

**School Resources and Home Factors as Determinants of Senior Secondary School Students
Academic Achievement in Agricultural Science in Ibadan Metropolis**

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Educational Management**

Certification

This is to certify that Serifat Aribike MAKINDE with the matriculation number LCU/PG/002116 carried out this research work titled-‘**School Resources and Home Factors as Determinants of Senior Secondary School Students Academic Achievement in Agricultural Science in Ibadan Metropolis**’ in the Department of art and social Science Education, Faculty of Art and Education, Lead City University, Ibadan, Nigeria for the award of Master Degree (M Ed) in Educational Management and this has not been previously submitted.

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Dedication

This work is dedicated to the Almighty God for His Grace and Mercies and also to my wonderful Husband – Mogaji Ademola Makinde for his unwavering support throughout the period of this research work.

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‘Even though the mentioned institution and persons have assisted in the process of this research work, I alone stand responsible for the errors, if any found in the work.

Abstract

Students' poor academic performance in Agricultural Science among public secondary school students' has been a source of concern and a major threat to the future of Agriculture in Nigeria. This study was therefore, conducted to investigate the influence of two major variables; School Resources and Home Factors on Senior Secondary School Students Academic Achievement in Agricultural Science in Ibadan Metropolis. The research utilized a descriptive survey design. The population included all SSS2 students in public secondary schools offering Agricultural Science (N=1,026) and 721 of these were eventually analyzed using multistage sampling. Agricultural Science Achievement Test (ASAT) and Students' Questionnaires on School Resources and Home Factors (SQSRHF) were used for data collection. Data were analyzed with the use of descriptive statistics of frequency counts, percentages, mean and standard deviation and inferential statistics of multiple regression and t-test at 0.05 significant level. Findings revealed a low level of academic achievement, with almost 93% scoring below 50%. Both resource availability (Mean=2.41; SD=1.132) and utilization (Mean=2.17; SD=0.891) in surveyed schools were low. There was a significant combined influence of School Resources and Home Factors on academic achievement ($F=298.899$; $p=0.000$), explaining 60.6% of the variation. Home Factors (Beta=0.610; $p=0.000$) have a higher relative influence than School Resources (Beta=0.205; $p=0.000$). Additionally, a statistically significant gender difference is observed, with male students outperforming females (Mean difference=0.05; $p=0.014$). Recommendations include prioritizing resource acquisition for teaching agricultural science by the concerned government and school administrators and; raising awareness among parents to support their children's education.

Keywords: Academic Achievement, Agricultural Science, Home factors, School Resource, Ibadan Metropolis.

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Chapter One

Introduction

1.1 Background to the Study

The predicament of poor academic achievement and subsequent falling standard of education, particularly in public secondary schools have become sources of concern as they seem to pose a major threat to future supply of manpower in Nigeria. This unpleasant trend in academic deterioration is a menace that demands immediate attention.

Agricultural Science as a subject is an essential tool for the development of the agricultural sector as it provides an opportunity for the accumulation of human capital for the development of the sector. It plays an important role in developing the youths to fit into the current and future needs of the changing and challenging global agricultural environment. In view of the importance of agriculture in the economy, the study of agricultural science was introduced into the Nigeria secondary school curriculum in 1967. In the National Policy on Education, agricultural science is one of the subjects offered as a pre-vocational elective in the Junior Secondary School and as a vocational elective at the Senior Secondary School level^{1,2}.

Some of the reasons for the introduction of agriculture as a subject in the Nigerian education system was for the youths to acquire practical agricultural knowledge and skills that would make them self-reliant in future and for the future improvement of the agricultural sector, which at the long run would boost Nigeria's food productivity and address the need for diversification of the Nigerian economy³.

In spite of the laudable objectives of agricultural science as one of the vocational subjects in senior secondary school, there have been reports that students' academic achievements in the

subject are unsatisfactory and poor in Nigeria³. The predicament of students' poor academic achievement particularly, in public secondary schools have become a source of concern as it serves as a major threat to future supply of manpower in the agricultural sector in Nigeria.

In Agricultural Science for the year 2019, for example, the total number of 534,206 candidate sat for Agricultural science (paper 3) with a raw mean score of 34 and a standard deviation of 8.43 as against a raw mean score of 34 and a standard deviation of 12.17 recorded in 2018 with a total of 519,151 candidates in WASSCE, an external examination conducted by a major examination body in the West African sub-region⁴. With this analysis of students' achievement in Agricultural science, it is clear that the achievement of the students is worsening. Poor academic achievement can be said to be any achievement that is below the standard.

With the trend of low performance, the enrolment for the examination in agricultural science is on the decline as many students are no longer interested in offering the subject. The fact that the subject is an elective subject has compounded the problem. Furthermore, the poor perception that agricultural science has no future prospects for those who study it or that those who choose to further in it will end up as mere farmers may be another probable reason for students' lack of interest in the subject.

This unpleasant trend in agriculture education is a menace that demands immediate attention. One major consequence of students not performing up to standard in Agricultural Science is that they are unable to study agriculture or any related courses at the higher institutions of learning⁵. Following this; is, not having enough of the country's young graduates taking up a career in agriculture which will, at the long run lead to the problem of food insecurity for the country³. Poor academic achievement of students in agricultural science among senior secondary school

students have been attributed to a number of factors by researchers in agriculture education. Among these factors are students' negative attitude towards Agriculture, poor teaching techniques, unavailability of instructional resources for the teaching and learning of the subject, poor and inadequate laboratory resources, inadequate farmlands for practical lessons, obsolete teaching techniques and overcrowded classrooms³. To others, the causes are home related factors, students' family background, peer influence and the personal characteristics of learners.^{6, 23}

While studies on causes of students' poor academic achievement abound, particular studies on the influence of availability and utilization of school resources and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis are scarce. This is especially true of the combined influence of the two variables, school resources and home factors on students' academic achievement. It is on this background that this research intends to investigate the influence of school resources and home factors on the academic achievement of students in agricultural science in Ibadan metropolis of Oyo State, Nigeria with the aim of proffering solutions to the problem of poor academic achievement in agricultural science.

School resources refer to facilities that can be used to enhance or improve educational programmes and promote teaching and learning. School resources make up an integral part of the educational system and are observed as a potent factor in qualitative and quantitative education¹. In this study, availability of resources for teaching of Agricultural Science refer to the needed teaching materials which are readily available for the teaching and learning of Agricultural Science while resource utilisation refers to the extent at which the available school resources for the teaching and learning of agricultural science in the school are being used. The availability and utilisation of eleven of such resources will be considered in this work. They include school

farm, library, classrooms, laboratory, field trips to local farms and agro-based industries, farm machines and equipment, specimens of agricultural produce, simple farm tools, agricultural charts, agricultural science activities record book and relevant agricultural science textbooks.

Availability and utilisation of school resources promote effective teaching and learning activities in schools while their inadequacy, unavailability and non-utilisation may affect the academic achievement of the learners negatively. The school is expected to have the needed resources for the teaching of Agricultural science in order to advance the study of the subject. Furthermore, their availability, adequacy and utilisation influence teachers' productivity and students' academic achievement⁷.

A laboratory, as one of the vital resources for teaching agricultural science is a room, or a structure equipped with up to date instrument for teaching by demonstrating theoretical phenomena in practical terms. Seeing is believing when it comes to the influence of employing laboratories in science and other scientific-related fields and students comprehend and retain what they see more than what they hear or are told⁸. Laboratories stimulate a real practical environment and process in which students convert their theoretical knowledge into practical knowledge by conducting experiments⁹. Science laboratory material include; textbooks, computers, thermometers, fire extinguishers, first aid kits, oven, incubators, chalkboards, model/mock-ups, television, radio, and other electronic devices.

The availability of laboratory resources is essential for effective teaching and learning and consequently a good achievement in the subject. Students can master better the basic concepts of agricultural science when they learn through practical⁶. This implies that practical should function as primary learning experience for students and; for agricultural science teachers to be

effective as science teachers, laboratory resources should be available and used appropriately to improve the achievement of students. However, the lack of well-equipped laboratory and inappropriate application of laboratory resources in the teaching of science subjects by secondary school science teachers has been eluded as one of the major reasons for students' poor achievement in agricultural science⁸.

The school farm is another important school resource in the teaching and learning of agricultural science. The school farm is a place where practical agriculture and farming activities such as crop, livestock, aquaculture, and horticulture among others are carried out. The importance of availability and utilisation of the school farm cannot be over emphasized being a place where theories are practiced. Practical activities on agriculture are conducted on the school farm and agricultural science knowledge acquired are converted into needed skills by the students in order to become self-reliant, employer of labour and contribute meaningfully to government effort in attaining food sufficiency for the citizenry⁶.

However, inadequate farmlands for practical lessons, inadequate funds to manage the farm for practical-oriented Agricultural Science and the inability of students to regularly practice on farms have been found as some of the challenges confronting effective teaching and learning of agricultural science³. It has also been observed that most school farms lack tools, equipment and other capital items. Lack of seeds, feeds, fertilizers, operating suppliers for farm activities as well as inadequate training for teachers to use the farm for instructional purpose is another problem. In addition, lack of staff or personnel to run the farm has been confirmed as the most serious problem facing the school farm⁶.

Classrooms are very important input to the educational system. A well-furnished classroom would encourage both the teachers and the students to disseminate and assimilate adequately, the school standard is measured based on the amenities available to the students via their classroom arrangement in terms of furniture, boards, roofing style and walls decorations. The level at which all these are available would determine the quality of education at the disposal to the students in such schools¹⁰.

Textbooks are other crucial and beneficial instructional materials that furnish the teachers with adequate information to be imparted to the students. For teachers to be able to provide up-to-date information he/she needs to widen his/her knowledge by consulting adequate and authentic textbooks in order to avoid been embarrassed by the students' questions during teaching but quite often than none, the quality of these textbooks are questionable in terms of colour, print and photograph. For many teachers, textbook can provide an excellent and useful resource, without usurping the position of the teacher. While the selection of a textbook has been adjudged to be of vital importance to academic achievement, it is sad to say that relevant textbooks are not available for teaching and learning activities¹¹. Non-availability of textbooks as one of the school resources that promote effective learning could be associated with high costs of textbooks. When this happens, it is further noted that students cannot afford to purchase the textbooks. However, a significant relationship has been found between recommended textbooks and academic achievement in agricultural Science.

Library is one more school resource that supports all aspects of school instruction and at the same time offers students services and assistance. Therefore, a library must be current and still provides access to older literature. School library may not be useful if the books in stock are not adequate or if they are obsolete¹². School libraries have evolved from having a primary focus on

books, housed in a store-like environment or room to providing the rich array of resources and services with computers as may be found in most modern academic libraries and information centres. These school libraries through the provision of information-rich resources and services have been considered paramount in the development of education and academic achievement of its students who on daily basis patronize the services of the library¹³.

Students visit to agricultural farms and agro-based industries have been found to be an indispensable resource in the learning of practical agriculture and have been linked with better achievement for students¹⁴. This is because a farm field trip gives students hands-on experience; it affords them the chance to understand how they can apply the things they have learnt to a real situation. Unlike the teachers that have theoretical skills, farm staff has a lot of practical knowledge to teach the students. This means that farm visits help in bringing a synergy between farm staff and teachers' knowledge. This allows students to see the connection between what is learnt at school and how they can apply them in the real world. No wonder in the 2019 WAEC chief examiners' report, visits to agricultural farms and agro-based industries was one of the recommended remedies for improvement in students' achievement in paper 3 of agricultural science⁴.

Emphasising on the importance of the role of resources in teaching and learning, it has been established that no effective vocational and technical education programme can be effectively taught without the availability and use of necessary equipment¹⁵. This is because resources enhance students' knowledge and appreciation of the subject content and enable the teachers and learners to develop problem-solving skills and scientific attitudes. When resources are provided to meet relative needs of a school system, students will not only have access to the reference materials mentioned by the teacher, but individual students will also learn at their own paces. By

this, the students are able to learn through concrete rather than abstract experiences and the likely net effect of this is increased overall academic achievement of the students.

Apart from availability and utilisation of school resources, another independent variable that this study will be considering as a potential determinant of student academic achievement in agricultural science is home factors in terms of parents' socio-economic status, family size and parents' level of education.

Home factors refer to the factors surrounding the home of the students such as the family size, parents' socio-economic status, parents' educational background, parents' occupation etc¹⁶. In modern society, parents influence plays a very important role in the academic life of their children¹⁷. Effective learning involves partnership of students, teachers and parents. It has also been observed that families' involvement determines the emotional and material inputs that further determine the motivation level in students towards education¹⁶.

Family socio-economic status has been suggested as having a positive effect on student academic achievement. Students from a wealthy family are well catered for in the sense that they will be able to afford all the necessary requirements requested for in the school which will result to a better academic achievement for the student¹⁶. The logic behind this is that students from lower income families have to work harder than students from higher income families. Students from lower income families have to dedicate more hours to employment and fewer hours to school work^{18,19}. These financial pressures usually cause many students from low income family to disengage from school or drop out²¹.

Socio-economic status of families in one way or other affects academic achievement. All children have certain needs, physical and sociological which when met contribute positively to

their academic achievement. These needs may include a conducive-reading atmosphere, good food, playing ground, provision of books, other instructional material and attendance at the best schools available. All these help students to promote effective learning and good achievement in schools^{18, 21}.

Family size, that is, the number of the members of a family and the type of family is another home factor, which has the tendency to exert influence on students' academic achievement¹⁹. A family that is small in number is likely to positively affect a student's academic achievements in agriculture because the student's academic needs can be easily taken care of when the family is not large²². For example, having more siblings have been found to result in less allocation of time and attention to each child; this will in the long-run give rise to low achievement in school¹⁹.

An important implication of large family size and poor socio-economic class is the tendency of child labour and absenteeism where the child starts struggling to earn a living when he/she is supposed to be in school¹⁹. Students who are from large extended family tend to run away from school and take to hawking, barrow pushing or bus conductors. The implication is that unless parents give birth to the number of children they can afford to care for, the academic achievement of their children will remain ever poor^{19, 20}.

Parental educational level as one of the indices to measure home factors in this study refers to the highest educational attainment of parents. It may range from the high school to tertiary education. Parents' levels of education have been alluded to be a determinant of children's academic achievement in which students with well-educated parents stand the chance of doing well in their academics compared to those students with illiterate parents^{21,23,24}. Though there are students with parents who are illiterates or not well educated who also perform well in their academics

but there are more students who perform well academically from a family with well-educated parents.

Parents' level of education is part of a larger constellation of psychological and sociological variables influencing children's school outcomes. Level of education influences parents' knowledge, beliefs, values, and goals regarding childrearing, so that a variety of parental behaviours are indirectly related to children's school performance. Students whose parents have higher levels of education may have an enhanced regard for learning, more positive ability beliefs, a stronger work orientation, and more effective learning strategies than the children of parents with lower levels of education^{21,24}.

Parents with academic credentials would be in a position to be a second teacher to his/her child, as well as educating and encouraging the child on the best approach to perform well in school and offer essential resources. The children of educated parents are more likely to mimic their parents in terms of cognitive capacity and eagerness to study²². Therefore, the academic achievement of students depends deeply on parental involvement in their academic activities in attaining a higher level of academic excellence²⁴.

Another important variable that will be considered in this study is gender, that is, the researcher wants to find out if there will be gender difference in the academic achievement of students in agricultural science. Although, controversies and contradictions exist in the literature on the influence of gender on students' academic achievement, gender differences in academic achievement are among the issues of concern in the contemporary academic discourse all over the world and particularly, in Nigeria^{25,26,27}. The study on gender difference becomes necessary particularly, in Nigeria because of the gender roles stereotype within families. In Nigeria, it is

believed that tedious and risky work like participation in farming activities are for male children while the common traditional gender roles of female are constrained to less tedious home chores like taking care of the home and the children²⁶. One of the implications of this stereotyped gender role is likely to be a gender bias within the subject preferences for students²⁶.

While some researchers found that there's gender disparity in students' academic achievement others found no difference at academic achievement and achievement of students in general and particularly in agricultural science²⁶. It therefore becomes imperative for a study like this to join the debate on gender difference in students' academic achievement in agricultural science in order to confirm the status of secondary school students in Ibadan Metropolis. In the long run, it is hoped that recommendations from the result will assist in the achievement of the aim of gender equality attainment for sustainable development²⁷.

1.2 Statement of the Problem

Poor achievement of students in examinations generally and especially in Agricultural Science, is a social menace to the country as a whole and to secondary education in particular. One major consequence of students not performing up to standard in Agricultural Science is that they are unable to study agriculture or any related courses at the higher institutions of learning³. In addition, most of the country's young graduates do not desire a career in agriculture and this will in the long run lead to problem of food insecurity. Continuous poor achievement of senior secondary school students in Agricultural Science is one of the indicators that the secondary school education system in Nigeria is externally inefficient, which connotes gross wastage of both public and private investment in education at that level. And this constitutes a great challenge to the internal efficiency of secondary education in Nigeria²⁵. Students' diminishing

achievement in agricultural science has been attributed to quite a few factors such as students' poor attitude to the subject, inadequate school resources for teaching and learning of agricultural science, lack of innovative teaching techniques and home factors. However, the focus of this study is to interrogate the level at which the availability and utilisation of school resources for teaching and learning of Agricultural Science and Home Factors (parents' socio-economic status, parents level of education and family size) determine the academic achievement of senior secondary school students in Agricultural Science in Ibadan Metropolis. This is with the aim of proffering solution to the problem of secondary school students' poor academic achievement in agricultural science.

1.3 Aim and Objectives of the Study

The aim of this study is to investigate the influence of school resources and home factors on the academic achievement of students in agricultural science in Ibadan metropolis of Oyo State, Nigeria.

The objectives of the study are to:

- i. determine the level of students' academic achievement in agricultural science in public senior secondary schools in Ibadan metropolis
- ii. identify the available school resources in the teaching and learning of agricultural science in senior secondary schools in Ibadan metropolis.
- iii. assess the level of utilization of the available school resources in the teaching and learning of agricultural science in the sampled schools.
- iv. determine the combined influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.

- v. establish the relative influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.
- vi. examine whether there is a significant difference in the mean achievement test scores of male and female students in agricultural science in the selected schools or not.

1.4 Research Questions

1. What is the level of students' academic achievement in agricultural science in public senior secondary schools in Ibadan metropolis?
2. What is the level of availability of relevant school resources in the teaching and learning of agricultural science in the sampled schools?
3. What is the extent of utilization of available school resources in the teaching and learning of agricultural science in the sampled schools?

1.5 Hypotheses

H₀₁: There will be no significant joint influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.

H₀₂: There will be no significant relative influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.

H₀₃: There will be no significant difference in the mean scores of students' achievement test in agricultural science for male and female respondents in the sampled schools.

1.6 Significance of the Study

This study, which intends to investigate the influence of school resources (availability and utilization) and home factors on students' academic achievement in Agricultural Science, is of significance to educational administrators and policymakers, teachers, students and their parents and families for the following reasons.

The study can provide empirical evidence of the relationship between school resources and home factors on students' academic achievement in Agricultural Science. By identifying the critical factors for promoting students' academic achievement in Agricultural Science, the study can help educational administrators and policymakers make informed decisions on allocation and effective utilization of resources for teaching and learning of the subject.

The study has the potential to provide insights into how schools and families can work together to effectively support students' teaching and learning of Agricultural Science. By identifying the ways in which school resources and home factors interact to promote or hinder academic success, the study can provide practical recommendations for promoting positive outcomes for students.

The findings of the study will also be beneficial to teachers by providing practical recommendations for utilizing school resources and working with families to support effective teaching and learning of Agricultural Science. By incorporating these recommendations into their teaching, teachers can enhance their students' interest in the subject and subsequently increase their academic achievement in the subject.

The study's findings will undoubtedly be of benefits to students and their families by working out interventions to support students who may be at a disadvantage due to their home background or lack of access to school resources. Therefore, it will promote educational equity by ensuring that all students have access to the necessary resources and support geared towards satisfactory achievement in Agricultural Science. This can help in reducing the gaps in achievement between students from high socio-economic background and those from low financial status homes thereby promoting social mobility and economic opportunity.

In summary, this study on the influence of school resources and home factors on students' academic achievement in Agricultural Science is significant because it can promote collaboration between schools and families to support student learning. Therefore, it has the likelihood of providing valuable insights and recommendations for promoting quality educational and efficiency of the school system and academic achievement.

