	80	23.46	58	17.01	69	20.23	341
7-8	111	38.41	119*	41.18	17	5.88	42	14.53	289
9& above	42*	60.00	8	11.43	9	12.86	11	15.71	70

Level of Academic Achievement of Junior Secondary Students in Basic Science

Academic achievement (Student scores)	Frequency	Percent
0-15	309	30.9
16-25	312	31.2
26-35	210	21
36-50	169	16.9
Total	**1000**	**100.0**

Joint Influence of School Plant Variables (Classroom, Science Laboratory and School Library) and Family Background Variables (Education Status of Parents, Family Size and Parental Income) on Academic Achievement of Junior Secondary School in Basic Science

R	R Square	Adjusted R Square	Std. Error of the Estimate
.417	.174	.168	9.6335

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3046.328	2	507.721	7.511	.000
Residual	9665.865	998	67.593		
Total	12712.193	1000			

Relative Contribution of School Plant Variables and Family Background Variable Influence on Academic Achievement

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	35.328	2.813		26.249	.000
Classroom	3.961	1.359	.106	2.843	.015
Laboratory	5.125	.788	.593	6.503	.000
Library	-3.815	1.036	.335	-3.681	.000
Parental education	.048	.017	.710	3.450	.000
Parental income	.996	.019	.601	4.389	.000
Family size	-.009	.017	-.023	-.513	.608

Reliability coefficient of English Achievement Test (EAT) Items

Reliability Statistics	
KR_{20}	N of Items
.820	25

Instructional Materials and Learning Environment scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.760	46

Bio-data

1. **Personal Data**
   i. Full Name: Adesina Olufunke Bukola
   ii. Address: No 34 Government Layout Okesanmi Street, Ilora.
   iii. Date of Birth: 28th August, 1975
   iv. Place of Birth: Ijebu Igbo, Ogun State.
   v. Nationality: Nigerian
   vi. Next of Kin: Mr Adesina Adeyemi (ACA), Government Layout Okesanmi, Ilora.
2. **Educational Background**
   1. Educational Institutions Attended with Dates
      - University of Ado-Ekiti, Ekiti State 2003 - 2007
      - Oyo State College of Education, Oyo 1999 - 2002
      - Ogbomoso Grammar School, Ogbomoso 1987 - 1993
      - Masifa D.C Primary School, Ogbomoso 1981 -1987
   2. Adademic Qualification Obtained with Dates
      4. B. Ed. Integrated Science 2009
      5. National Certificate of Education, Oyo 2002
      6. National Examination Council (NECO) 1999
      7. Primary School Leaving Certificate 1987

   Professional Body Membership
   •Nigeria Union Of Teacher (NUT)

3. **Work Experience with Date**
   1. Class Teacher, Isale Oyo Primary School, Oyo. 2005 - 2009
   2. Classroom Teacher, Oke-Olola Primary School, Oyo. 2009 - 2014
   3. Classroom Teacher, Isale-Oyo Community Primary School, Oyo. 2014 - 2016
   4. Head of School, Isale -Oyo Community Grammar School II, Oyo. 2016 - Date

4. **Award and fellowship** (Nil)
5. **Membership of Academic Professional Bodies- Tachers' Registration Council of Nigeria.**
6. **Publication - Degree Project**

University Compliance Form

This is to certify that this thesis was written by ADESINA Olufunke Bukola with matriculation number LCU/PG/000527 in the Department of Art and Social Sciences, Lead City University, Ibadan is in full compliance with the approved university format and style

Name and signature	Date