1.7 Scope of the Study

The focus of the study is on the influence of school resources and home factors on the academic achievement of students in agricultural science in Ibadan metropolis of Oyo State, Nigeria. The dependent variable, which is the students' academic achievement in agricultural science will be measured with Agricultural Science Achievement Test (ASAT). The first independent variable, school resources will be measured using resource availability and resource utilisation in the sampled schools while the second independent variable, home factors will be measured using three indices, which are parents' socio-economic status, parents' level of education and family size. The population and geographical scope of the study include male and female public senior

secondary school 2 agricultural science students (SSS 2 students) and teachers in Ibadan metropolis.

1.8 Limitation of the Study

It is important to note that this study was not without limitations. A major limitation to this study was the difficulty in accessing some of the schools which made it difficult to carry out some of the task needed in this research at the initial stage. Also, most school were not willing to participate in the research achievement test and questionnaire because of the fact that they believe the distribution of the questionnaire and achievement test will distrust their academic activities.

1.9 Operational definition of Terms

Academic Achievement: Academic achievement is the amount of academic content a student learns in a specific time period, which are measured by standardized test and assessments. In this study, students' academic achievement in agricultural science is the level of students' achievement gauged by the marks obtained in agricultural science achievement test.

Achievement Test: This refers to the relevant questions that are set to test the students' level of understanding of what they have been taught in Agricultural Science. This is Agricultural Science Achievement Test (ASAT)

Agricultural Science objectives questions is use as a tools to measure the level of comprehension of the content covered in Agricultural Science

Agricultural Science Subject: Agricultural Science as a subject in the senior secondary school in Nigeria is the study of the cultivation of crops and rearing of animals for man use. It is one of the elective pre-vocational subjects in the senior secondary school curriculum.

School Resources: School resources refer to all facilities and tools in the school environment that are designed to support a concept and aid student rate of assimilation during teaching learning process. They are tools that assisted the teacher to accomplish the act of teaching Agricultural Science.

School Resources for the Teaching of Agricultural Science: These are all the teaching materials that are available and used for teaching agricultural science in senior secondary schools. With reference to this study, school resources for the Teaching of Agricultural Science will be limited to the eleven resources that are included in the instrument of the study (see the appendix).

Resource Availability: These are the needed teaching materials which are readily available for the teaching and learning of Agricultural Science in the sampled senior secondary schools.

Resource Utilisation: This refers to the usage of the available teaching materials for Agricultural Science teaching, learning and practical in the school.

Home Factors: This involves generally; the various aspects of students' family life and background that may influence their academic achievement. In this study, home factors are limited to parents' socio-economic status, parents' level of education and Family size.

Socio-Economic Status: This has to do with the financial status of the family measured by family income and the properties owned by the family. It has to do with the level of parent whether high, medium or lower class.

Family Size: this is the number of people included in a family as well as the type of family. The family can be small size or of a large size. A family of two to three children including the father can be referred to as a small size family while that of five or more children can be said to be large. Most times the large family includes the extended family.

Parent Level of Education: The academic exposure of the parent is referred to as their level of education. This ranges from illiterate to semi-illiterate and literate.

Ibadan Metropolis: Ibadan refers to the capital of Oyo State, south-west Nigeria. It is made up of eleven (11) local government areas. Ibadan Metropolis is made up of five urban and six sub-urban local government areas.

Gender: This is the moderating variable which refers to male and female students and how this difference in gender brings about difference in their academic achievement.

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Chapter Two

Literature Review

This chapter presents the review of related literature on concepts of School resources and home factors as determinants of Senior Secondary School Students' Academic Achievement in Agricultural science in Ibadan Metropolis. The chapter examines conceptual review under the following sub-heads

- 2.1.1 Concept of Students' Academic Achievement
- 2.1.2 Concept of Agricultural science
- 2.1.3 Agricultural Science in Senior Secondary Schools
- 2.1.4 Objectives of Agricultural Science
- 2. 1.5 Concept of Academic Achievement in Agricultural Science
- 2.1.6 School Resources
 - 2.1.6.1 Availability and Utilisation of School Resources for Academic Achievement in Agricultural Science
 - 2.1.6.3 Importance of School Resources for Teaching and Learning of Agricultural Science
- 2.1.7 Concept of Home Factors
 - 2.1.7.1 Parents' Socio-economic Status
 - 2.1.7.2 Parents' Level of Education
 - 2.1.7.3 Family Size
- 2.2 Theoretical Framework
 - 2.2.1 Theory of Experiential Learning
 - 2.2.2 Theory of Motivation
- 2.3 Empirical Review
 - 2.3.1 School Resources and Students Academic Achievement in Agricultural Science
 - 2.3.1.1 Availability and Utilisation of School Resources and Students Academic Achievement
 - 2.3.2 Home Factors and Students' Academic Achievement
 - 2.3.2.1 Parents' Socio-economic Status and Students' Academic Achievement
 - 2.3.2.2 Parents' Level of Education and Students' Academic Achievement

- 2.3.2.3 Family Size and Students' Academic Achievement
- 2.3.3 Effect of Gender on students' Academic Achievement in Agricultural Science
- 2.4 **Conceptual Model**
- 2.5 Summary of Literature Reviewed

Endnotes

2.1 Conceptual Review

2.1.1 Concept of Students' Academic Achievement

Students' academic achievement is the degree to which students are achieving the reasons or objectives for which they were sent to school. It is defined as the result of students' mental ability and capacity in an educational setting such as schools and colleges¹. It is the observable manifestation in persons that is attributed to knowledge, skills, understanding and ideas¹⁰. Academic achievement can also be said to be an observable or measurable behaviour of a person in a particular subject. It refers to how well a student is accomplishing his task and studies. Academic Achievement can therefore, be said to be the proof or evidence of the knowledge gathered from learning activities by a learner over a period of time. It refers to the extent to which learners have achieved their educational goals in the school.

The academic achievement of students seems to be the major means by which the effectiveness or success of an educational institution can be assessed. Achievement test is used in schools to determine the students' academic progress over a period of time. Achievement test is a test geared towards the development of skill or knowledge used to assess students' achievement in different subjects including Agricultural Science. This can be a test or examination given at the end of the lesson, term or session of a course of study. The test/examination provides an accurate assessment of students' proficiency in retaining knowledge within a specific subject².

2.1.2 Concept of Agricultural Science

Agriculture is the science and art of cultivating the soil, producing crops and raising livestock that are directly or indirectly useful to humans. This also includes marketing and distribution of farm produce, processing, financing, farm production supply and service industries, health, nutrition and food consumption, the use and conservation of land and water resources. The term Agriculture is derived from two Latin words *ager* or *agri* meaning soil and *cultura* meaning cultivation³. Agriculture is an applied science which encompasses all aspects of crop production including horticulture, livestock rearing, fisheries, forestry, etc.

Agriculture can be defined as an art, science and business of producing crops and livestock for economic purposes. As an art it embraces knowledge of the way to perform the operations of the farm in a skilful manner but does not necessarily include an understanding of the principles underlying the farm practices.

As a science, it utilizes all technologies developed on scientific principles such as crop breeding, production techniques, crop protection, economics etc. to maximize the yield and profit. For example, new crops and varieties developed by hybridization, Transgenic crop varieties resistant to pests and diseases, hybrids in each crop, high fertilizer responsive varieties, water management, herbicides to control weeds, use of bio-control agents to combat pest and diseases .

Agriculture includes ‘horticulture, fruit growing, seed growing, dairy farming and livestock breeding and keeping, the use of land as grazing land, meadow land, osier land, market gardens and nursery grounds and the use of land for woodlands where they are used for ancillary to the farming of land for Agricultural purposes’⁶.

Importance and branches of Agricultural Science

Agricultural segment plays an important role in the economic activities of a country. The materials needed and economic progresses coming from this sector are; food, for instance wheat, rice, corn, sugar cane, fruits and vegetables. Agricultural sector in addition, supplies livestock and sea-food for mineral and protein needs. The importance of Agriculture science includes the following:

Provision of food

The major source of food provision for most countries is through agriculture. Other sectors of a country depend mostly on the Agricultural sector for food provision without which it will be difficult for the other sectors to survive. The teeming population of Nigeria needs high supply of food s to survive. This makes the Agricultural sector to be of a huge importance to the country at large.

Employment opportunities

Many people find their means of survival from the Agricultural sector. The teeming population of the country needs means of survival. The Agricultural sector solves this problem for majority of people by providing employment opportunities for them.

Supply of raw materials for industries

Agriculture has been a major source for the provision of raw materials for industries for their productions. Industries such as the tobacco industries, rice sheller, sugar factories, meat, and textile factories etc depend on the Agriculture sector for the provision of their raw materials.

Provides a source of income

Another importance of agricultural science is that it is a major source of income for an individual that engages in farming because it's a source of livelihood for them as they earn their living through agricultural practices. It serves as a source of income for farmers as well as their families.

Foreign exchange

Foreign exchange is also made through agriculture. Agricultural products like cocoa, beans, ginger, palm kernel, soya beans, yam etc are exported to other countries which in turn contribute to the gross domestic product of the country in general⁵.

The importance of agriculture to the Nigerian economy cannot be overemphasized. In that, it is evident in the nation's natural endowments in production factors – extensive arable land, water, human resources, and capital. Exploring the nation's productive advantage in this sector is the fastest way to stimulate growth in the economy. Research on this issue is therefore important to help inform policy decisions regarding resource allocation in agricultural growth and development to achieve rapid economic growth³.

Components of agricultural science include crop production which involves the cultivation of different crops which may be food crops or cash crops. Also, Livestock involve rearing of domestic animals a major source of protein for consumption. Such animals include goat, ram, sheep and chicken etc. Another component is Forestry which concerns with the preservation and maintenance of economic trees or plants. In addition, Fishery involves breeding and catching of fish from the river for domestic consumption and commercial purpose. Broadly speaking, agricultural activities are undertaken as peasant farming and or plantation farming. Peasant

farming involves cultivation of small scale acres of land. This is also called subsistence agriculture because it is undertaken to meet domestic needs and survival or to eke out living from the farm produce. Rudimentary agriculture equipment such as hoes, cutlasses, and axes etc. which are crude in nature are usually used. Plantation farming is the system that involves the use of a large estate of land permanently planted with economic or commercial crops which include cocoa, tea, cotton, sugar, tobacco, rubber, sugarcane, palm tree, coffee and other commercial crops. In plantation farming land could be owned by government, private, individuals or corporate bodies⁹. Mechanized equipment and modern inputs are mainly used in plantation farming. Also, the branches of Agricultural science refer to the various field of study in agriculture which are as follows:

Agronomy: This is branch of Agriculture that deals with the production of various crops which includes food crops, fodder crops, fibre crops, sugar, oilseeds, etc. The aim is to have better food crop production and how to control the diseases and pest in agricultural production⁹.

Horticulture: deals with the production of fruits, vegetables, flowers, ornamental plants, spices, condiments and beverages. Horticulture is divided into the cultivation of plant and food plant for ornament.

Forestry: It deals with production of large scale cultivation of perennial trees for supplying wood, timber, rubber as raw materials for industries. It promotes the conservation of forest products which also ensures the conservation of wildlife. It ensures the production of micro climate.

Animal husbandry: This branch of Agriculture deals with agricultural practice of breeding and raising livestock in order to provide food for humans and to provide power (draught) and manure for crops.

Fishery science: It deals with practice of breeding and rearing fishes including marine and inland fishes, shrimps, prawns etc. in order to provide food, feed and manure. It promotes the production of fish and ensures better ways of fish management. Also, it ensures provision of fish meal that helpful in animal feed production.

Agricultural Engineering: This has to do with farm machinery for field preparation, inter-cultivation, harvesting and post-harvest processing including soil and water conservation engineering and bio-energy. It ensures the development of processing and storage equipment. It promotes the mechanization of processing and storage equipment. It promotes mechanization of farm operations and it also ensures the maintenance of farm tools and implements⁶.

Home Science: This deals with application and utilization of agricultural produces in a better manner in order to provide nutritional security, including value addition and food preparation otherwise known as food nutrition.

Soil science: This is an aspect of Agriculture that deals with the study of soil as a natural resource on the surface of the earth including soil formation classification and mapping, physical, chemical, biological and fertility properties of soil which is in relation to the use and management of soil. It ensures the maintenance of soil fertility and also aids better soil classification which also prevents erosion⁴.

Heliculture: This is a branch of Agriculture that deals with the process of raising edible land snails for human consumption or domestic use. It is a good source of protein. It also produce shell for use in some industries given the fact that shell is a good source of calcium, snails are useful for healing diabetes patients.

Aquaculture: This is a branch of Agriculture that deals with the study and production of fish, shrimps and other aquatic animals

Apiculture: this is an aspect of Agriculture that deals with the study and rearing of bees and its allied products such as wax, propolis, pollen, royal jelly and venom. Apiculture which is also called bee farming produced honey which is used for many industrial purposes e.g. production of candles, cosmetics and for medicinal purposes etc⁶.

On integration, all the branches are grouped under crop production, animal management and their allied agricultural branches.

2.1.3 Agricultural Science in Senior Secondary Schools

The inclusion of agriculture in the curriculum of secondary schools is driven by its educational value and its relevance to both the individual learner and society as a whole⁴. As one of the science subjects at the secondary school level, agriculture holds significant importance and serves as a powerful tool for self-reliance. Moreover, it serves as a prerequisite for higher education disciplines such as veterinary medicine, agricultural engineering, fishery, animal/livestock production, forestry, and others.

The introduction of agricultural science education in Nigerian secondary schools dates back to 1967. In the National Policy on Education, agricultural science is listed as one of the vocational

elective subjects offered at the Senior Secondary School level^{4,5}. The curriculum for agriculture was collaboratively developed by the Nigerian Educational Research Development Council (NERDC) and the West Africa Examination Council (WAEC)⁶.

Agricultural Science, being one of the subjects offered by West Africa Examination Council (WAEC), is taught through both theoretical and practical approaches. Practical experience is often provided to students through the utilization of school farms or gardens and through field trips to local farms and agro-based industries⁴. The agricultural science curriculum has been considered as adequate and appropriate in the Nigerian context. However, a significant deficiency in the availability of resources required for its implementation to fully achieve its intended objectives has been identified a major challenge to effective teaching and learning of agricultural science⁸. Specifically, inadequate farmlands for practical lessons, inadequate funds to manage practical-oriented agricultural science, the inability of students to regularly practice on farms and the use of traditional methods of teaching heavy teachers' workload and shortage of qualified agriculture teachers have been identified as challenges militating against the effective teaching and learning of agricultural science at the senior secondary school level^{2,6,8}.

The curriculum content for senior secondary school agricultural science is structured around three main areas: production (food production), projection (agronomy and forestry), and economics (agricultural economics and farm management). The curriculum recommends the use of the "Guided Discovery" method, which emphasizes learning by doing⁵. This approach enables students to explore and utilize agricultural resources within their local environment, fostering their abilities in food production and other agricultural activities for themselves and their community.

2.1.4 Objectives of Agricultural Education in Secondary School

According to the National Curriculum for senior secondary school, Agricultural Education is designed to establish a strong foundation for vocational agriculture. Its primary objective is to train individuals in acquiring relevant occupational skills that will enable them to become productive farmers^{2,4}. Another key objective is to train agricultural science teachers and students alike to enable them to play a supplementary role of agriculture extension agents in their respective communities⁹. The introduction of vocational agricultural education at the senior secondary school level in Nigeria is aimed at training agricultural science students to become good workers in both on-farm jobs and off farm jobs as well as to acquire relevant knowledge and skills needed for further academic and professional advancement at the tertiary institutions including agricultural colleges and universities⁹. The introduction of agriculture into the educational institution are essential components of the curriculum and indicates strongly that policy makers have realized that the problem confronting Nigerian Agriculture can partially or if not completely, solved through agriculture education.¹⁰

As contained in the curriculum, the broad objectives of agricultural science at secondary school level among other are to:

1. Stimulate and sustain students' interest in agriculture.
2. Enable students acquire basic knowledge and practical skills.
3. Enable students integrate knowledge with skills.
4. Prepare students for further studies in agricultural education.

5. Expose students to occupation in agriculture.

6. Prepare students for opportunities in the field of agriculture.

2.1.5 Concept of Academic Achievement in Agricultural Science

Students' academic achievement in agricultural science is the level of students' achievement which is determined by the marks obtained in agricultural science test or examination. The Chief examiners report of 2017-2021 on Agricultural science reveals that there had being consistent decline in candidates' academic achievements in agricultural science over the past five years¹¹. This situation has affected the educational pursuits and aborted the ambition of many candidates who aspired to study professional courses like agricultural engineering and agricultural education. Several studies have been conducted in and outside Nigeria to investigate the causes of students under achievement in agriculture and other science subjects. The most recurring factors in all reports include inadequate teaching strategies employed by the teachers, and also, other factors that negatively affect agricultural science achievement include students' background, students' lack of interests, students' negative attitude towards agriculture, teacher-related factors like poor teacher preparation, unqualified Agricultural science teachers, inadequate instructional materials, poor teaching methods and lack of exposure to different agricultural experiences¹². General observation indicated that students perform poorly in agriculture and the WAEC Chief Examiner's report attributed the poor achievement to lack of agricultural practical.

Year	Candidate population	Raw mean score	Standard deviation
2017	494,920	38	16.79
2018	369,542	33	13.67

2019	358,531	31	13.04
2020	534,206	45	14.07
2021	530,597	44	13.17

Source: Chief examiners report of 2017-2021 on Agricultural science

From the above, it is clear that students need to be well exposed to laboratory activities and agricultural experiences early enough to have a good understanding of agricultural concepts and be able to guide against all the simple mistakes and errors committed during external examinations. In WAEC chief examiners report, it was also reported that candidates lost marks due to their lack of exposure to agricultural experiences such as fishery, poultry management, plantation farming, forestry, arable crop production among others¹³. To solve these problems, teachers should be encouraged by means of sponsorship to expose the agricultural science students to those agricultural experiences and workshops that will expose them to more knowledge and increase their interest to continue in agricultural science fields. In addition, instructional materials should be provided by schools or improvised by teachers, for effective teaching and learning.

2.1.6 School Resources

School facilities have been found out to be a highly powerful element in quantitative instruction. The importance of teaching and learning, as well as the provision of appropriate educational facilities, cannot be exaggerated. The maxim "teaching is inseparable from learning, but learning is not separable from teaching" states that teachers impart in order for students to study, however learners may study without teachers. Education may occur through contact with an individual's

surroundings, which denotes to facilities availability to learners to encourage their learning results. These facilities comprise books, audio-visual, software, and educational technology gear, in addition to the scope of the classroom, farm structures, and school farms, in addition to the accessibility of tables, seats, chalkboards, and shelves on which apparatuses for practical are organized¹⁴.

Facilities are a strategic feature in organizational functioning. This is because they have an enormous influence on the smooth running of any social structure or scheme, comprising education. A Researcher went on to say that their accessibility, sufficiency, and relevance promoted efficiency and high production. He underscored that a country's or civilization's wealth might impact the quality of education in that nation, emphasizing that a wealthy society will develop decent schools with quality instructors and learning infrastructures. With such chances, kids may learn more easily, resulting in improved academic achievement. The function of facilities in teaching is crucial and no efficient scientific education program can exist without teaching equipment. This is because the facilities allowed the student to acquire problem-solving abilities as well as scientific mindsets. According to another author, when facilities are supplied to satisfy the relative demands of a school system, pupils will not only have access to the reference materials stated by the instructor, but they will also learn at their own paces. The net result is improved overall academic achievement among all kids.

It was discovered that the classroom learning environment in certain schools was unsatisfactory in a research on resource concentration, usage, and management as determinants of students' learning outcomes in Ibadan Metropolis. He provided examples of schools that did not have chalkboards, did not have ceilings, did not have roofing sheets, and had windows and doors

removed, among other things, a scenario that the researcher deemed detrimental to the learners' health¹⁴.

Poor and insufficient physical facilities, outmoded teaching approaches, and overcrowded classrooms, among other things, were listed as reasons why high academic achievement is not popular in Nigeria. It was argued that school facilities, when given, will enhance the teaching learning program and, as a result, increase academic achievement of pupils, while the models governing their provision to schools might take any shape as logical bureaucratic and or political model. According to him, whichever model is used, there is always a common trait of varying allocation of facilities to schools. On the other hand, observed that certain schools were given preferential treatment in terms of facility allocation at the expense of others. A research work mentioned in her article on low student achievement in public examinations that in many developing countries, some physical facilities are non-existent, and that those that are present are often of poor quality. Other researchers have recognized the importance of facilities in teaching and learning domains in various ways¹⁶. They stated that the absence or inadequate (or deteriorating) quality of educational facilities can have an impact on academic achievement. Similarly, it was discovered that after student background characteristics were taken into account, facilities, teacher salaries, books in the library, and the availability of a scientific laboratory had no influence on variation in student achievement. This remark implies that in order for a student to do well at a higher educational level, he must have been groomed or cushioned by the availability of resources in his primary days, which he now exploits as a springboard. Facilities through which learners are mediated affect their attitudes to some extent¹⁷. Indeed, building conditions can have a direct impact on students' attitudes or the attitudes of instructors and parents, which in turn affect students' views.

Physical surroundings, whether basic or complicated, elicit human reactions in the form of sentiments, attitudes, values, expectations, and wants, according to author. Their links to human experience and behaviour must be understood in this manner, in addition to their recognized physical features.

The quality of a physical environment is associated to non-cognitive outcomes such as positive attitudes about education. These consequences might eventually lead to improved academic achievement. An author concluded that when people's surroundings are nice, they feel better about themselves. Students with positive attitudes tend to study more and work more. According to a Primary school kids' opinions observed regarding their school classrooms discovered that students housed in newer classrooms that were completely carpeted and air-conditioned had more favourable sentiments than students housed in older classrooms¹⁷.

Laboratory

A laboratory is a room, or a structure equipped with specialized equipment for teaching by demonstrating theoretical phenomena in practical terms. According to the adage that "seeing is believing" when it comes to the influence of employing laboratories in science and other scientific-related fields, stating that students comprehend and retain what they see more than what they hear or are told. A laboratory is crucial for scientific instruction, and the success of any science course is heavily reliant on the laboratory provision established for it¹⁵.

There is a broad agreement among scientific educators that the laboratory plays a fundamental role in science teaching. It may be regarded as a location for practical. To sustain and raise students' interest in topics involving laboratory work, the instructor should be actively involved

in order to convey information and facts to students for successful achievement in any tests. In accordance with this, one can inquire to what degree a laboratory has been able to fulfil its goals.

Researchers noticed in another research work that the teacher plays the role of information distributor, with the laboratory fulfilling the function of drill or verification. They went on to say that on the other end of the spectrum, the instructor serves as a guide to learning and the laboratory serves as a location where information is found. No successful scientific education program can exist in the absence of instructional equipment¹⁶. An author observed in her article on the current state of our high schools that laboratories have devolved into racks of empty chemical bottles. It was found out in another research that no course in science and mathematics can be deemed complete unless it includes some practical activity. The practical work ought to be carried out by individuals either in science laboratories or in classes. At school level, practical work is even more important because of the fact that we learn by doing. Scientific practices and applications are thus rendered more meaningful when laboratories are available in schools. It is an established truth that an object handled impresses itself more firmly on the mind than the object merely seen from a distance or in an illustration. Thus, practical work forms an important feature in any science and mathematics course¹⁷. Individuals should perform the practical work in scientific laboratories or in classrooms. Practical work is much more vital at the school level since we learn by doing. It is a well-known fact that an object handled leaves a stronger impression on the mind than an object seen from a distance or in an illustration. Thus, practical is a crucial component of every scientific or mathematics study¹⁸.

Classroom

It has been indicated that the availability of physical infrastructure, particularly the school building, is critical to the success of any educational activity. The existence of a school building contributes to improved academic achievement by enhancing effective teaching-learning activities. In most schools in the sub-urban area of Ibadan Metropolis, the students do sit on bare floor due to the fact that the classes are scarcely furnished with chairs and lockers; this is also coupled with the fact that the classes were over populated. It was also noted that well-located school classrooms with aesthetic circumstances such as a playground and restroom typically lead to student having greater educational success. Classrooms are an extremely important input to the educational system, highlighting that their usage may either encourage or hinder learning.

It can be said that pessimism regarding any meaningful association between such pricey structures and academic achievement, lending validity to the aforesaid conclusion. It was also discovered that in secondary school education in Nigeria, there is substantial evidence and a catalogue of deficiencies in the provision and judicious use of school classrooms and instructional resources from Inspectors' reports over the years. Many lessons have been held in unsanitary circumstances, with some schools lacking a ceiling, others lacking doors, windows, and shutters, and other classroom floors lacking concrete. The situation is significantly worse in rural regions, and under these adverse conditions, little learning can be expected. Classrooms, offices, assembly halls, labs, and staff quarters are required. Furniture for staff and students, books, science equipment, games, and athletic equipment are needed, all of which must be in excellent shape for schools to function efficiently.¹⁹

The deplorable state of public schools in Nigeria in which school classrooms lacked roofs, windows, and doors, some walls were cracked, instructional facilities were lacking, and teachers

were frustrated due to a lack of equipment facilities to meet educational endeavours. In terms of infrastructure, supplies, use, and provision, Comparing schools in underdeveloped nations to those in the developed world. It was observed that education in underdeveloped nations such as Nigeria takes place under conditions that are quite different from those in wealthy countries such as the United Kingdom. Primary school students in industrialized nations are more likely to attend school in contemporary, well-equipped classrooms with a well-thought-out curriculum in terms of breadth and sequencing.²⁰

One of the most powerful variables that contribute to academic achievement in the school system is amenities. They include classrooms, dormitories, libraries, labs, furniture, recreational equipment, apparatus, and other teaching resources. He went on to state that their availability, relevance, and appropriateness contribute to academic success, and that unappealing school classrooms, among other things, lead to poor academic accomplishment. According to him, educational facilities should be positioned in appropriate locations while taking the demands of the users into account. In another development, it was discovered that no substantial difference between student in secondary schools with and without suitable instructional facilities. However, he said that instructional facilities were essential to students' academic achievement in English, Mathematics, Biology, and Geography, although students may perform well in other courses despite the lack of advanced instructional resources. He concluded that the effect of instructional facilities on students' academic achievement is more felt in pure and social sciences than in other subjects²¹.

School Farm

Most topics in Agricultural Science were taught theoretically in the classrooms without any practical work or the use of appropriate instructional resources. Students perceive the topic as difficult as a consequence of inadequate practical sessions in the teaching of Agricultural Science.

School farm and its influence on Students' Academic Achievement

School farm is also a component of the school activities which has link with the birth of a more productive agriculture. It is a selected plot of land in the school environment where students' carryout practical agriculture both in crop production and animal husbandry²². This helps the students to acquire knowledge and practical skills in agriculture and agricultural related opportunities.

Problems associated with school farm are; lack of adequate teachers, lack of laboratory facilities, lack of equipment, small amount of land and attitudinal problem of students, the host community and the unserious attitude on the part of the administrators²³. Poor funding of the vocational agriculture in secondary schools, keeping abreast with development in the field of vocational agriculture and communication of such development to students and the administration of vocational agriculture by non-specialists are problems facing the school farms.

More so, inability of the curriculum to transmit employable skills to students, lack of required materials and resources for vocational agriculture delivery and lack of interest on the part of students pose as a problem to school farm.²⁴

Agricultural Textbooks

A textbook is regarded as a vital resource for academic achievement. Many authors have emphasized the importance of textbooks in academic success. In certain cases, studies have indicated that textbooks are the only source of knowledge for students as well as the path of study for the topic. It was discovered by researchers that, in their longitudinal data from a nationwide sample of eighth grade mathematics classes in Thailand, that textbooks may impact achievement by substituting for more post-secondary mathematical education of instructors and by giving a more complete curriculum. Nothing has ever replaced the printed word as the key element in the educational process and, as a result, textbooks are central to schooling at all levels". In empirical studies of use of textbooks and educational achievement involving 1,006 primary school pupils, it was revealed that students who had used more than two textbooks were almost three times as likely to pass compared to students that used one textbook²⁵.

In an article on instructors' reliance on textbooks, an author argued that individuals attempting to increase educational quality assumed that improvements in instructional materials would necessarily lead to changes in real teaching. Textbooks may be a fantastic and beneficial resource for many instructors without taking away the teacher's role. While textbook selection has been determined to be critical to academic achievement, it is unfortunate that suitable textbooks are not available for teaching and learning activities. The high expenses might be linked to a lack of textbooks. When this occurs, he goes on to say that students cannot afford to buy. The suggestion is that the instructor will be the exclusive source of information. Where the teacher is the only source of information, his choice of a textbook may be biased in the sense that it may be based on unsatisfactory criteria such as its attractiveness in terms of colour, print, photograph, the author's qualifications, and the recognition he has accorded in some other publications. It was found out that a substantial association between suggested textbooks and

academic success in introductory technology, Business Studies, and Home Management in his study on resources and resource usage as indicators of academic achievement²⁶.

Library

The library, as a resource, is important and primary in any educational system. It supports all aspects of school instruction and offers readers service and assistance. According to author, a library must be current while yet providing access to older literature. It requires adequate financial assistance to fund goods and services, among other things. A school library's objective is to make available to students, at their leisure, all books, magazines, and other reproduced materials that are of interest and value to them but are not supplied as basic or supplemental textbooks.

Secondary school libraries, in whatever form, have supplanted the old approach of 'chalk and talk' in transferring information to pupils, and its influence on academic success cannot be overstated. As a result, the author stated that a well-equipped library is a significant facility that promotes good learning and great educational achievement. School libraries may not be useful if the books in them are not adequate and up-to-date, as their influence may only be relevant if the library is available to kids at all times during the school day. With all the above mentioned facts, it is sad to know that many schools operate without libraries whereas an author had earlier noted that total absence of an organized school library would continue to spell dooms for thousands of secondary school students²⁷. This comment plainly emphasized that many schools lack libraries, which had a negative impact on their kids' academic achievement. Furthermore, an author recognized a school library as an educational resource that can considerably affect students' achievement after adjusting for the students' home environment. Thus, in 15 of 18 tests, the

effect of library size and activity was shown to be positive. It was revealed that library correlates with academic achievement and those schools with well-equipped libraries typically retain high academic achievement in another study on the link between instructional facilities and academic achievement. The collection of books retained for reading in the library is connected to achievement in another study on improving school quality in poor nations²⁸.

2.1.6.1 Availability and utilization of School Resources on academic Achievement in Agricultural Science

Availability of resources means having at hand the required or needed school resources for teaching and learning of agricultural science while resource utilisation refers to the extent at which the available school resources for the teaching and learning of agricultural science in the school are being used.

Some of the resources mentioned earlier such as laboratory, library, school farm, farm tools or equipment, specimen of Agricultural Produce, current and relevant agricultural textbooks etc are resources expected to be available for the teaching and learning of Agricultural science in senior secondary schools. Some schools have them while some are discovered to lack these resources.

Most schools are faced with lack of tools, equipment and other capital items such as lack of seeds, feeds, fertilizer and other operating suppliers, inadequate training for teachers to use the farm for practical purposes. In addition, lack of staff personnel to run the farm was seen as the most serious problem facing the school farm. Closely followed by lack of updated equipment and machinery are inadequate state of the teaching facilities²⁹.

The fact that some schools possess the items mentioned above does not indicate that they are put to use. Some items available may be damaged or malfunctioning which might make them to be

unavailable for use. Also, some resources may be available while the teachers may lack the skill at using them. Utilisation is the hallmark for the availability of the school resources in a school. It will be easy to check the achievement of students based on what they have been taught in agricultural science if the available school resources are being used³⁰.

Furthermore, availability and utilisation of school resources promote effective teaching and learning activities in schools while their inadequacy and unavailability may affect the academic achievement of the learner negatively.

2.1.6.2 Importance of School Resources for Academic Achievement on Agricultural Science

School resources are crucial for effective teaching and learning of Agricultural Science. Agricultural science is a practical-based subject that requires hands-on learning experiences. Thus, the availability of school resources such as land, school farm, tools and equipment is essential for students to apply theoretical knowledge to practical scenarios.

In addition, school resources such as textbooks, journals, and other learning materials provide students with a comprehensive understanding of the subject matter. These resources also enable students to carry out research, analyse data, and draw conclusions³¹.

Furthermore, school resources such as laboratories and research centres provide students with an opportunity to conduct experiments and research projects that deepen their knowledge and understanding of Agricultural Science.

Therefore, it is essential for educational institution to prioritize the provision of adequate resources to promote effective teaching and learning of Agricultural Science.

2.1.7 Concept of Home Factors

Home factor refers to Parents' socio-economic status as independent variables and envisaged it to have influence on the academic achievement of students. It is a fact that families where the parents are privileged educationally, socially and economically promote a higher level of achievement among children³². They also give higher level of psychological support to their children through enriched atmosphere that promotes and encourages the development of skills required for success at school. The home factors include but not limited to the socio-economic status, educational background of a student's parent as well as the family size. All these have been discovered to influence a students' academic achievement in one way or the other.

2.1.7.1 Parents' Socio-economic Status

Socio-economic status is a combined measure of economic status and position of an individual or family relative to others on the basis of income, education and occupation. For instance, children of highly educated mothers obtain higher test scores. However, parents' educational background and occupational status have significant effect on academic achievement of their children than family income alone²⁹. A number of studies have established that parents of higher socio-economic status are more engaged in their children's education as compared to the parents with lower socio-economic status and their greater parents' participation and involvement promote more positive attitudes toward school, improves home work habits, reduces absenteeism and dropping out, and enhances academic achievement. Parents' income is determined by parents' level of education and occupational status, and the ability of the parents to provide necessary facilities or materials that can help in making learning of school subjects easy for the students thereby enhancing the students' academic performance³². This involves textbooks for English

language, mathematics, agricultural science and other school subjects which will help the students to learn and have better understanding of agricultural science at secondary school level. If the basic instructional materials are in short supply, little can students' achieve in their academic pursuit. This theory therefore relates to the idea which buttresses the early psychological finding on motivational theories which emphasizes that a child can only focus on his/her studies if other needs such as his or her physiological needs like feeding, clothing and shelter are met²⁹. This study will identify gap existing between parent socio economic status and academic achievement of their wards and make appropriate recommendations that will enhance academic achievement of their children in agricultural science in secondary schools in Ibadan metropolis.

2.1.7.2 Parents' Level of Education

Education is defined as the aggregate of all the process by which a child or young adult develops the abilities and other forms of behaviour which are of positive value to the society in which he/she lives²⁷. Education also plays a role in income. Income earnings increase with increase in level of education. Those with highest degrees, professional and doctoral degrees, make the highest monthly earnings while those with a national diploma for instance earn less. Higher levels of education are associated with better economic and psychological outcomes (i.e. more income, more control, and greater social support and networking). Education plays a major role in skill sets for acquiring jobs, as well as specific qualities that stratify people with higher socio-economic status. In concerted cultivation, where middle class parents take an active role in their

children's education and development by using controlled and organized activities and fostering a sense of entitlement through encouraged discussion. Families with lower income do not participate in this movement, causing their children to have a sense of constraint²⁹. A division in education attainment is thus born out of these two differences in child rearing. Low income families can have children who do not succeed to the levels of the middle income children who can have a greater sense of entitlement, be more argumentative, or better prepared for adult life²⁹.

2.1.7.3 Family Size

The family is a group of people related by blood, birth, marriage or adoption which can either be nuclear- a family unit consisting of two adults and any number of children living together or extended- this involves grandparents, aunts, uncles, and cousins, either all living nearby or within the same household or Reconstituted family- this is also known as blended family or step family. On the other hand, family can either be monogamy or polygamy in nature. A family can either be small or large in number³³. The size of a family is of great importance to students' academic achievement because of the opinion that children from small size families have greater inclination to academic excellence than those from large size families³⁴. Moreover, a child's intelligence is largely determined by the family circumstance. A family that is large in size may impede learning because the provision of adequate learning facilities may be lacking. Parents with fewer children devote more attention to and interact more with each child. Such children, feel more the warmth of family affection and are thus, motivated to perform better academically.

2.2 Theoretical Framework

This study's theoretical framework was based on the theory of Experiential Learning by John and McClelland's Achievement Motivation Theory.

2.2.1 Theory of Experiential Learning

Experiential learning as a concept can be credited to John Dewey, Jean Piaget, and Kolb³⁵. They argue that intelligence is shaped by experience, which derives from each individual students' interaction with his/her environment¹⁶. Experiential learning is a system of learning by doing, and it is often referred to as learning by reflection on doing. Although hands-on learning is a type of experiential learning, it does not always require students to reflect on their work. Pattern or didactic learning, in which the student plays a relatively passive role, is distinct from experiential learning.

Experiential learning is based on the idea that the best way to learn something is to actually do it. Those adventures also stick in your mind, assisting you in retaining facts and remembering knowledge. It is critical for educators to provide opportunities for kids to have exploits based on what they are learning about. Instructors can help create environments where students can learn and experience new things at the same time.

Concrete learning, reflective observation, abstract conceptualization, and active experimenting are the four stages of the experiential learning theory. The first two stages of the cycle are concerned with grasping an experience, whereas the third and fourth stages are concerned with altering an experience. Kolb contends that effective learning occurs when the student progresses through the cycle, which they can engage at any time. Concrete learning is when a learner gets a new experience or interprets an old experience in a new way. Reflective observation comes next,

where the learner reflects on their experience personally. They use the lens of their experience and understanding to reflect on what this experience means.

The learner generates new concepts or alters their thinking based on the experience and their reflection on it, which is known as abstract conceptualization. The student applies the new ideas to the world around them in order to see whether there are any adjustments that may be made. This procedure can take place in a short amount of time or over an extended period of time. Learners will have their own preferences for how they join the cycle of experiential learning, according to Kolb, and these choices boil down to a learning cycle¹⁴.

The experiential learning cycle is based on the premise that each person has a distinct set of learning tendencies that are prevalent at different stages of the learning process. Some learners, for example, will excel in tangible learning and reflective observation, while others will excel at abstract conceptualization and active experimentation.

Relevance of the Theory to the Study

Experiential learning theory is relevant to this study because it emphasised the idea of involving practical in teaching and learning of agricultural science. Experiential learning through practical sessions and use of resources in agricultural science education can allow students to immediately apply things they are learning in the classroom to real-world experiences. The students are able to convert the knowledge acquired into real life situations. Also, experimenting theories through practical helps the students to retain the knowledge and make

the students to master the content of the curriculum. Therefore, it allows students to participate actively and effectively thereby eliminating boredom and making the subject interesting to students. Practical makes students to be independent and grant them better understanding of the scope. Experiential theory encourages the availability and use of relevant resources in the teaching and learning process.

2.2.2 Theory of Motivation

McClelland's Achievement Motivation Theory defines the links between beliefs, attitudes, norms, intentions, and behaviours of individuals. Achievement Motivation Theory seeks to explain and predict behaviour and achievement base on an individual's demand for performance, power, and affiliation³³. McClelland's work in the 1940s spawned the Achievement Motivation Theory in Methods of Measuring Human Motivation, human reasons relating to the achievement motive, the affiliation motive, the sexual desire, and the power motive in 1958. However, in his later study, The Achieving Society, concentrated on only three needs: performance, affiliation, and power. In summary, McClelland's theory proposes that people are motivated to varied degrees by their need for Performance, need for Power, and need for Affiliation, and that these wants are acquired, or learnt, throughout the course of a person's life. In other words, the majority of people has and will demonstrate a combination of three requirements.

The demand for Achievement was described by authors as "success in competition with some standard of perfection." That is, the purpose of some character in the tale is to succeed in a competition against some standard of greatness³⁶. Although the person may not accomplish this objective, the fear of competing with a level of perfection allows one to define the goal desired as achievement goal. The demand for Achievement was described by authors as "success in

competition with some standard of perfection." That is, the purpose of some character in the tale is to succeed in a competition against some standard of greatness. Although the person may not accomplish this objective, the fear of competing with a level of perfection allows one to define the goal desired as achievement goal. Similarly, the urge for Achievement as the drive to accomplish something tough, achieve a high level of achievement, and master complicated activities makes one to be goal oriented. Individuals with a desire for Achievement strive to achieve reasonable yet ambitious goals. This theory is applicable to my research because students will attempt to meet the need for achievement by excellent academic success, since the need for achievement is the unconscious desire for greatness in accomplishments through individual efforts. As a result, variables influencing students' motivation for achievement must be investigated in order to comprehend such aspects and their impact on secondary school students' academic achievement in agricultural Science in Ibadan metropolis.

Relevance of the Theory to the Study

This theory is relevant to the influence of students' motivation as a result of the motivating factors for excellent achievement in Agricultural Science being in place. The theory focuses more on what the right factors both in the home and at school can do to the students. Students that are well motivated will do well in their academics in the school. Proper motivation could cause a student to conform to certain interest, norms or behaviours that can foster their achievement in Agricultural Science. Parental financial capability and encouragement coupled with the availability of the necessary resources in the school will help motivate the students.

2.3 Empirical Review

2.3.1 School Resources and Students Academic Achievement in Agricultural Science

Previous Studies carried out on school resources considered in this study (classroom, library, school farm, laboratory, textbooks etc) and their influence on students' academic achievement is discussed under the following sub-headings:

2.3.1.1 Availability and Utilisation of School Resources and Students Academic

Achievement

A study was conducted to assess the effect of school factors on academic achievement of agricultural science student in senior secondary schools on Oyo west Local Government Area of Oyo state. The study adopted the descriptive survey research design of the ex-post factor type and made use of a sample of 100 structured questionnaires. Data collected were analysed using means, standard deviation and multiple regressions. Variables that contributed significantly to student achievement in Agricultural science are textbook conducive environment, classrooms, instructional materials, health service, laboratories and libraries. All these variables have been claimed to have contributed significantly to students' achievement in Agricultural science²⁴. The study submitted that no effective science education programme can exist without provision of equipment for teaching. This is because facilities enable the learner to develop problem solving skills and scientific approach. Agricultural Science cannot be properly taught without adequate facilities and equipment, such as storage facilities, tractors, machines, tools, and modern laboratory, experimental farm and other teaching facilities and most of these were discovered to be lacking in most of the schools³⁵.

Also, another study aimed at discovering areas of difficulty encountered by teachers in teaching certain contain areas discovered that one of the reasons for teachers' difficulty in teaching certain

content areas of the Agricultural Science syllabus is due to lack of relevant instructional materials in reducing teachers' instructional difficulties in identified content areas of the Agricultural Science syllabus. According to the data, the existence of school farm does not appear to affect academic achievement of students in secondary school agriculture, since achievement was greater in schools without farm structures than in schools with farm structures²³.

Furthermore, a study on the implementation of the 8-4-4 high school curriculum encountered a number of hurdles and issues owing to a shortage of facilities such as agricultural tools and machinery, as stated in the KIE assessment report conclusions. The association between achievement and textbook availability was more constant than the relationship between achievement and other factors such as teacher training, class size, and amenities. It was discovered that most public schools were established without sufficient planning; hence the majority of schools lacked instructional facilities such as labs and classrooms. The lack of these resources and facilities has been exacerbated by fast school enrolment and development, as well as significant societal demand for education. From the various facts highlighted above, attempts were made to identify the contributions of some elements that constitute these facilities and their impact on academic achievement of students. The availability and use of teaching and learning materials affect the effectiveness of a teacher's lessons²².

In a research titled "Educational Resources Availability and utilization as determinant of students academic achievement in south west Nigeria", the researcher examined the impact of resources adequacy and utilisation on students' academic achievement on Saruana Local Government Area of Taraba State, Nigeria. The research adopted a simple random sampling technique to randomly select twenty (20) public secondary schools in the area. Through the use of a structured

questionnaire, relevant data were collected and analysed using frequency count, mean, standard deviation among others. These were used to answer the research question and to determine the degree of relationship between resources adequacy, resources utilisation and academic achievement of secondary school students. The result of the findings showed a high positive relationship between resources adequacy and student's academic performance. It however revealed low positive relationship between resources utilisation and academic achievement of students. Suggestions for the procurement of more funds and resources in public secondary schools were made in order to enhance students' academic achievement among others³¹.

The availability and utilization of resources by teachers in teaching and learning activities may have an impact on students' achievement. Teachers must be willing to try new methods, tactics, and approaches to education, as well as update their assessment instruments and evaluation criteria. The availability of resources and their utilization by secondary school instructors was proven to have a favourable influence on student achievement. Researchers also found a positive effect of resources on student's achievement when they provided teachers with a wide variety of computer - based resources to integrate with instructional activities. Other researchers, in a research conducted in Florida, found that the more resources the students were provided with in the classroom the better they improved in their achievement³⁸.

Also, in a research titled "Influence of School Farm on Teaching of Agricultural Science in Senior Secondary Schools in Ikwuano Local Government Area, Abia State" the findings of the study reveals that school farm has a positive influence on the teaching of agricultural science in senior secondary schools in Ikwuano Local Government Area of Abia State. Based on these findings, it was recommended among others that government and even the school management

should always ensure the establishment of a functional school farm in schools and both the agricultural science teachers and the students on their own should always ensure proper management and utilization of the school farm³⁹.

Another study established the impact of school facilities on the academic achievement of secondary students in Kaduna state, Nigeria. The study was guided by two objectives which included: the impact of school facilities on academic achievement of students, identification that school building in poor shape lead to reduced learning. Descriptive survey design was used, and the sample was 100 students which were selected from the population of 10 secondary schools from Kaduna state Nigeria. A questionnaire was used in the collection of the data for this study and descriptive statistical tool such as frequency, simple percentage and mean was used to process the data. The study found out that the inadequate or poor school facilities affects the academic achievement of secondary school students and teachers negatively. The study also revealed that maintenance culture of available facilities is a major problem⁴⁰.

2.3.2 Home Factors and Students' Academic Achievement

Socio-economic status of parents is one of the most important variables in determining the academic achievement of students. Socio-economic status is a combined measure of an individual's or families' economic and social position relative to others, based on income, education and occupation. A family's socio-economic status is based on family income, parental education level, parental occupation and social status in the community (such as contacts within the community group associations, and the community's perception of the family). Parental involvement takes many forms including good parenting in the home, the provision of a secure and stable environment, intellectual stimulation and parent-child discussion.

2.3.2.1 Parents' Socio-economic Status and Students' Academic Achievement

A study examined the prediction of students' achievement in Agricultural Science by parents' socio-economic background in selected secondary schools in Ogbomosho South Local Government, Oyo State, Nigeria. It made use of 300 senior secondary school students drawn from ten secondary schools in Ogbomosho South Local Government, Oyo State, Nigeria. An agricultural achievement test containing fifty multiple choice items was used together with socio-economic pattern questionnaire these contain a section for students to fill in their demographic data was used to gather data. Five research questions were formulated to guide the study. Data analysis involved the use of descriptive statistics, Pearson product moment correlation coefficient, and t-test. The result showed that fathers that have secondary school certificate dominated the group while fathers that have no educational qualification have the least. It was also revealed that secondary school certificate and primary school certificate dominated the group mothers that have secondary school certificate being the modal qualification. It was also

showed that there is a significant difference between parents' educational qualification and students' achievement. It was also revealed that there is a significant difference between the nature of family and students achievement Nature of family. It was revealed that there is low negative relationship between students' access to learning materials and their achievement in Agricultural Science. It was showed that there is a high positive correlation between socio-economic background and students' achievement in Agricultural Science. The implication of the findings was also discussed, and suggestion for stakeholders in education industry⁴¹.

In another research work titled "socio-Economic Determinants of Students' Academic Achievement in Building Technology in North-Central Nigeria" the results of the study showed that building technology education in Nigeria is male dominated and that the socio economic determinants of students' academic achievement in building technology includes family social economic level among others. Parents' income is determined by parents' level of education and occupational status, and the ability of the parents to provide necessary facilities or materials that can help in making learning of school subjects easy for the students thereby enhancing the students' academic performance. This involves textbooks for English language, mathematics, agricultural science and other school subjects which will help the students to learn and have better understanding of agricultural science at secondary school level. If the basic instructional materials are in short supply, little can students' achieve in their academic pursuit⁴².

Another study aimed at investigating socio economic status, school climate and study habits of secondary school students as determinants of academic achievement. The study also explored study habits based on gender and locale basis. The study was conducted on 1500 students of 10th grade from 60 schools. Data were collected through School Climate Student Questionnaire

(SCSQ) developed by Dr. Georgia Pashiardis, Study Skills Inventory developed by Dennis H. Congos, and socio-economic status questionnaire. The achievement scores of students were collected from the result Gazette for the secondary schools' annual examination of concerned Boards of Intermediate and Secondary Education Punjab. Data were analyzed through descriptive and inferential statistics. Results showed that parents' socio economic status, school climate and study habits had impact on students' academic achievement. Gender and locale had impact on study habits of students. In the light of findings, it was inferred that the enhancement of school climate and development of good study habits may improve academic achievement of students⁴³.

A research work investigated parents' socio-economic status on secondary school students' academic achievement in Ekiti State. Descriptive research design of the survey type was adopted. The population for the study comprised all Junior Secondary School students in Ekiti State. The sample consisted of 960 students from 20 secondary schools randomly selected for the study. Purposive sampling was used to select 48 students from each school. The instruments used for the study is a self-designed questionnaire and inventory to collect students' results. Validity of the instrument was ascertained through face and content validity. Test-re-test and estimation of internal consistency methods of reliability were adopted for the questionnaire. Reliability coefficient of 0.69 and 0.71 was obtained. Four hypotheses were formulated and tested at 0.05 level of significance. The data were analysed using Regression statistical tools. It was confirmed in the study that there was relationship between parents' socio-economic status and academic achievement of secondary school students. It is therefore recommended that parents without or with low education should endeavour to send their children to home lessons after school hours, by weekends, and during holidays to improve their academic performance. Government should

embark on programmes or formulate policies that can bridge the gaps between children of the rich and the poor academically⁴⁴.

2.3.2.2 Parents' Level of Education and Students' Academic Achievement

In a study on the impact of parents' background on their children's educational achievement, with one of the objectives of the study focusing on the influence of parental education on the academic achievement of their children. Using the correlation research design approach, the researcher used a population of 4752 respondents. With a sample size of 1,426 senior secondary school students which were chosen by random sampling, alongside structured questionnaire titled "Students Parental Background" Variable Inventory were used to collect data from the respondents. He used four research questions and four hypotheses which he adopted for his test. His study was face validated. As he puts it, two experts in educational measurement from the University of Science and Technology, Port Harcourt validated the study. The study employed the Pearson Product Moment Correlation to determine the extent of significant relationship that existed between the independent and dependent variables at 0.05 alpha levels and also to analyze the data and reliability of the instrument. His result showed a positive relationship between the two variables. In other words, there was a positive relationship between parents' educational background and the achievement of their children at school.

In another work titled "How does family background affect children's educational achievement? Evidence from Contemporary China"⁴⁵. The researcher proposed three major research hypotheses, namely,

- 1) “Family socio-economic status has an important impact on the quality of the educational opportunities that children have access to. The higher the family’s socioeconomic status, the higher the qualities of children’s educational opportunities attend.”
- 2) “Parental education participation and the quality of children’s educational opportunities affect children’s learning attitude and behaviour.”
- 3) “Parental participation in children’s education and the quality of children’s educational opportunities affect their academic achievement.”

Parental educational level refers to the highest educational attainment of parents. It may range from the high school to professional. Parents’ levels of education have been regarded as predictors of children’s academic achievement. Parents’ level of education is part of a larger constellation of psychological and sociological variables influencing children’s school outcomes. Level of education influences parents’ knowledge, beliefs, values, and goals regarding childrearing, so that a variety of parental behaviours are indirectly related to children’s school performance. Students whose parents have higher levels of education may have an enhanced regard for learning, more positive ability beliefs, a stronger work orientation, and more effective learning strategies than the children of parents with lower levels of education.

Parental educational level is the characteristic that may affect the parental involvement in an individual’s academics, when a parent is not educated, it influences the ability or willingness for that parent to involve him or herself in child’s learning. Parental educational level is known as a factor positively related to children's academic²⁸. The family is the main factor influencing the lives and outcomes of students²⁷. The educational level of parents is a powerful factor

influencing children's academic success. It has been established that generally, the educational level of parents is greatly connected to the educational attainment of their children²⁸. Parents play an immense and significant role in the academic achievement of their children. Educated parents would have increased emphasis on educational excellence. Educated parents are equipped by virtue of their education to take cognizance of the fact that parent- student-school-community relationship is important in order to promote educational attainment and academic achievement of their children and so they make the partnership a priority.

Education plays an essential role in the acquisition of knowledge and skills. It is a tool which can be used to train the future generations to inculcate skills and competence. The way a child is raised has an adverse impact not only to oneself but to the whole society. While growing up, the kid invests the vast majority of his energy at home and the kind of condition the person in question is raised in likewise hampers their intellectual turn of events. The inspiration of any smart kid towards learning is being quickened by the positive impacts of their condition while other people who need inspiration are contrarily influenced. Guardians are the primary instructors of their children. Children who perceived their parents as loving, accepting, encouraging and less controlling' behavioural and psychological less hostile perform better in school and feel more competent. When the parental involvement in educational process is high; students get higher grades, graduation rates are high, better school attendance is realized, increased student motivation to self-driven academic orientation is realized⁴⁶. Taught guardians ingrain additionally shrewdness to their children instruction has a critical factor for a kid's future. The offspring of taught Parents are more certain, creative and experienced than the youngsters whose guardians are not instructed.

Children whose parents are highly educated do well in their academics than those with less educated parents. Academic achievement is essential to get promoted to the next level in school and the turning point of the lives of the students is when they got into secondary level of schooling from that stage in order to have a secured life by getting enrolled in tertiary education. In a research on parent's educational level on their children's academic performance, discovered that when parents support students 'academics, there will be positive academic performance²⁸. In a paper named "Impact of parent's instructive foundation and study offices on scholarly execution among optional school understudies noticed that parental instructive level or achievement" has been seen as altogether identified with the instructive fulfilment of their youngsters in both country and national examples. The kids from taught homes will in general have higher yearnings and higher instructive plans than their partners.

Children from parents with higher educational level tend to do better than the children from less advantaged group. Children in turn are then disadvantaged when their parents have a lower education as well. Purport that parental education level affects parenting style which in turn, affect children's academic success. They added that families with higher educational levels are likely to be more permissive and less strict in parenting. Parental education shows a strong correlation to students' academic achievement. Parent's educational attainment links positively to children's academic performance. Mothers who have a predisposition to information about school are more likely than less educated mothers to discuss their child's performance. Well educated mothers' expectations levels are higher, and they have more demands of academic achievement for their children. Parents who have college degree tend to have higher income and higher educational attainment and their children attend selective colleges more frequently than their first-generation college peers. Parental educational attainment has long term influence on

their children's educational attainment. The influence of parental education has an impact on the collage experience of their children.

Parents who have higher degree tend to have higher income and their children do have the privilege to attend good schools. Educated mothers are more likely to adopt parental investment strategies designed to maximize the life chances of the students such as their probability of survival, health and economic success. They are also concerned and knowledgeable about obtaining educational credentials for her children by supervising their school attendance, changing them to better school if the former is not favourable. They also provide lesson teacher when necessary. Educated mothers will provide her child with more useful forms of instruction self-perception, encouragement, interaction and exposure, thus transmitting skills and shaping his or her psychological development in distinctive ways. In a paper titled "The relationship between parental education and children's academic performance" found out that children with educated parents are being supportive by their parents in their academics while children lacking educated parents tend not to do well in academics⁴⁶.

Also, a work titled the "impact of parent's background on their children's education" found out that parents have a huge role on their children's education since they are their children's first teachers⁴⁷. Children's brains are like sponge and absorb in everything surrounding them in the early years of development. Parents with educational background find it easy when preparing their children for school than parents without educational background. When a student is exposed to a learning environment in the home, the better his/her academic achievement will be.

Parents that are educated help their children to study hard. They help their children to arrange time table for studies and provide a place or make a space for learning, they answer questions

that are not clear for children during study. A research was carried out on the effect of parental inclusion on understudies' exhibition and discovered that the scholastic execution of understudies relies on the association of guardians in their youngsters' scholarly exercises to achieve the more elevated level of value in scholastic achievement⁴⁸. When guardians truly include themselves in their kids' schoolwork, empower support in extracurricular exercises, assist children with creating plans for their future, kids are bound to react and do well in school. They likewise share that family association which improves part of youngsters' instruction, for example, day by day fulfilment, understudy accomplishment, conduct and inspiration.

2.3.2.3 Family Size and Students' Academic Achievement

A study was designed to ascertain the relationship between family size, family type and scholastic success of Social Studies students in Cross River State. To achieve the purpose of this study, two null hypotheses were formulated to be tested at .05 confidence level. An Ex-post facto design was adopted for the study. One thousand (1000) Social Studies students were selected for the study through proportionate stratified random sampling and simple random sampling techniques from a population of 19,169 junior secondary three students. Family type was categorized into two (monogamous and polygamous) while Family size was categorized into three (large, medium and small).

The only instrument for the study was the Social Studies Academic Achievement Test (SOSAAT). The SOSAAT was paired with the categorized variables for data collection and trial tested using the split-half reliability estimate to establish reliability indexes of 0,78 and 0.82 while the reliability coefficient for achievement test was 0.79 respectively. The reliability test was conducted in one of the schools within the study population but not among the sampled

schools for the main study. The data collected were duly coded and analyzed in consistent with the formulated hypotheses using the Analysis of Variance (ANOVA) test-statistics. The results revealed that students' family size and family type are significantly related to students' scholastic success in Social Studies. Based on these findings it was concluded that students' scholastic success is dependent on family size and family type.

The work recommended, inter alia, that since small size family has greater positive influence on scholastic success of students in Social Studies, parents should maintain small size families they can adequately nurture and positively impact on. Moreover, parents should endeavour to live together and maintain intact homes so that they can give children the warmth, nurture and encouragement to contribute to the development of the required academic excellence⁴⁸.

Another study conducted on the influence of family size on the academic achievement of secondary school students as perceived by teachers and parents. The study had four objectives, four research questions and four null hypotheses. The population of the study comprised of 3,128 and a sample size of 486 SS 2 students. Ex-post facto design was used for the study. Data was collected using a structured questionnaire and students' results were obtained from the school's examination offices. Percentages, mean and standard deviation were used to answer the research questions. Regression analysis was used to test null hypotheses 1 and 2 while t-test statistic was used to test null hypotheses 3 and 4 all at 0.05 level of significance.

The study findings showed that family size significantly influenced the achievement of secondary school students in Cross river state, Nigeria ($0.05 > 0.000$). On the basis of the findings, the researcher concluded that small family size and provision of learning materials by parents improved secondary school students' achievement in Cross river state, Nigeria. It was

recommended that students from large families need support by teachers, private individuals and members of the community in order to improve their performance. Parents should also support and give special attention to their children through organizing extra lessons and provision of learning materials¹⁶.

A study focused on the influence of family structure on academic achievement in the Kwabre East Municipal Area. This study is guided by three objectives, namely to determine the families' roles in the academic achievement of senior high school students, to identify the challenges to the adequate achievement of families' roles in the academic achievement of senior high school students and to investigate the influence of family structure on academic achievement of senior high school students in the Kwabre East Municipal Area. This study is a cross-sectional study where data were collected from 363 students in the Kwabre East Municipal. The data collection instrument was a structured questionnaire. The data collected were analyzed descriptively and quantitatively. The majority of the respondents disagreed that parents give school authorities health information about wards and academic histories. The parent does not support their wards in-home learning. Parents, however, support ICT learning in the schools and attend school programs such as an anniversary. Financial hardship was a significant challenge for the effective involvement of parents in the academic achievement of students. There is a significant strong positive correlation between parental roles in education and students' academic achievement. Parents should be made aware and encouraged to provide vital information, such as their wards' health information and academic history to school authorities. Parents should be made aware and encouraged to ensure their wards do their assignments. Parents should be encouraged to provide their children with required learning materials¹⁷.

A research shows that the environment of a large family constitutes a handicap to the verbal development, consequently to general mental development. He explains that since the amount of verbal communication with adults is limited in a large family, children from such families are backward in language development. Moreover, that there is a strong evidence that a child who is equipped verbally is bound to score highly on intelligence test. Similarly, it was discovered that the size of a family could predict how students fare or perform in school.

Another study shows that family size plays a critical role in academic learning and achievement for students at all levels of study. Students who perform well in school are better able to make a transition to adulthood, achieve career and economic success and make a positive contribution to society. There is a paucity of research on the relationship between family size and high school student academic performance. As a result, the study investigates the influence of family size characteristics on the academic achievement of Ghanaian high school students. The social survey technique was used in a quantitative approach. Using a simple random sampling technique, a structured questionnaire was used to collect data from a sample of 327 students. However, 262 sets of questionnaires were obtained from the respondents for review. For the data analysis, descriptive statistics and inferential statistics were used. The findings indicated that family size characteristics have an influence on high school students' academic performance. A small family influences academic achievement more than a large family. The findings demonstrate the importance of family size in determining educational quality and perceived influence on academic performance. Furthermore, the findings revealed that a small family's basic needs are met with a smaller portion of the family's income than a large family's basic needs. Therefore, it is recommended that families consider family size and academic achievement of their children when deciding on the number of children to have¹⁹.

2.3.3 Effect of Gender on Students' Academic Achievement in Agricultural science

A study on gender as an intervening variable in comparing effectiveness of teaching methods on the interest of early childhood agricultural science pupils sampled 58 Basic 3 pupils comprising 31 males and 27 females from intact class. The two classes were randomly assigned experimental group I and II. The experimental group one was taught with blended learning method while experimental group II were taught with role play method. The treatment lasted for four weeks. The instruments used for data collection were validated by three experts all from Department of Agricultural Education. The study findings revealed that gender plays an intervening role in the interest of pupils in agricultural science when taught with blended learning and role play method as female pupils had higher interest in comparison to their male counterparts⁵².

Another study seeks to empirically verify the existence or otherwise of gender inequality in the agricultural science achievement of urban and rural, male and female students in Ogbomoso North Local Government area of Oyo State, Nigeria; and whether parental socio-economic status and school location, taken independently, are significant factors in the achievement of the students. By simple random sampling, 240 students (50% males, 50% females) were selected from three schools each in urban and rural settings of the secondary schools and a 30-item four option multiple choices agricultural science achievement test (ASAT) was constructed and administered. The findings indicated that gender, schools location and socio-economic status have effects on students' achievement in agricultural science as a subject. A major implication of this study is that collective efforts of the governments and other educational stakeholders should be put in place⁵³.

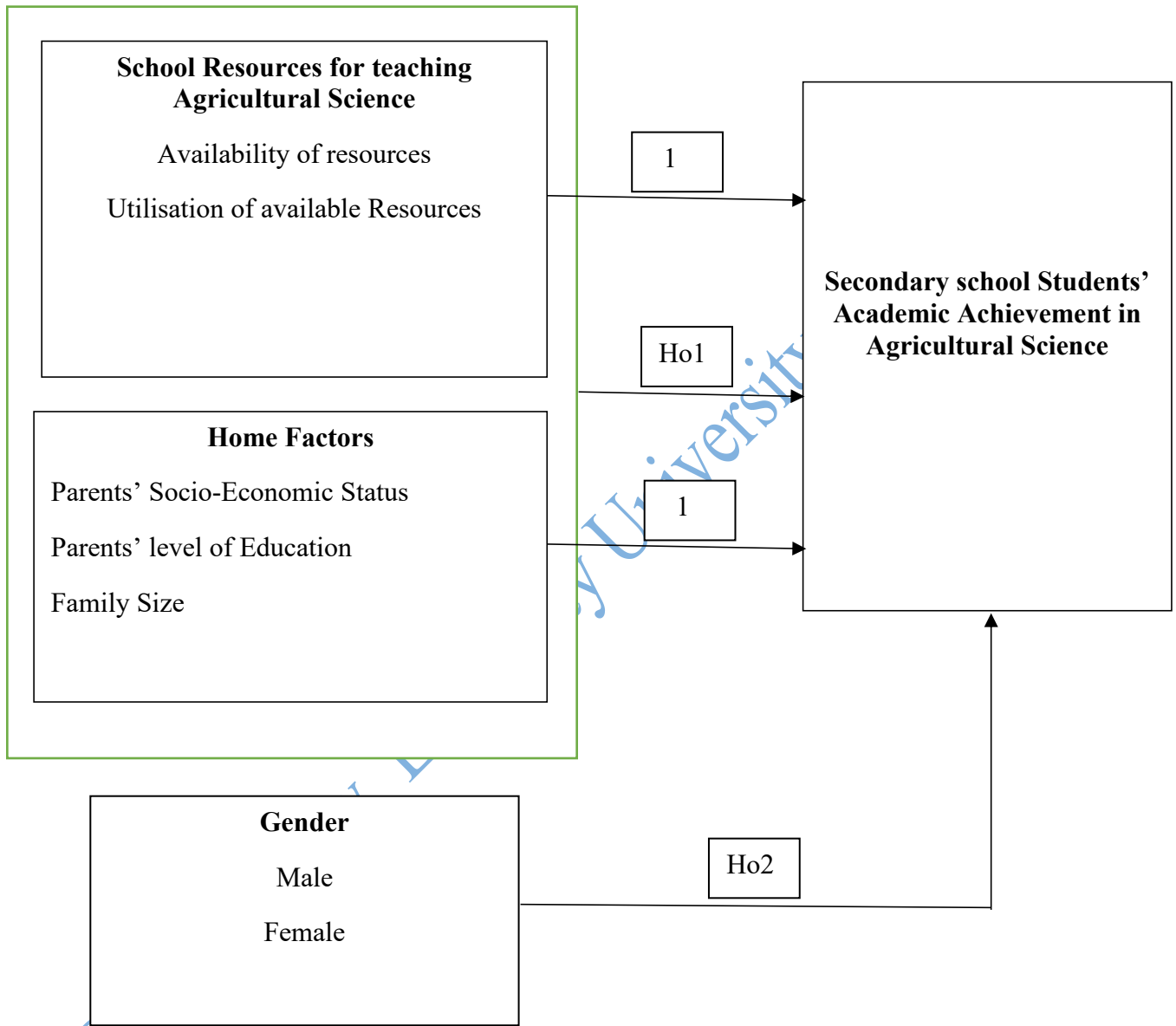
Another study examined the effect of gender on social studies students' academic achievement in secondary school⁵⁴. The study adopted a quasi-experimental design of pre-test and post-test non-equivalent control design. Four research questions and four hypotheses were formulated to guide the study. Three research questions and three hypotheses were formulated to guide the study. Population of the study comprised of all the JSS 2 students in Enugu Education Zone of Enugu State, Nigeria. Two intact classes of seventy-two (72) JSS 2 students (30 males and 42 females) were randomly selected from public secondary schools for the study State Nigeria. The selected classes were randomly assigned to experimental and control groups. A 25-item Basic Science Achievement Test (BSAT) was designed by the researchers and used for data collection. Result revealed that gender (male/female) had no significant effect on students' achievement in Basic Science and finally, result showed that there was significant interaction effect of treatment and gender on students' academic achievement in Basic Science.

2.4 Conceptual Model

The conceptual framework for this study shows the relationship among the independent variables (school resources and home factors), the dependent variable (academic achievement in agricultural science) and moderating variable (gender). The conceptual model is represented in the figure 2.1:

Independent Variables

Dependent variable



Source: The Researcher, 2023

Figure 2.1: Conceptual Framework

Figure 2.1 illustrates the conceptual model for the study. The conceptual framework for this study shows the relationship between the independent, moderating and dependent variables. The independent variables are school resources and home factors. The moderating variable is gender while the dependent variable is students' academic achievement (in Agricultural Science). School resources were treated in terms of its availability and utilisation while the second independent variable for the study which is home factor was in the three dimensions of parents' socio-economic status, parents' level of education and family size. The dependent variable for the study which is academic achievement was treated by measuring the students' achievement in Agricultural Science achievement test. A moderating variable – gender was considered in this study since it has the potential to interfere with the result of the study.

2.5 Summary of Gap in Literature Reviewed

The literatures reviewed for this study was divided into three sections: conceptual framework, theoretical framework, and empirical investigations. Concepts such as school resources (availability and utilization) home factors (parents' level of education, parents' socio-economic status and family size) were examined using the conceptual framework. Home has been regarded as the most intimate, personal, and tiny social gathering. It is the most significant main group and the smallest social unit in society, and it is often founded on the marriage of one or more sexually cohabiting couples, with the expectation of producing children for whom the adults of the family assume responsibility. The term "home backdrop" refers to all of the things, forces, and situations in the child's environment that impact him or her physically, mentally, and emotionally.

On the other hand, school resources comprise all the needed facilities that should be in the school to aid the learning process. School resources include the school farm, the school laboratory, farm equipment etc. Education is defined as the sum of all formal and informal experiences that a person encounters on his or her path through life. It is also considered as the transfer of what is valuable to individuals in order for them to become knowledgeable and contributing members of society. Achievement is defined as anything completed successfully, the result of an effort or sequence of attempts that is typically positive but in most cases challenging. It is defined as something achieved effectively, particularly by labour, skill, practice, or perseverance. The ability or power of people or things to exert a compelling force on or generate effects on the actions, behaviour, or opinions of others is referred to as influence. Experiential Learning Theory and the McClelland's Achievement Motivation Theory were used as the theoretical frameworks. Achievement Motivation Theory seeks to explain and predict behaviour and performance, based on individual's demand for performance, power, and affiliation while on the other hand is based on the fact that a person's behaviours determined by the behavioural intention to perform it³³.

Finally, while some empirical studies revealed that school resources and family environment had an impact on children' academic success, a key concern that emerged from the literature was the general lack of such research studies in Nigeria, particularly in the study region (Oyo State). The majority of accessible research investigations were undertaken in Western nations. As a result, the study must be conducted in the Nigerian context. The study was driven by the need to fill this void.

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Chapter Three

Methodology

This chapter describes the methodology (procedures) that was used in the study. The chapter was organised using the following sub-heading: research design; population of the study; sample and sampling techniques; instrument for data collection; validity of the instrument; reliability of the instrument; method of data collection and method of data analysis.

3.1 Research Design

A descriptive survey research design was adopted for this study. A descriptive survey research design is a type of research design that aims at collecting data, describing data in a systematic manner and stating the characteristics or a phenomenon, situation, or population¹. This research design is considered appropriate because the aim of the study is to collect data and draw conclusion on the influence of availability and utilization of school resources and home factors on academic achievement in Agricultural science from the respondents.

3.2 Population of the Study

The study's target population comprised all Senior Secondary School Two (SSS2) students enrolled in public senior secondary schools offering Agricultural Science within Ibadan Metropolis, Oyo State, Nigeria. As of the period when this study was conducted, there were a total of 336 public senior secondary schools, and 48,211 students offering Agricultural Science across the eleven Local Government Areas (LGAs) within the metropolis.

Table 3.1. Total number of Public Secondary Schools in Ibadan Metropolis

S/N	Name of Local Government	Total number of Public Secondary Schools	Number of SS2 Students
1	Akinyele	36	4,799
2	Egbeda	30	5,143
3	Ibadan North	42	7,545
4	Ibadan Northeast	35	4,862
5	Ibadan Northwest	13	7,171
6	Ibadan Southeast	36	2,390
7	Ibadan Southwest	30	5,999
8	Ido	26	2,553
9	Lagelu	26	2,777
10	Oluyole	29	5,436
11	Ona-Ara	33	6,707
		336	48,211

Source: Oyo State Post Primary schools teaching service commission 2022

Researcher Field 2023

3.3 Sample and Sampling Techniques

A multi-stage sampling procedure was adopted to select the sample for the study. This involves intact class of the selected school. At the first stage, Ibadan was stratified into two based on existing geographical structure that is urban and semi-urban.

Table 3.2 Population Distribution of the Study Located in Urban Areas

S/N	LGA	Number of Schools	Number of SS2 Students
1	Ibadan North	42	580
2	Ibadan North East	35	374
3	Ibadan North West	30	461
4	Ibadan South East	36	184
5	Ibadan Southwest	30	196
	Total	173	1,795

Source Field study 2023

Table 3.3 Population Distribution of the Study Located in Semi-urban Areas

S/N	LGA	Number of Schools	Number of SS2 Students
1	Akinyele	36	369
2	Egbeda	30	395
3	Ido	26	196
4	Lagelu	26	214
5	Oluyole	29	418
6	Ona Ara	33	516
		180	2,108

Source Field study 2023

At the second stage, the local government area with the highest number of students was selected in each of the strata. Table 3.4 present details of this

Table 3.4: Local Government selected

S/N	LGA	Location	Number of Schools	Number of Students
1	Ibadan North	Urban	42	580
2	Ona Ara	Semi Urban	33	516
	Total	02	75	1,096

Source; Field study 2023

Table 3.4 serves as a representation of the study's sample. It delineates the selection of two local government areas, namely Ibadan North and Ona-Ara, to act as representatives for the broader study area.

In the third stage, all one thousand and ninety-six students in Senior Secondary School Two (SSS2) from all seventy-five schools within the selected location participated in the study. The rationale for choosing S.S.S 2 students as sample was because they have been in agricultural science class in the senior secondary school for at about two years, which is supposed to give them insight into the questions addressed in this study. Also, as at the time of data collection for this study, the SSS 3 students were writing a major external examination, which restricted access to them.

3.4 Description of the Research Instruments

Two sets of instruments were used for this study. These are “Agricultural Science Achievement Test (ASAT)” and “Students’ Questionnaires on School Resources and Home Factors (SQSRHF)”

3.4.1 Agricultural science Achievement Test (ASAT)

ASAT was used to measure the students’ Academic Achievement in Agricultural Science. It is divided into two sections, that is sections A and B. Section A is on demographic data of the respondents. Such data include name of school, gender, age, family type, residential area and parents’ academic qualification.

Section B consists of 25 - item multiple choice questions (MCQ) with duration of 30 minutes². It will be administered on the twenty (20) students that will be used as sample for the study. The MCQ will be extracted from West African Examinations Council (WAEC) past questions with full consideration given to questions on senior secondary school 2 agricultural science scheme of work.

3.4.2. Students' Questionnaire on School Resources and Home Factors (SQSRHF)

The students' questionnaire on "school resources and home factors" is divided into three sections, A, B and C. Section A contains questions on the demographics of the students. The demographic questions are name of school, age, gender, family type, residential area and parents' academic qualification. Section B of the questionnaire is designed to elicit answers to RQs 1 and 2 on the availability and utilisation of resources for the teaching and learning of agricultural science. This section consists of twenty-two (22) adapted questions³. Eleven (11) of the questions are on availability of school resources while the remaining eleven (11) are on resource utilisation for the teaching and learning of agricultural science. The rating scale is based on a 4-point Likert scale. For Resource Availability, the scale is: Always available = 4, Available = 3, Rarely available = 2, Not Available = 1. And for Resource Utilisation, it will be : Very High Extent = 4; High Extent = 3; Low Extent = 2; Very Low Extent = 1.

Section C of the SQSRHF was designed to determine the influence of home factors (Parents' Socio Economic Status, Parents' Level of Education and Family size) on students' academic achievement. This section contains three scales of five adapted questions each⁴. The first scale consists of questions on Parents' Socio Economic Status, the second one is on Parents' Level of Education and the third scale is made up of questions on Family size⁵. In all, there are fifteen questions in section C. The rating scale for section C is also based on 4-point Likert scale of Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1.

3.5 Validity of Research Instrument

The researcher's supervisor and experts in data analysis and agricultural science education assisted in vetting the questionnaire, to critically examine and determine the suitability of the

items used in measuring the variables included in the study. They examined the items and made sure they were in line with the objectives of the study. The structure and language of the questionnaires were modified in the light of their corrections. All other suggestions, corrections, and ideas of the researcher's supervisor were incorporated into the final production of the research instrument.

3.6 Reliability of the Research Instrument

The assessment of instrument reliability, encompassing both the questionnaires and the achievement test, were conducted through the utilization of established statistical methods, namely Cronbach's Alpha and Kuder Richardson – twenty one (KR-21). To assess the initial trial testing of these instruments, a cohort of twenty-five (25) Agricultural Science Achievement Tests (ASAT) and twenty (20) Student Questionnaires were administered on Senior Secondary School Two (SSS2) students, who are not part of the selected sample for the primary study. Subsequently, the results of this trial testing were subjected to statistical analysis using the Cronbach Alpha coefficient. The computed coefficient yielded a value of $r = 0.85$, signifying a high degree of reliability in the instruments employed for data collection. This outcome attests to the instruments' ability to consistently measure the intended variables, thus bolstering the validity of the study's findings.

3.7 Data Collection

The researcher collected letter of introduction seeking permission to carry out a research exercise from her department at Lead City University and presented the letters to the principals/vice principals of each of the selected schools for the study. After the researcher has obtained the consent to proceed with the research activity from those school authorities, she and two research

assistants went ahead to carry out the research exercise. Before the commencement of the research activity, the respondents were informed about the aim of the study and they were assured of the confidentiality and anonymity of their identities and responses. The researcher also gave incentives in form of biros, biscuits and pencils to students who took part in the study.

3.8 Data Analysis

The collected data were analyzed with the use of both descriptive and inferential statistics. Descriptive statistics of frequency counts, percentages, mean and standard deviation were used to analyse responses on demographic characteristics and the three research questions while inferential statistics of Multiple Regression analysis and t-test were used to test the formulated hypotheses at 0.05 levels of significance.

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Endnotes

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Chapter Four

Results and Discussion of Findings

4.1 Questionnaire Return Rate

S/N		Frequency	Percentage
1	Distributed	1,096	100
2	Retrieved	994	90.6
3	Found Useful for Analysis	721	72.54

Source; Researcher's Field Work 2023

Table 4.1 presents data related to the response rate and the utility of a questionnaire. It consists of three key rows: Distributed: This row indicates that initially, 1,096 questionnaires were distributed to respondents as part of a survey or research project. This number represents the total pool of questionnaires sent out, serving as the baseline for further analysis. Retrieved: Out of the 1,096 questionnaires distributed, 994 were successfully retrieved. In other words, 994 respondents completed and returned their questionnaires. To express this as a percentage, we divide the number retrieved by the number distributed and multiply by 100, resulting in a retrieval rate of approximately 90.6%. This means that approximately 90.6% of the distributed questionnaires were returned and filled out. Among the 994 retrieved questionnaires, 721 were deemed suitable for inclusion in the analysis. This suggests that 721 respondents answered met the specific criteria set for the research, making them valuable for the study's objectives. Therefore, approximately 72.54% of the retrieved questionnaires were considered relevant and applicable for the research's analytical purposes.

4.2 Discussion on Demographic Characteristics of Respondents

Table 4.2: Gender of Respondents

	Frequency	Percent
Male	432	59.9
Female	289	40.1
Total	721	100.0

Source ; Researcher’s Field study 2023

The gender distribution of respondents is summarized in Table 4.2. A total of 721 students participated in the study. Among these respondents, 432 were male, constituting approximately 59.9% of the total sample. On the other hand, there were 289 female respondents, making up about 40.1% of the total sample. This data reveals that there were more male participants than female participants in the study, emphasizing the importance of considering gender-related factors when analyzing the influence of resources and home factors on academic achievement performance, as gender-based differences may play a role in the study's outcomes.

Table 4.3: Age of Students

	Frequency	Percent
13-15years	260	36.1
Above 15 years	461	63.9
Total	721	100.0

Source ; Field study 2023

Table 4.3 outlines the age distribution of the senior secondary school student respondents in the study. Among the respondents, 260 students fell within the age range of 13 to 15 years, constituting approximately 36.1% of the total sample. Conversely, a larger portion of the respondents, specifically 461 students, were above 15 years of age, making up about 63.9% of the total sample. These results indicate that the majority of the student participants in the study

were above the age of 15, while a smaller yet significant proportion fell within the age range of 13 to 15 years. This age distribution information is important to consider when assessing the potential impact of age on academic achievement performance, as different age groups may exhibit variations in their responses to resources and home factors.

Table 4.4 Family Type of Student

	Frequency	Percent
Monogamy	553	76.7
Polygamy	90	12.5
Single Parent	78	10.8
Total	721	100.0

Source; Field study 2023

Table 4.4 presents data on the family type of student respondents in the study. The result presented in the table showed that the majority of the students, precisely 553 individuals, come from monogamous family structures, which accounts for approximately 76.7% of the total sample. A smaller portion of the respondents, specifically 90 students, hail from polygamous family settings, constituting about 12.5% of the total sample. Additionally, 78 students belong to single-parent families, making up roughly 10.8% of the total sample. These findings shed light on the diversity of family types represented among the student participants. It is noteworthy that monogamous families make up the largest segment, followed by polygamous and single-parent families. The family type is a significant factor to consider when examining the influence of resources and home factors on academic achievement performance, as different family structures may have varying dynamics that can impact a student's educational experience and outcomes.

Table 4.5: Residential Place of Student

	Frequency	Percent
Urban	532	73.8
Rural	189	26.2
Total	721	100.0

Source; Field study 2023

Table 4.5 presents data regarding respondents residential area. It revealed that a significant majority of the students, specifically 532, reside in urban areas, constituting approximately 73.8% of the total sample. In contrast, a smaller portion of the respondents, precisely 189 students, live in rural areas making up roughly 26.2% of the total sample. These findings highlight the urban-rural distribution of the student participants in the study. The majority of students are from urban settings, while a smaller yet noteworthy portion came from rural areas. The residential place is an essential factor to consider when exploring the influence of resources and home factors on academic achievement performance, as urban and rural environments may offer distinct educational opportunities and challenges that can influence a student's academic outcomes.

Table 4.6: Parent's Academic Qualification

	Frequency	Percent
Never went to School	8	1.1
Primary Education	54	7.5
Secondary Education	481	66.7
Tertiary Education	178	24.7
Total	721	100.0

Source; Field study 2023

Table 4.6 provides information on the academic qualifications of the parents of student respondents in the study. A very small number of parents, specifically 8 individuals, never went to school, accounting for approximately 1.1% of the total sample. Some parents, specifically 54 individuals, completed primary education, making up about 7.5% of the total sample. The

majority of parents, 481 individuals, attained a secondary education level, constituting roughly 66.7% of the total sample. Additionally, 178 parents held tertiary education qualifications, representing approximately 24.7% of the total sample. These results provide insights into the educational backgrounds of the parents of the student participants. It is noteworthy that the highest proportion of parents completed secondary education, followed by those with tertiary education qualifications. The educational qualification of parents is a crucial factor to consider when analyzing the influence of resources and home factors on academic achievement performance, as parental education can significantly impact a student's educational opportunities and support.

4.2.1 Research Question One: What is the level of students' academic achievement in agricultural science in public senior secondary schools in Ibadan metropolis?

Table 4.7 Student Academic Achievement

Score	Frequency	Percent
Less Than 25	173	24.0
25-49	494	68.5
50-69	44	6.1
70-100	10	1.4
Total	721	100.0

Source; Researcher's Field Work, 2023

Decision Rule:

Scores less than 25 is very low, 25-49 is low, 50-69 is high, 70-100 is very high

The analysis of research findings of research question one on the level of students' academic achievement in agricultural science in public senior secondary schools in Ibadan metropolis paint a concerning picture. The data reveals that a significant portion of students are struggling in this subject. The majority of students, approximately 68.5%, fall into the "Low" academic

achievement category, scoring between 25 and 49. This indicates that a substantial proportion of students are not performing well in agricultural science, suggesting that improvements are needed in the teaching and learning processes. Furthermore, 24.0% of students scored below 25, classifying them in the "Very Low" academic achievement category. This is a troubling figure, indicating that a significant number of students are facing considerable challenges in grasping the concepts and skills associated with agricultural science. On the positive side, there are a few students who have achieved higher levels of academic success in agricultural science in the study area. Approximately 6.1% of students fall into the "High" category, scoring between 50 and 69. This demonstrates that there is potential for students to perform well in the subject, but this achievement level is still relatively limited. Also, a smaller percentage, around 1.4% of students fall into the "Very High" category, scoring between 70 and 100. While this is a positive sign, the number of students excelling at this level remains quite small. In all, the data suggests that the overall academic achievement in agricultural science among students in public senior secondary schools in Ibadan metropolis is a matter of concern. There is a significant prevalence of low to very low academic performance, with only a limited number of students achieving high or very high scores. Since a majority of students sampled fall in the low category, it can therefore be concluded that level of students' academic achievement in agricultural science in public senior secondary schools in Ibadan metropolis is low.

4.2.2 Research Question Two: What is the level of availability of relevant school resources in the teaching and learning of agricultural science in the sampled schools?

Table: 4.8: Level Availability of School Resources for Academic Achievement in Agricultural Science

S/N	Items	Always Available 4	Available 3	Rarely Available 2	Not Available 1	Mean	Std
1	Functional school farm for practical lessons	180 (25.0%)	160 (22.2%)	116 (16.1%)	265 (36.8%)	2.35	1.210
2	Field trips to local farms and agro-based industries	76 (10.5%)	124 (17.2%)	168 (23.3%)	353 (49.0%)	1.89	1.036
3	School library	322 (44.7%)	171 (23.7%)	25 (3.5%)	203 (28.2%)	2.85	1.260
4	Agricultural laboratory	142 (19.7%)	172 (23.9%)	114 (15.8%)	293 (40.6%)	2.23	1.176
5	Functional Farm machines and equipment	96 (13.3%)	112 (15.5%)	132 (18.3%)	381 (52.8%)	1.89	1.098
6	Specimens of agricultural produce	170 (23.6%)	258 (35.8%)	101 (14.0%)	192 (26.6%)	2.56	1.119
7	Simple farm tools (e.g. watering can, Knapsack Sprayer)	252 (35.0%)	220 (30.5%)	70 (9.7%)	179 (24.8%)	2.76	1.176
8	Agricultural charts	132 (18.3%)	188 (26.1%)	156 (21.6%)	245 (34.0%)	2.29	1.119
9	Farm Manager	90 (12.5%)	120 (16.6%)	126 (17.5%)	385 (53.4%)	1.88	1.090
10	Agricultural Activities Record book	190 (26.4%)	230 (31.9%)	118 (16.4%)	183 (25.4%)	2.59	1.130
11	Current and relevant Agricultural textbooks	372 (51.6%)	200 (27.7%)	57 (7.9%)	92 (12.8%)	3.18	1.036
Weighted Mean						2.41	1.132

Source: Researcher's Field Work survey, 2023

Criterion Mean = 2.50

*****Threshold:** mean value of 1.0-1.99 = Very Low Level; 2.00-2.49 = Low Level; 2.50-2.99 = High Level; 3.0- 4.00 = Very High Level

The table provided offers insights into the availability of various school resources for the teaching and learning of agricultural science in public senior secondary schools located in Ibadan metropolis. This data serves to address the research question at hand: "What is the level of students' academic achievement in agricultural science?" Each item in the table is evaluated based on the frequency of its presence within the schools, categorized as "Always Available," "Rarely Available," "Not Available," and presented with Mean and Std (standard deviation) scores. The Mean score reflects the average availability of each resource across the surveyed schools. The table concludes with a Weighted Mean, which provides an overall average availability score for all the listed resources.

Additionally, there is a Criterion Mean, which acts as a threshold for interpreting the level of availability. In this context, the thresholds are defined as follows: Mean value of 1.0-1.99 corresponds to a "Very Low Level." Mean value of 2.00-2.49 indicates a "Low Level." Mean value of 2.50-2.99 suggests a "High Level." Mean value of 3.0-4.00 represents a "Very High Level." Interpreting the availability of school resources based on these thresholds, the findings are as follows:

A functional school farm for practical lessons, with a mean score of 2.35, falls into the "Low Level" category. Field trips to local farms and agro-based industries, with a mean score of 1.89, are classified as "Very Low Level." School libraries, with a mean score of 2.85, are categorized as "High Level." Agricultural laboratories, with a mean score of 2.23, are placed in the "Low Level" category. Availability of functional farm machines and equipment, with a mean score of 1.89, falls into the "Very Low Level" category. Specimens of agricultural produce, with a mean score of 2.56, are classified as "High Level." Simple farm tools (e.g., watering cans, Knapsack Sprayers), with a mean score of 2.76, are also in the "High Level" category. Agricultural charts,

with a mean score of 2.29, fall into the "Low Level" category. The presence of a Farm Manager, with a mean score of 1.88, is classified as "Very Low Level" Agricultural Activities Record books, with a mean score of 2.59, are placed in the "High Level" category. Availability of current and relevant Agricultural textbooks, with a mean score of 3.18, falls into the "Very High Level" category. Given that the weighted mean is 2.41, it falls within the "Low Level" category. This means that, on average, the availability of school resources for teaching and learning agricultural science in the surveyed public senior secondary schools in Ibadan metropolis is considered to be at a low level.

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4.2.3 Research Question Three: What is the extent of utilization of available school resources in the teaching and learning of agricultural science in the sampled schools?

Table 4.9: Extent of Utilisation of Available School Resources on Academic Achievement in Agricultural Science

S/N	Items	Very High Extent 4	High Extent 3	Low Extent 2	Very Low Extent 1	Mean	Std
	Functional school farm for practical lessons	160 (22.2%)	128 (17.8%)	188 (26.1%)	245 (34.0%)	1.62	1.010
	Field trips to local farms and agro-based industries	86 (11.9%)	136 (18.9%)	202 (28.0%)	297 (41.2%)	1.46	.499
	School library	292 (40.5%)	190 (26.4%)	90 (12.5%)	149 (20.7%)	2.39	1.080
	Agricultural laboratory	138 (19.1%)	190 (26.4%)	150 (20.8%)	243 (33.7%)	2.08	1.331
	Functional Farm machines and equipment	102 (14.1%)	128 (17.8%)	208 (28.8%)	283 (39.3%)	1.39	.630
	Specimens of agricultural produce	136 (18.9%)	266 (36.9%)	145 (20.1%)	174 (24.1%)	2.47	.933
	Simple farm tools (e.g. watering can, Knapsack Sprayer)	242 (33.6%)	231 (32.0%)	94 (13.0%)	154 (21.4%)	2.77	.893
	Agricultural charts	126 (17.5%)	204 (28.3%)	170 (23.6%)	221 (30.7%)	2.62	.839
	Farm Manager	94 (13.0%)	138 (19.1%)	198 (27.5%)	291 (40.4%)	1.54	.938
	Agricultural Activities Record book	228 (31.6%)	240 (33.3%)	87 (12.1%)	166 (23.0%)	2.31	1.069
	Current and relevant Agricultural textbooks	420 (58.3%)	129 (17.9%)	85 (11.8%)	87 (12.1%)	3.23	.577
	Weighted Mean					2.17	0.891

Source: Researcher Fieldwork survey, 2023

Criterion Mean = 2.50

*****Threshold:** mean value of 1.0-1.99 = Very Low Level; 2.00-2.49 = Low Level; 2.50-2.99 = High Level; 3.0- 4.00 = Very High Level

The table provided offers insights into the extent of utilization of available school resources in the teaching and learning of agricultural science in the sampled schools. This data helps assess how effectively these resources are being used for educational purposes. Each item in the table is assessed based on the extent of utilization, categorized as "Very High Extent" "High Extent," "Low Extent," and "Very Low Extent." The Mean and Std (standard deviation) columns present the calculated mean scores, representing the average extent of utilization of each resource across the surveyed schools. The table concludes with a Weighted Mean, which provides an overall average extent of utilization for all the listed resources. Additionally, there is a Criterion Mean, which serves as a threshold for interpreting the level of utilization, as defined below: Mean value of 1.0-1.99 = Very Low Extent Mean value of 2.00-2.49 = Low Extent Mean value of 2.50-2.99 = High Extent Mean value of 3.0-4.00 = Very High Extent Interpreting the extent of utilization of school resources based on these thresholds:

Functional school farm for practical lessons: The mean score is 1.62, indicating a "Very Low Extent" of utilization. Field trips to local farms and agro-based industries: The mean score is 1.46, also suggesting a "Very Low Extent" of utilization. School library: The mean score is 2.39, falling into the "Low Extent" category. Agricultural laboratory: The mean score is 2.08, also categorized as "Low Extent" of utilization. Functional Farm machines and equipment: The mean score is 1.39, indicating a "Very Low Extent" of utilization. Specimens of agricultural produce: The mean score is 2.47, suggesting a "Low Extent" of utilization. Simple farm tools: The mean score is 2.77, categorizing it as "High Extent" of utilization. Agricultural charts: The mean score is 2.62, also falling into the "High Extent" category. Farm Manager: The mean score is 1.54, indicating a "Very Low Extent" of utilization. Agricultural Activities Record book: The mean

score is 2.31, suggesting a "Low Extent" of utilization. Current and relevant Agricultural textbooks: The mean score is 3.23, categorizing it as "Very High Extent" of utilization.

In all, the weighted mean, which represents the overall extent of utilization of available school resources for teaching and learning agricultural science in the sampled schools, is calculated to be 2.17. This falls within the "Low Extent" category according to the provided thresholds. The finding suggests that, on average, the school resources available for teaching and learning agricultural science are being utilized to a relatively low extent in the sampled schools. While there are a few resources that are being well-utilized (rated at a high extent), the majority of resources are either underutilized (rated at a very low extent) or have a low extent of utilization. This indicates a potential gap between the availability of resources, as indicated in the previous table, and their effective utilization for educational purposes. To enhance the quality of agricultural science education in these schools, there is a need for strategies and interventions that promote the more effective and comprehensive utilization of available resources. Efforts to increase the extent of resource utilization could positively impact students' learning experiences and academic achievement in agricultural science.

Hypotheses

H₀₁: There will be no significant combined influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.

Table 4.10 Model Summary of Combined Influence of School Resources (availability and utilisation) and Home Factors (parents' socio-economic status, parents' level of education and family size) on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.779 ^a	.606	.604	.298

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	53.218	2	26.609	298.899	.000
	Residual	34.541	388	.089		
	Total	87.760	390			

a. Dependent Variable: Student Academic Achievement

b. Predictors: (Constant), Home Factors, School Resources

The Model Summary table provides valuable insights into the relative influence of two sets of predictors, namely School Resources (availability and utilization) and Home Factors (parents' socio-economic status, parents' level of education, and family size), on the Academic Achievement of Secondary School Students in Agricultural Science within Ibadan metropolis.

Let's delve into the interpretation, hypothesis assessment, and a discussion of the findings. The coefficient of determination (R^2) is 0.606, signifying that approximately 60.6% of the variability in student academic achievement can be explained by the combination of School Resources and Home Factors. The Adjusted R Square is 0.604, which closely aligns with R^2 , indicating a robust

fit for the model. The Std. Error of the Estimate is 0.298, representing the average error in predicting student academic achievement. A lower value suggests greater prediction accuracy.

The ANOVA table reveals that the p-value associated with the Regression model is 0.000, which is less than the conventional significance level of 0.05. This outcome signifies that the model, encompassing both School Resources and Home Factors, is statistically significant in explaining student academic achievement, therefore, the hypothesis was rejected at 0.05 level of significance.

The model, which encompasses both School Resources and Home Factors, serves as a robust predictor of student academic achievement in Agricultural Science. It explains a substantial portion (around 60.6%) of the variation in academic achievement. The ANOVA table highlights that both School Resources and Home Factors, when considered collectively, wield a significant influence on student academic achievement. It is evident that schools should not only ensure the availability of resources for teaching and learning Agricultural Science but also focus on their effective utilization. This dual approach can have a positive impact on students' academic outcomes. The study equally underscores the importance of accounting for home factors, including parents' socio-economic status, level of education, and family size, in comprehending student academic achievement. These factors exert a substantial influence on students' educational experiences and outcomes.

In all, the findings emphasize that both School Resources and Home Factors are pivotal contributors to student academic achievement in Agricultural Science. The statistical analysis lends strong support to the hypothesis that these factors wield significant influence. Consequently, schools and policymakers should contemplate strategies to enhance both the

availability and utilization of resources, all while addressing home factors. This comprehensive approach can lead to improved educational outcomes for students in Ibadan metropolis.

H₀₂: There will be no significant relative influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis.

Table 4.11: Model Summary of Relative Influence of School Resources and Home Factors on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	3.378	.073		46.114	.000
	SCHRES	.003	.001	.205	4.088	.000
	Home Factors	.029	.002	.610	12.186	.000

Dependent Variable: Student Academic Achievement

**School Resources (SCHRES) and Home Factors

Table 4.11 summarizes a statistical model designed to examine the relative influence of two key sets of variables, namely "School Resources" and "Home Factors," on the academic achievement of secondary school students in Agricultural Science within the Ibadan metropolis. The primary objective of this analysis is to test the null hypothesis (H₀₂), which posits that there will be no significant relative influence of these variables on students' academic achievement.

In this analysis, the dependent variable is "Student Academic Achievement," which serves as the focal point for understanding how it is influenced by the independent variables – "School Resources" and "Home Factors relatively."

School Resources (SCHRES): This variable represents the resources available within schools. The unstandardized coefficient (B) for School Resources is 0.003, and the standardized coefficient (Beta) is 0.205. This indicates that for every one-unit increase in school resources, there is a 0.205 increase in student academic achievement. The associated t-statistic (4.088) is used to assess the statistical significance of this relationship, and the p-value (Sig.) of 0.000 demonstrates a highly significant influence.

Home Factors: This variable represents a combination of factors related to students' home environments. The unstandardized coefficient (B) for Home Factors is 0.029, with a substantial standardized coefficient (Beta) of 0.610. This suggests that for every one-unit increase in home factors, there is a 0.610 increase in student academic achievement. The t-statistic (12.186) and its associated p-value (Sig.) of 0.000 indicate an exceptionally strong and statistically significant influence.

Furthermore, the constant term in the model is 3.378, representing the expected value of student academic achievement when all independent variables are set to zero. Both the School Resources and Home Factors variables are shown to have a statistically significant influence on the academic achievement of secondary school students in Agricultural Science within Ibadan metropolis. Importantly, the standardized coefficients (Beta) suggest that Home Factors exert a more substantial influence (0.610) compared to School Resources (0.205) on academic achievement. In conclusion, based on the findings presented in this table, it is evident that both School Resources and Home Factors play significant roles in shaping the academic achievement of secondary school students in Agricultural Science in Ibadan metropolis, with Home Factors exerting the higher influence.

Table 4.12: Model Summary of The Relative Influence of School Resources (Availability and Utilisation) and Home Factors (Parents' Socio-Economic Status, Parents' Level of Education and Family Size) on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan Metropolis.

	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients		
(Constant)	.514	.200		2.577	.010
ASR	.041	.007	.974	5.756	.000
UASR	.032	.009	.736	3.427	.001
PSS	.057	.027	.338	2.127	.034
PLE	.195	.021	1.230	9.478	.000
FAMSIZE	.073	.015	.667	4.928	.000

Dependent Variable: Student Academic Achievement

Note:

- ASR - Student availability of school resources
- SUASR- Utilisation of Available School resources for teaching and learning of agricultural n science
- PSS- parents socio-economic status
- PLE- Parents' level of education
- Famsize- Family size

Table 4.12 show the results of a statistical model examining the relative influence of various factors on the academic achievement of secondary school students in Agricultural Science in the Ibadan Metropolis. The factors being analyzed include school resources (both their availability and utilization) and home factors (such as parents' socio-economic status, parents' level of education, and family size). To interpret the results and rank the relative influence, the researcher analyse the standardized coefficients (Beta values) and the associated significance levels (Sig.). These values give an idea of how strongly each variable is associated with the dependent variable (Student Academic Achievement). The standardized coefficients help in understanding

the relative importance of each factor, while the significance levels help us understand whether these relationships are statistically significant.

Availability of school resources (ASR) have the highest standardized coefficient (Beta = 0.974), indicating a strong positive influence on academic achievement. This is further supported by a highly significant p-value (Sig. = 0.000), suggesting a robust relationship. Utilization of available school resources (UASR) also shows a moderately strong influence (Beta = 0.736) with a significant p-value (Sig. = 0.001). Parents' level of education (PLE) demonstrates a substantial influence with the highest standardized coefficient (Beta = 1.230) among the factors examined, indicating a strong positive relationship with academic achievement. The very low p-value (Sig. = 0.000) confirms the statistical significance of this relationship. Family size (FAMSIZE) exhibits a moderate influence (Beta = 0.667) with a highly significant p-value (Sig. = 0.000). Parents' socio-economic status (PSS) shows a relatively lower influence (Beta = 0.338) compared to the other factors, but it is still statistically significant (Sig. = 0.034). Overall, the parents' level of education (PLE) has the highest relative influence on the academic achievement of secondary school students in Agricultural Science, followed closely by the availability of school resources (ASR). Utilization of available school resources (UASR), family size (FAMSIZE), and parents' socio-economic status (PSS) also exhibit notable influences, though comparatively less significant than ASR and PLE.

H₀₃: There will be no significant difference in the mean scores of students' achievement test in agricultural science for male and female respondents in the sampled schools.

Table 4.13 t-test Showing Significant Difference in Students' Achievement Test in Agricultural Science for Male and Female in Secondary School Students in Ibadan metropolis

	N	Mean	Std. Deviation	Std. Error Mean
Male Achievement Test	432	1.79	.639	.031
Female Achievement Test	289	1.74	.600	.035

One-Sample Test						
Test Value = 0						
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Male Achievement Test	58.228	431	.000	1.789	1.73	1.85
Female Achievement Test	49.348	288	.000	1.740	1.67	1.81

The hypothesis under examination, H_03 , posits that there will be no noteworthy disparity in the mean scores of students' achievement tests in agricultural science between male and female respondents in the sampled schools. The results presented in Table 4.13 provide crucial insights into this hypothesis. Upon analysis of the data, it is evident that the mean score for male students in the Achievement Test is 1.79, with a standard deviation of 0.639. Conversely, female students have a mean score of 1.74 with a standard deviation of 0.600.

One-sample t-tests were conducted to evaluate these differences further. For the male achievement test, the t-value was 58.228 with 431 degrees of freedom, yielding an extremely low p-value of 0.000 ($p < 0.05$). The mean difference was calculated at 1.789, and the 95% confidence interval of the difference ranged from 1.73 to 1.85. Similarly, for the female achievement test, the t-value was 49.348 with 288 degrees of freedom, and the p-value was also 0.000 ($p < 0.05$). The mean difference for female students was 1.740, with a 95% confidence interval of the difference spanning from 1.67 to 1.81. In light of these results, it becomes evident that both male and female students' achievement test scores in agricultural science exhibit

statistically significant differences. The exceptionally low p-values and the non-overlapping 95% confidence intervals firmly reject the null hypothesis (H_0). In all, these findings suggest that gender plays a significant role in influencing students' achievement in this subject, with male students outperforming their female counterparts in the sampled schools in Ibadan metropolis.

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4.3 Discussion of Findings

In response to the research question one, "What is the level of students' academic achievement in agricultural science?" The most significant finding is the prevalence of low academic achievement levels among students. Nearly 93% of the students scored below 50, which is an alarming indicator of the state of agricultural science education in these schools. This raises several critical questions about the quality of teaching, curriculum relevance, and support systems in place. The high percentage of students scoring in the "Very Low" and "Low" categories (93.5%) is an issue that requires adequate attention urgently considering the fact that Agricultural science plays a significant role in preparing students for careers in agriculture, agribusiness, and related fields. The low academic achievement levels suggest that many students may be ill-prepared for these careers, which could have a negative impact on the agricultural sector's development in the region. This report was supported by some empirical studies, for instance, a study found that students' achievement in external tests has been declining over the last decade, and enrolment in Agricultural Science has also been declining¹. A related study demonstrated that student's academic achievement in agricultural science is declining in Nigeria².

Research question two investigated the availability of various school resources for teaching and learning agricultural science in public senior secondary schools in Ibadan metropolis. The results are presented based on the Mean and Std (Standard Deviation) scores, with a focus on the availability of different resources.

The findings from research question 2 indicate that the availability of school resources for teaching and learning agricultural science in the surveyed public senior secondary schools in

Ibadan metropolis is at a "Low Level" (Mean score of 2.41). This suggests that these schools face challenges in providing adequate resources for agricultural science education.

These findings have important implications for the quality of agricultural science education in public senior secondary schools in Ibadan metropolis. The "Low Level" of resource availability suggests that students may face limitations in their practical learning experiences, which could impact their academic achievement in the subject. This report is in line with the findings of some related studies. For instance, a study submitted that the availability of resources for agricultural science in schools in Oyo state is extremely limited, functional school farms, field trips, agricultural laboratories, and farm machines and equipment are notably scarce, school libraries and access to current agricultural textbooks are also quite restricted, practical resources such as specimens, simple farm tools, and agricultural charts are rarely available, the presence of a Farm Manager is virtually non-existent, hindering practical guidance while agricultural activities record books, crucial for documenting experiences, are seldom accessible in Nigerian public secondary schools³. Similarly, a study conducted in Akure, Ondo State, Nigeria found out that secondary schools in urban centres face resource challenges. Although slightly better equipped than rural schools, urban schools still encounter limitations especially when it comes to resources to teach and learn agricultural science. Functional school farms, field trips, and agricultural laboratories are not readily available, access to farm machines and equipment is particularly constrained due to space and budget constraints. While libraries offer some agricultural literature, access to current textbooks is still insufficient. Practical resources like specimens, simple farm tools, and agricultural charts are in low supply. The presence of a Farm Manager is generally lacking. Agricultural Activities Record books are moderately accessible but could be improved⁴.

On the contrary, this submission contradicts the findings of some related studies, for instance, a study conducted in Ogun State which is a neighbour to the study's state indicated that agricultural laboratories in secondary schools across the state is highly available. These well-equipped laboratories provide students with ample opportunities for hands-on practical learning and experimentation⁵. Another study conducted in Oyo State observed that the availability of current and relevant agricultural textbooks in Nigerian secondary schools is at a "Very High Level. This extensive collection of textbooks supports comprehensive learning and research in agricultural science. In the same vein, an author submitted that secondary schools in Oyo State have established extensive school farms for practical lessons⁶. These farms offer students a real-world agricultural experience and enhance their understanding of agricultural concepts⁴. In another report, it was highlighted that secondary schools in Osun State have established strong partnerships with local agro-based industries for educational purposes. These collaborations provide students with exposure to the agricultural industry's practical aspects. Again,

The findings of research question three on assessment of the extent of utilization of available school resources in the teaching and learning of agricultural science in the sampled schools provide valuable insights into the current state of agricultural education. The results indicate a "Very Low Extent" of utilization for both the functional school farm for practical lessons and farm machines and equipment. This finding is a source of concern as practical experience is crucial for students studying agricultural science. A lack of practical experience or its underutilization suggests missed opportunities for hands-on learning, which is fundamental to understanding agricultural practices.

The low extent of utilization for field trips to local farms and agro-based industries implies that students are not exposed to real-world agricultural settings. Field trips provide students with

practical exposure to various aspects of agriculture, and their underutilization may hinder students' ability to connect theoretical knowledge with practical application. The low extent of utilization for the agricultural laboratory and specimens of agricultural produce is noteworthy. These resources are essential for conducting experiments and understanding the scientific aspects of agriculture. Their underutilization suggests a lack of emphasis on the practical and scientific aspects of agricultural science. On a more positive note, simple farm tools and agricultural charts are being utilized to a "High Extent." This suggests that some resources are effectively integrated into the teaching and learning process. The high utilization of these resources could serve as a model for improving the utilization of other resources.

The "Very Low Extent" of utilization for the Farm Manager role indicates that there might be a lack of expertise and guidance in managing the school's farm resources. A qualified farm manager could play a pivotal role in optimizing the use of the farm for educational purposes. The "Very High Extent" of utilization for current and relevant agricultural textbooks is a positive sign. This indicates that schools are trying to provide up-to-date learning materials, which is essential for keeping students informed about recent developments in the field of agriculture. However, the weighted mean of 2.17, falling within the "Low Extent" category, highlights a widespread issue of underutilization of resources. This implies that, on average, schools are not making optimal use of the few resources available for teaching agricultural science. It raises concerns about the efficiency and effectiveness of agricultural education in the sampled schools. This finding is in line with the position of some studies. For instance, a study found that a significant proportion of schools lacked access to modern educational technology such as computers, internet connectivity, and multimedia resources. Findings indicated that only 20% of schools had functional computer laboratories, and even fewer had internet access. This limited access to

technology in Nigerian schools hinders students' exposure to digital learning resources and modern teaching methods, suggesting poor utilization of educational resources in the digital age⁷.

Another study revealed a severe shortage of qualified teachers, especially in rural areas in Nigeria. The findings showed that a substantial number of classes were either taught by unqualified personnel or had a student-teacher ratio well above recommended standards. This situation indicated that existing human resources were not effectively utilized, leading to compromised learning experiences for students⁸. A comprehensive study focusing on school libraries in Nigeria discovered that a significant percentage of schools lacked essential library resources, including textbooks, reference materials, and reading spaces. Findings indicated that only 30% of schools had adequately stocked libraries. This scarcity of educational materials and conducive learning environments suggested that educational resources were underutilized, hindering students' access to knowledge and research opportunities⁹.

Test of hypothesis one highlights the significant combined influence of both school and home factors on the academic achievement of secondary school students in Agricultural Science in Ibadan metropolis. This finding highlights the complexity of the educational environment and the multifaceted nature of factors that can impact a student's academic performance. The finding emphasizes the importance of a holistic approach to education, recognizing the interplay between home and school environments. It emphasises the need for policymakers and educators to consider both school resources and home factors in their efforts to improve academic outcomes. Similarly, the result of test of hypothesis two on significant relative influence of school resources (availability and utilisation) and home factors (parents' socio-economic status, parents' level of education and family size) on academic achievement of secondary school students in agricultural science in Ibadan metropolis highlights the importance of school resources, both in terms of

availability and utilization, in shaping students' academic achievement. The findings suggest that schools should not only ensure that the necessary resources for teaching and learning Agricultural Science are available but also focus on their effective utilization. This dual approach is likely to have a positive influence on students' academic outcomes. It highlights the responsibility of educational institutions to provide a conducive environment for learning, including well-equipped classrooms, libraries, and teaching materials. The result equally emphasizes the substantial influence of home factors on student academic achievement. Factors such as parents' socio-economic status, parents' level of education, and family size were found to be significant predictors with the parents' level of education (PLE) having the highest relative influence on the academic achievement. This highlights the interconnectedness of the home environment and a student's educational experience. Students with more favourable home factors may have access to better support systems and resources outside of school, contributing to their academic success.

The findings also suggest that addressing both School Resources and Home Factors is essential for improving student academic achievement. Policymakers and schools should consider strategies to enhance the availability and utilization of resources within the educational system. Simultaneously, efforts should be made to support families and address home factors that may hinder a student's academic progress. This comprehensive approach acknowledges that students' success is influenced by a complex interplay of factors both within and outside of the school environment.

Another study demonstrates that parents' socio-economic status significantly influences student academic achievement. Students from families with higher socio-economic status tend to have better access to educational resources, including tutoring, extracurricular activities, and

educational materials, which contribute to their academic success¹⁰. In the same vein, a related study posited that parental education level plays a crucial role in determining student academic achievement. Students whose parents have higher levels of education are more likely to excel academically. This may be due to the increased support and emphasis on education within these families¹¹. Also, a study highlights that family size can also impact academic achievement. Students from smaller families may benefit from more individualized attention and support from their parents, which can positively affect their educational outcomes. In contrast, students from larger families may face challenges related to resource allocation and time management¹².

On the contrary, findings from a related study suggest that there is no significant relationship between the availability and utilization of school resources and the academic achievement of secondary school students. Despite variations in school resources, academic achievement remained consistent across different schools. It appears that other factors outside the scope of this study may be more influential in determining academic outcomes¹³. Another study similarly reveals that home factors, including parents' socio-economic status, parents' level of education, and family size, do not have a statistically significant impact on the academic achievement of secondary school students. Students from diverse home backgrounds exhibited similar levels of academic performance¹⁴. It appears that, in this context, these home factors do not play a significant role in shaping academic outcomes.

Test of hypothesis three on significant difference in the mean scores of students' achievement test in agricultural science for male and female respondents in the sampled schools. The findings from these t-tests clearly indicate that there are statistically significant differences in the achievement test scores between male and female students. The extremely low p-values suggest that these differences are not due to random chance but are indeed substantial. Additionally, the

non-overlapping 95% confidence intervals further emphasize the significance of these differences. Based on these results, the null hypothesis (H_0) stating that there would be no significant difference in the mean scores of students' achievement tests in agricultural science between male and female respondents in the sampled schools is firmly rejected. Instead, the evidence supports the alternative hypothesis, indicating that gender does play a significant role in influencing students' achievement in this subject. This findings highlight that male students outperformed their female counterparts in the sampled schools in Ibadan metropolis in terms of agricultural science achievement test scores. This finding could be a product of some reasons, for instance, in certain societies, there might be prevailing cultural norms and expectations that influence the education of males and females differently. These expectations could impact the level of encouragement, support, and opportunities provided to male students compared to their female counterparts, leading to differences in academic performance. Gender disparities in access to educational resources, such as quality teaching, learning materials, and facilities, can also contribute to variations in academic achievement. Unequal access to educational opportunities might put female students at a disadvantage compared to male students, resulting in lower achievement levels in specific subjects like agricultural science. Similarly, gender biases in classroom interactions, including teacher-student dynamics and peer relationships, may affect the learning environment and academic performance. Biases can lead to differences in the ways male and female students are encouraged, challenged, and evaluated, potentially impacting their achievement in agricultural science or other subjects. Furthermore, cultural stereotypes related to gender abilities and interests in agricultural science might influence students' self-perceptions and choices in educational pathways. The statistically significant differences observed in the mean scores, coupled with the narrow 95% confidence intervals, provide robust evidence

supporting the notion that gender disparities exist in students' academic achievement in this subject. Further research may explore the underlying factors contributing to these differences and suggest interventions to promote gender equity in agricultural science education.

The findings of this test of hypothesis is in line with the submission of a study which found that male students tend to report a significantly higher level of interest in agricultural science compared to their female counterparts. There is a positive correlation between self-reported interest in agricultural science and academic achievement in the subject, with students who express greater interest generally performing better. Female students may have a lower level of extracurricular involvement in agricultural activities compared to male students, which could be related to their lower interest in the subject¹⁵. Similarly, a study that uses classroom observations reveal subtle gender bias in teacher-student interactions, with male students receiving slightly more attention, encouragement, and opportunities for participation compared to female students. Teacher surveys indicate that some teachers may hold unconscious biases related to gender, which can influence their behaviour in the classroom. Female students report feeling less confident in participating in agricultural science classes due to perceived bias in teacher behaviour and classroom dynamics. The academic achievement data show that, on average, male students outperform female students in agricultural science achievement tests, which may be partially attributed to the gender bias observed in the classroom¹⁶.

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Chapter Five

Conclusion

This chapter focuses on the summary of findings, conclusions, recommendations (based on the findings of the study), contribution to knowledge and the areas of further research.

5.1 Summary of Findings

This study was conducted to investigate the influence of School Resources and Home Factors on Senior Secondary School Students Academic Achievement in Agricultural Science in Ibadan Metropolis.

Research question one focused on the level of students' academic achievement in agricultural science. The most significant finding is the prevalence of low academic achievement levels among students. Nearly 93% of the students scored below 50, which is an indicator of the state of agricultural science education in these schools. The high percentage of students scoring in the "Very Low" and "Low" categories (93.5%) is an issue that requires adequate attention considering the fact that Agricultural science plays a significant role in preparing students for careers in agriculture, agribusiness, and related fields. The low academic achievement levels suggest that many students may be ill-prepared for these careers, which could have a negative impact on the agricultural sector's development in the region.

Research question two aimed to investigate the availability of school resources for teaching Agricultural Science in public senior secondary schools located in Ibadan metropolis. To achieve this, the study utilized a table that categorized the availability of these resources and provided thresholds for interpretation. The key findings can be summarized as follows: The presence of a functional school farm for practical lessons was found to be at a "Low Level." Field trips to local farms and agro-based industries were classified as having a "Very Low Level" of availability.

School libraries were categorized as having a "High Level" of availability. Agricultural laboratories were placed in the "Low Level" category. The availability of functional farm machines and equipment was rated as "Very Low Level." Specimens of agricultural produce were found to be at a "High Level" of availability. Simple farm tools such as watering cans and Knapsack Sprayers also showed a "High Level" of availability. Agricultural charts were categorized as having a "Low Level" of availability. The presence of a Farm Manager was rated as "Very Low Level." Agricultural Activities Record books were placed in the "High Level" category. Availability of current and relevant Agricultural textbooks was found to be at a "Very High Level." In summary, the study's findings indicate that, on average, the availability of school resources for teaching and learning agricultural science in the surveyed public senior secondary schools in Ibadan metropolis is considered to be at a low level. This low level of resource availability may potentially have implications for students' academic achievement in the subject.

Research question three was based the level of utilization of school resources for the teaching and learning of agricultural science in a selected group of schools. The provided result offers a comprehensive view of this utilization, categorizing each resource's extent of use as "Very High Extent," "High Extent," "Low Extent," or "Very Low Extent." It also includes a Weighted Mean, which provides an overall assessment. Analyzing the table, we observe varying degrees of resource utilization: Functional school farm for practical lessons and field trips to local farms and agro-based industries both indicate "Very Low Extent" of utilization. The school library and agricultural laboratory fall within the "Low Extent" category. Functional farm machines and equipment are underutilized, marked as "Very Low Extent." Specimens of agricultural produce also have a "Low Extent" of utilization. Simple farm tools and agricultural charts show more promising utilization, categorized as "High Extent." The farm manager resource is notably

underutilized, rated as "Very Low Extent." The agricultural activities record book falls into the "Low Extent" category. Current and relevant agricultural textbooks stand out with a "Very High Extent" of utilization. The weighted mean, representing the overall extent of resource utilization, places these schools in the "Low Extent" category according to the provided thresholds. This suggests that, on average, the school resources available for teaching and learning agricultural science are not being optimally used in the sampled schools. While a few resources see high utilization, the majority remain underutilized or have low utilization rates. This underscores a potential gap between the availability of resources and their effective use for educational purposes. To enhance the quality of agricultural science education in these schools, it is crucial to implement strategies and interventions aimed at improving the comprehensive utilization of available resources. Elevating resource utilization levels has the potential to greatly benefit students by enhancing their learning experiences and academic achievements in the field of agricultural science.

Test of hypothesis one revealed that School Resources (availability and utilization) and Home Factors (parents' socio-economic status, education level, and family size) significantly influence the Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis. Approximately 60.6% of the variation in academic achievement can be explained by these factors, indicating a strong relationship. The model fits well, and predictions are relatively accurate. Furthermore, the statistical analysis indicates that the combined influence of School Resources and Home Factors is statistically significant, as evidenced by a low p-value. The study emphasizes the need for schools to ensure both the availability and effective use of resources while also considering home factors. These findings suggest that policymakers and educators

should adopt comprehensive strategies to improve educational outcomes for students in Ibadan metropolis, considering both school and home-related factors.

Test of hypothesis two aimed to investigate the relative influence of "School Resources" and "Home Factors" on the academic achievement of secondary school students in Agricultural Science in Ibadan metropolis, testing the null hypothesis (H_02) that there would be no significant influence of these variables on student academic achievement. The findings indicate that both School Resources and Home Factors play significant roles in shaping the academic achievement of these students. Home Factors, which encompass various aspects of students' home environments, exert a notably stronger influence on academic achievement compared to School Resources. This suggests that factors related to students' family backgrounds and living conditions have a more substantial impact on their academic success in Agricultural Science within Ibadan metropolis. In all, the study's results reject the null hypothesis and underscore the importance of considering Home Factors as a key contributor to academic achievement among secondary school students in Agricultural Science in this specific context.

Test of hypothesis three suggested there would be no significant difference in the mean scores of students' achievement tests in agricultural science between male and female respondents in the sampled schools. The results indicate that there are indeed statistically significant differences in the mean scores between male and female students in both the male and female achievement tests. Consequently, the null hypothesis (H_03) is rejected, suggesting that gender does play a significant role in influencing students' achievement in agricultural science. In the sampled schools in Ibadan metropolis, male students tend to outperform their female counterparts in this subject.

5.2 Conclusion

In conclusion, this study has shed light on the critical factors influencing Senior Secondary School Students' Academic Achievement in Agricultural Science in Ibadan Metropolis. The findings have provided valuable insights into the availability and utilization of school resources, the impact of home factors, and the role of gender in shaping academic achievement in this subject.

Firstly, it is evident from this research that the availability of school resources for teaching and learning agricultural science in public senior secondary schools in Ibadan metropolis is at a generally low level. This concerning state of resource availability may have implications for students' academic achievement, as insufficient resources can hinder effective teaching and learning experiences.

Secondly, the utilization of available school resources, as indicated by this study, is also underutilised in the sampled schools. While some resources see reasonable utilization, the majority remain underutilized, emphasizing the need for strategies to improve their comprehensive use for educational purposes.

Furthermore, this finding of this study confirms that both School Resources and Home Factors significantly influence the Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis. These factors collectively explain a substantial portion of the variation in academic achievement, highlighting their importance in shaping students' success in this subject. Policymakers and educators should consider these factors when designing interventions to enhance educational outcomes.

Interestingly, Home Factors were found to exert a more substantial influence on academic achievement compared to School Resources. This emphasises the significance of students' family backgrounds and living conditions in determining their academic success in Agricultural Science in this specific context. Lastly, our study also revealed that there are statistically significant gender differences in students' achievement in agricultural science, with male students tending to outperform their female counterparts in the sampled schools. This suggests the need for targeted strategies to address gender-related disparities in academic achievement in this subject.

In light of these findings, it is imperative for educational stakeholders, including schools, parents, and policymakers, to collaborate in improving the availability and utilization of school resources while also considering the significant impact of home factors and addressing gender disparities. By doing so, we can work towards enhancing the academic achievement and overall educational experiences of Senior Secondary School Students in Agricultural Science in Ibadan Metropolis.

5.3 Recommendations

On the basis of the findings, the following recommendations are thereby made:

1. Schools should prioritize the acquisition of necessary resources for teaching agricultural science, such as functional farm facilities, equipment, and current textbooks.
2. There is a need to develop and implement strategies to ensure the effective utilization of available resources, including training teachers on how to maximize the use of resources available for practical lessons.
3. School Authorities should invest in Teachers' Training and Capacity Building. This can be done by providing professional development opportunities for agricultural science

teachers to improve their pedagogical skills and expertise in utilizing available resources effectively. It can be done by encouraging teachers to stay updated with the latest teaching methods and technological advancements in agricultural science education.

4. Teachers should encourage gender-sensitive teaching approaches and interventions to bridge the achievement gap between male and female students in agricultural science. They should promote inclusivity and encourage female students to participate in agricultural science-related activities and practical lessons to improve their confidence and performance.
5. There is a need to create awareness among parents and guardians about the importance of their role in supporting their children's education, including providing a conducive home environment for studying and encourage parents to actively participate in their children's education by attending parent-teacher meetings and staying informed about their academic progress.
6. There is a need for synergy between schools and homes to improve the availability of resources and opportunities for agricultural science education.

5.4 Contribution to Knowledge

1. This study has contributed to the body of knowledge in the following ways

(a) Conceptual

This study gave explanation to the influence of School Resources (Availability and utilization) and Home factor (Parent Socio-economic Status, parents Level of Education and Family size) as determinant of Academic Achievement in Senior Secondary School Students Academic Achievement in Agricultural Science.

Theory

This study has also shown the relevance of theories such as the theory of experiential learning and the theory of motivation.

Experiential learning is based on the idea that the best way to learn something is to actually do it. Those adventures also stick in your mind, assisting you in retaining facts and remembering knowledge. It is critical for educators to provide opportunities for kids to have exploits based on what they are learning about. Instructors can help create environments where students can learn and experience new things at the same time.

Experiential learning theory is relevant to this study because it emphasised the idea of involving practical in teaching and learning of agricultural science. Experiential learning through practical sessions and use of resources in agricultural science education can allow students to immediately apply things they are learning in the classroom to real-world experiences. The students are able to convert the knowledge acquired into real life situations. Also, experimenting theories through practical helps the students to retain the knowledge and make the students to master the content of the curriculum. Therefore, it allows students to participate actively and effectively thereby eliminating boredom and making the subject

interesting to students. Practical makes students to be independent and grant them better understanding of the scope. Experiential theory encourages the availability and use of relevant resources in the teaching and learning process.

On the other hand, McClelland's theory proposes that people are motivated to varied degrees by their need for Performance, need for Power, and need for Affiliation, and that these wants are acquired, or learnt, throughout the course of a person's life. In other words, the majority of people has and will demonstrate a combination of three requirements.

This theory is relevant to the influence of students' motivation as a result of the motivating factors for excellent achievement in Agricultural Science being in place. The theory focuses more on what the right factors both in the home and at school can do to the students. Students that are well motivated will do well in their academics in the school. Proper motivation could cause a student to conform to certain interest, norms or behaviours that can foster their achievement in Agricultural Science. Parental financial capability and encouragement coupled with the availability of the necessary resources in the school will help motivate the students.

(c) Empirical

This study has added to the numbers of empirical studies by revealing that School Resources Availability and utilization and home factors (parents' socio- economic status, parents' level of education, family size) influence students academic Achievement in Agricultural Science.

5.5 Suggested Areas of Further Studies

a. Research Type/ Methods

other types/ method of research such as qualitative and mixed methods could be employed for further work around the subject area. In this case, other kinds of instrumentation like interview, observation, checklist alongside questionnaires could be used.

b. Research Design

Research designs engaged in this research can be employed.

c. Demography

Demography of students such as ages and gender can be used as intervening variables in subsequent studies.

d. Population/Sector

Junior secondary school students or even primary pupils can be used as study population in another study.

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Appendices

Appendix 1: Agricultural Science Achievement Test (ASAT)

Class: SS2 Time: 30 minutes

Section A: Respondents Demographic Data

Instruction: Please tick or write the correct answer to the following questions:

1. Name of School: -----
2. Gender: Male () Female ()
3. Age: 13-15 years () above 15 years ()
4. Family type: Monogamy (), Polygamy (), Single Parent ()
5. Residential place: Urban (), Rural ()
6. Parent's Academic Qualification : Never went to school (), Primary education (), Secondary Education (), Higher Education ()

Section B

Instruction: Choose the correct answer for each of the following questions from option A-

1. Which of the animal products is used in the production of buttons?
(a) Skin (b) Fur (c) Bone (d) Horn
2. Subsistence farmers often practice (a) monoculture (b) mono-cropping (c) mixed-cropping (d) crop rotation
3. A piece of land is used to be on lease to a farmer when it is
(a) given as compensation (b) purchased on credit (c) rented for a period (d) given as a gift
4. Which of the following equipment is a farm implement?
(a) dryer (b) sheller (c) mower (d) mist blower
5. A periodic maintenance activity carried out on the farm tractor is (a) checking of radiator water (b) checking of tyre pressure (c) changing of engine oil (d) cleaning after use
6. Farm mechanization does **not** (a) involve the use of motorized equipment (b) require much capital (c) promote employment (d) involve the use of heavy machinery

7. Which of the following sources of farm power is most versatile in West Africa?
(a) Biogas (b) Animal (c) Wind (d) Water
8. Farm surveying equipment include the following except (a) Abney level (b) compass (c) Gunter's chain (d) spade
9. The system in which a farmer uses a piece of land for a period and abandons it for another land is called (a) crop rotation (b) mix cropping (c) shifting cultivation (d) ley farming
10. A socio-cultural factor affecting land availability for agriculture includes the use of land for (a) constructing road (b) building houses (c) building factories (d) building religious houses
11. Which of the following rocks is sedimentary?
(a) limestone (b) bacteria (c) viruses (d) protozoa
12. Soil profile is important to agriculture because it
(a) determines the soil catena (b) determines the type of the land tenure system (c) gives indication of the types of crops to grow (d) promotes the weathering rocks
13. What is the percentage of the water content of the soil sample which weighed 180g when fresh and 120g when oven-dried (a) 20.14% (b) 25.00% (c) 33.33% (d) 60.00%
14. A soil sample with a Ph of 4.5 is said to be (a) Acidic (b) Alkaline (c) neutral (d) Fertile
15. The property of soil which cannot easily be changed by a farmer is the (a) Porosity
(b) Structure (c) Texture (d) Acidity
16. A farmer continuously applies sulphate of ammonia to the farmland for many years, the resultant soil solution is most likely to (a) leave blue litmus paper (b) change blue litmus paper to red (c) change red litmus paper to blue (d) be rich in soil microbes
17. Application of water to the subsoil through perforated pipes is known as (a) flooding irrigation (b) subsurface irrigation (c) sprinkler irrigation (d) overhead irrigation
18. Tobacco belongs to the group of crops called (a) Fibers (b) Beverages (c) Stimulants (d) Cereals
19. Maize is a popular crop in West Africa because it (a) is a cereal (b) has multiple uses (c) is of high nutritional value (d) was introduced from Europe
20. The following crops require shade trees at the seedling stage except (a) Theobroma cacao (b) Coffee spp (c) Eleisguineensis (d) Oryza Sativa
21. Crops which are primarily grown to provide food for farm animals are (a) Legumes (b) Weeds
(c) Forages (d) Grasses
22. Callosobruchus maculatus is a common pest of (a) Sorghum (b) Rice (c) Maize (d) Cowpea

23. The use of pathogens to control dobber weeds is a (a) Physical method (b) Mechanical method (c) Biological method (d) Cultural method
24. The digestive function of the rumen in ruminant nutrition is enhanced by the (a) absorption of water (b) presence of micro-organism (c) retention of unwanted foreign materials (d) absorption of food nutrients
25. The duration of the oestrus cycle of sow is (a) 14-28 days (b) 6-10 days (c) 3-5 days (d) 1-2 days.

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Appendix 2

Students' Questionnaire on School Resources and Home Factors (SQSRHF)

Department of Art and Social Science Education,
Faculty of Education,
Lead City University,
Ibadan

Dear Respondents,

Request to Participate in a Research

I am an M.Ed. student of the above mentioned institution. I am currently carrying out a research to gain insight into the level at which School Resources and Home Factors determine Senior Secondary School Students Academic Achievement in Agricultural Science in Ibadan Metropolis. You are to please, respond appropriately to the set of questions in this questionnaire. As respondents in this exercise, you are not expected to write your name; all information given will be treated as anonymous and will be used solely for research purpose.

Yours faithfully,

Mrs Aribike Makinde

Part A : Demographic Data of Respondents

Instruction: Please tick or write the correct answer to the following questions:

1. Name of School: -----
2. Gender: Male () Female ()
3. Age: 13-15 years () above 15 years ()
4. Family type: Monogamy (), Polygamy (), Single Parent ()
5. Residential place: Urban (), Rural ()
6. Parent's Academic Qualification : Never went to school (), Primary education (), Secondary Education (), Tertiary Education ()

Section B:

Please respond to each item in this section by ticking (✓) the appropriate option

1. Availability of School Resources for teaching and learning of Agricultural Science

S/N	Items What is the level of availability of the following school resources in the teaching and learning of agricultural science in your school?	Always Available 4	Available 3	Rarely Available 2	Not Available 1
1.	Functional school farm for practical lessons				
2.	Field trips to local farms and agro-based industries				
3.	School library				
4.	Agricultural laboratory				
5.	Functional Farm machines and equipment				
6.	Specimens of agricultural produce				
7.	Simple farm tools (e.g. watering can, Knapsack Sprayer)				
8.	Agricultural charts				
9.	Farm Manager				
10.	Agricultural Activities Record book				
11.	Current and relevant Agricultural textbooks				

2. Extent of Utilisation of Available School Resources for teaching and learning of Agricultural Science

S/N	Items	Very High Extent 4	High Extent 3	Low Extent 2	Very Low Extent 1
	To what extent are the following resources being utilised in the teaching and learning of agricultural science in your school?				
13.	Functional school farm for practical lessons				
14.	Field trips to local farms and agro-based industries				
15.	School library				
16.	Agricultural laboratory				
17.	Functional Farm machines and equipment				
18.	Specimens of agricultural produce				
19.	Simple farm tools (e.g. watering can, Knapsack Sprayer)				
20.	Agricultural charts				
21.	Farm Manager				
22.	Agricultural Activities Record book				
23.	Current and relevant Agricultural textbooks				

Section C: Home factors and Academic Achievement; Respondents (Students)

S/N	Items	SA 4	A 3	D 2	SD 1
Parents' Socio-Economic Status					
1	I am from a family with high financial status				
2	I have access to basic needs at home (clothes, food & shelter)				
3	My parents supports my academics by providing me with most of the recommended textbooks and other learning resources as at when needed				
4	I miss school because I hawk for my parents				
5	My parents' financial status boosts my confidence level in my academic performance				
Parents' Level of Education					
1	My parents check my notes and homework regularly				
2	My parents assist me in my assignments and in preparing for tests and examinations				
3	My parents regularly discuss issues related to my studies with me				
4	My parents get feedback from my teachers about my progress in school				
5	I miss deadlines in the submission of assignments and other school work				
Family size					
1	I am from a polygamous family				
2	I come from a large family (i.e. a family of more than five children)				
3	I receive constant attention from my parent				
4	My siblings provide me a favourable environment to concentrate on my studies at home				
5	I am the youngest among my parents' children				

Appendix 3

List of Tables

Year	Candidate population	Raw mean score	Standard deviation
2017	494,920	38	16.79
2018	369,542	33	13.67
2019	358,531	31	13.04
2020	534,206	45	14.07
2021	530,597	44	13.17

Source: Chief examiners report of 2017-2021 on Agricultural science

Table 3.1. Total number of Public Secondary Schools in Ibadan Metropolis

S/N	Name of Local Government	Total number of Public Secondary Schools	Number of SS2 Students
1	Akinyele	36	4,799
2	Egbeda	30	5,143
3	Ibadan North	42	7,545
4	Ibadan Northeast	35	4,862
5	Ibadan Northwest	13	7,171
6	Ibadan Southeast	36	2,390
7	Ibadan Southwest	30	5,999
8	Ido	26	2,553
9	Lagelu	26	2,777
10	Oluyole	29	5,436
11	Ona-Ara	33	6,707
		336	48,211

Source: Oyo State Post Primary schools teaching service commission 2022

Researcher Field 2023

Table 3.2 Population Distribution of the Study Located in Urban Areas

S/N	LGA	Number of Schools	Number of SS2 Students
1	Ibadan North	42	580
2	Ibadan North East	35	374
3	Ibadan North West	30	461
4	Ibadan South East	36	184
5	Ibadan Southwest	30	196
	Total	173	1,795

Source Field study 2023

Table 3.3 Population Distribution of the Study Located in Semi-urban Areas

S/N	LGA	Number of Schools	Number of SS2 Students
1	Akinyele	36	369
2	Egbeda	30	395
3	Ido	26	196
4	Lagelu	26	214
5	Oluyole	29	418
6	Ona Ara	33	516
		180	2,108

Source Field study 2023

Table 3.4: Local Government selected

S/N	LGA	Location	Number of Schools	Number of Students
1	Ibadan North	Urban	42	580
2	Ona Ara	Semi Urban	33	516
	Total	02	75	1,096

Source; Field study 2023

4.1 Questionnaire Return Rate

S/N		Frequency	Percentage
1	Distributed	1,096	100
2	Retrieved	994	90.6
3	Found Useful for Analysis	721	72.54

Source ; Researcher's Field Work 2023

4.2 Discussion on Demographic Characteristics of Respondents

Table 4.2: Gender of Respondents

	Frequency	Percent
Male	432	59.9
Female	289	40.1
Total	721	100.0

Source ; Researcher's Field study 2023

Table 4.3: Age of Students

	Frequency	Percent
13-15years	260	36.1
Above 15 years	461	63.9
Total	721	100.0

Source; Field study 2023

Table 4.4 Family Type of Student

	Frequency	Percent
Monogamy	553	76.7
Polygamy	90	12.5
Single Parent	78	10.8
Total	721	100.0

Table 4.5: Residential Place of Student

	Frequency	Percent
Urban	532	73.8
Rural	189	26.2
Total	721	100.0

Table 4.6: Parent's Academic Qualification

	Frequency	Percent
Never went to School	8	1.1
Primary Education	54	7.5
Secondary Education	481	66.7
Tertiary Education	178	24.7
Total	721	100.0

Table 4.7 Student Academic Achievement

Score	Frequency	Percent
Less Than 25	173	24.0
25-49	494	68.5
50-69	44	6.1
70-100	10	1.4
Total	721	100.0

Decision Rule:

Scores less than 25 is very low, 25-49 is low, 50-69 is high, 70-100 is very high

Table: 4.7: Availability of School Resources for teaching and learning of Agricultural Science

S/N	Items	Always Available 4	Available 3	Rarely Available 2	Not Available 1	Mean	Std
1	Functional school farm for practical lessons	180 (25.0%)	160 (22.2%)	116 (16.1%)	265 (36.8%)	2.35	1.210
2	Field trips to local farms and agro-based industries	76 (10.5%)	124 (17.2%)	168 (23.3%)	353 (49.0%)	1.89	1.036
3	School library	322 (44.7%)	171 (23.7%)	25 (3.5%)	203 (28.2%)	2.85	1.260
4	Agricultural laboratory	142 (19.7%)	172 (23.9%)	114 (15.8%)	293 (40.6%)	2.23	1.176
5	Functional Farm machines and equipment	96 (13.3%)	112 (15.5%)	132 (18.3%)	381 (52.8%)	1.89	1.098
6	Specimens of agricultural produce	170 (23.6%)	258 (35.8%)	101 (14.0%)	192 (26.6%)	2.56	1.119
7	Simple farm tools (e.g. watering can, Knapsack Sprayer)	252 (35.0%)	220 (30.5%)	70 (9.7%)	179 (24.8%)	2.76	1.176
8	Agricultural charts	132 (18.3%)	188 (26.1%)	156 (21.6%)	245 (34.0%)	2.29	1.119
9	Farm Manager	90 (12.5%)	120 (16.6%)	126 (17.5%)	385 (53.4%)	1.88	1.090
10	Agricultural Activities Record book	190 (26.4%)	230 (31.9%)	118 (16.4%)	183 (25.4%)	2.59	1.130
11	Current and relevant Agricultural textbooks	372 (51.6%)	200 (27.7%)	57 (7.9%)	92 (12.8%)	3.18	1.036
Weighted Mean						2.41	1.132

Source: Fieldwork survey, 2022

Table 4.9 Model Summary of Combined Influence of School Resources (availability and utilisation) and Home Factors (parents' socio-economic status, parents' level of education and family size) on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis

Model	R	R Square	Adjusted R Square
1	.779 ^a	.606	.604

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	53.218	2	26.609	298.899	.000
	Residual	34.541	388	.089		
	Total	87.760	390			

a. Dependent Variable: Student Academic Achievement

b. Predictors: (Constant), Home Factors, School Resources

Table 4.10: Model Summary of Relative Influence of School Resources and Home Factors on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan metropolis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.378	.073		46.114	.000
	SCHRES	.003	.001	.205	4.088	.000
	Home Factors	.029	.002	.610	12.186	.000

Dependent Variable: Student Academic Achievement

**School Resources and Home Factors (SCHRES)

Table 4.11: Model Summary of The Relative Influence of School Resources (Availability and Utilisation) and Home Factors (Parents' Socio-Economic Status, Parents' Level of Education And Family Size) on Academic Achievement of Secondary School Students in Agricultural Science in Ibadan Metropolis.

	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients Beta		
(Constant)	.514	.200		2.577	.010
ASR	.041	.007	.974	5.756	.000
UASR	.032	.009	.736	3.427	.001
PSS	.057	.027	.338	2.127	.034
PLE	.195	.021	1.230	9.478	.000
FAMSIZE	.073	.015	.667	4.928	.000

Dependent Variable: Student Academic Achievement

Table 4.12 t-test Showing Significant Difference in Students' Achievement Test in Agricultural Science for Male and Female in Secondary School Students in Ibadan metropolis

	N	Mean	Std. Deviation	Std. Error Mean
Male Achievement Test	432	1.79	.639	.031
Female Achievement Test	289	1.74	.600	.035

One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Male Achievement Test	58.228	431	.000	1.789	1.73	1.85
Female Achievement Test	49.348	288	.000	1.740	1.67	1.81

Bio-data

A. Personal Data

Name: Serifat Aribike MAKINDE
E-mail: makindearibike@gmail.com
Phone No: 08027473282
Date and place of birth: 28-08-1970, Ibadan
Nationality: Nigerian

Next of Kin

Name: Mogaji Kabiru Ademola MAKINDE
Address: 6, Balogun Ogbagi Idi-Iroko off Akanran Road, Ib.

B. Educational Background with Dates

Institution Attended with Dates

- | | |
|---|-------------|
| (a) Lead City University, Ibadan, | 2021 |
| (b) Adekunle Ajasin University, Akungba | 1999 -2003 |
| (c) St. Andrews College of Education | 1990 - 1994 |
| (d) Monatan High School, Ibadan | 1983 -1988 |
| (e) Olubadan High School, OritaAperin | 2013 |
| (f) St. David's Abidiotan, Iyana Church | 1976 - 1983 |

Academic Qualification with Dates

- | | |
|---|---------|
| (a) M.Ed in Education Management | In view |
| (b) B.Ed in Educational Management | 2003 |
| (c) Senior School certificate examination | 1988 |
| (d) GCE (WAEC) | 2013 |
| (e) First School Leaving Certificate | 1976 |

Work Experience with Dates

- i. Community Grammar School, Lalupon, Ibadan 1997 - 1999
- ii. Elekuro High School, Ibadan 2000 - 2023
- iii. Abonde Community Grammar School, Ibadan 2023 - till date

Professional Membership

- i. Nigeria Union of Teacher's 1997
- ii. Teacher's Registration Council of Nigeria 2007

F. Publication

- i. Sexual Harassment in Tertiary Institution in Nigeria: Causes and Preventive Measures 2022

G. Major Conferences Attended with Dates

- i. Best Practices in Education for Sustainable National Development in Nigeria 2023
- ii. Pragmatic Human Capital for Sustainable Development 2022
- iii. Strengthening Mathematics and Science Education 2011
- iv. Family Life HIV & AIDS Education in Oyo State 2006

H. References

1. Prof Senimetu Ileuma
Lead City University
Department of Arts and Social Science
2. Dr Oluyomi S. Pitan
Lead City University
Department of Arts and Social Science
3. Dr Kunmbi Dele Oladejo
Dominican University,
Department Social Sciences

Signature

Date

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The University Compliance Certification

This is to certify that this Thesis written by Serifat Aribike MAKINDE with Matric No: LCU/PG/002116 in the Department of Arts and Social Science Education, Faculty of Education, Lead City University, Ibadan is in full compliance with the approved University format and style.

Signature

Date

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