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SOCIAL SCIENCE

EXPLORING THE IMPACT OF SCHOOL FACTORS ON AGRICULTURAL SCIENCE ACHIEVEMENT IN NIGERIAN JUNIOR SECONDARY SCHOOLS

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ABSTRACT

Agricultural science is an essential part of the junior secondary school curriculum in Nigeria. It helps students gain the knowledge and abilities they need to comprehend and participate in the agricultural sector, which is the backbone of the country's economy. The research was conducted in Abeokuta North Southwest, Nigeria in 2023. The research objectives are centered on assessing the effects of school factors on student's performance in agricultural science through an examination of the socio-demographic characteristics and different instructional materials available. The study revealed that agricultural science demonstration farms was ranked last (mean=1.40) among the instructional materials by the schools. Only a small fraction (5.9%) of the respondents had excellent (A) grades in agricultural science. The multiple linear regressions demonstrated significant ($p<0.05$) relationships between human ($\beta=0.040$); management ($\beta=0.078$); parent ($\beta=0.002$); government factors ($\beta=0.020$) and academic performance of the students in agricultural science. The study concluded that agricultural demonstration farm and chart are available but not adequate in most of the schools. The study recommends that both State and Federal government in collaboration with Ministry of Agriculture and Education should provide adequate resources for the teaching and learning of agricultural science.

KEYWORDS: Effects; school; factors; students; performance; agricultural science; policy; formulation; implementation; Nigeria

INTRODUCTION

Schools according to Amao and Gbadamosi (2015) are social institutions in which groups of individuals are brought together to share educational experiences. The secondary school system of education assumes the role of training and producing students for tertiary institutions and manpower for national development and world of work (Amao, 2017). The goal of helping students to acquire scientific knowledge and the required skill may not have been achieved due to poor study and irregular habits and effective practical lesson among secondary school students in Agricultural science (Emeya, and Ojimba, 2012). Smith (2012) emphasized the important of environmental influence as a major factor in the development of student's. According to Okolie *et al.* (2014) secondary school students in public school often come from economically poor and average income families. The families face various problems causing emotional disturbance among their children which may result in poor academic performance. This singular factor has caused serious setback to academic achievement status to secondary school students.

According to Eimuhi and Ogedegbe, (2016) learning can occur through one's interaction with one's environment. Puja (2015) identified seven environmental factors that may affect the teaching learning process and one of them is the environmental factor. Environment here refers to facilities that are available to facilitate students learning outcome. It includes books, audiovisual, software and hardware of educational technology; so also, size of classroom, sitting position and arrangement, availability of tab.s, chairs, chalkboards, shelves on which instruments for practical are arranged Owoeye and Yara 2011).

According to research, a school's infrastructure, general atmosphere, instructional resources available, and level of instruction all have a big influence on how well students learn agricultural science. Odo and Igwe (2022) assert that a teacher's qualifications and experience are critical to a student's performance in agricultural science. Instructors can more successfully teach the curriculum and include students in learning activities that foster a deeper understanding of

the subject when they have received specialised training and professional development in agriculture. Furthermore, it has been demonstrated that teachers' pedagogical approaches and their capacity to integrate real-world, hands-on experiences into their classes improve students' understanding and retention of agricultural topics (Adekunle and Olaniyi, 2023).

The effectiveness of teaching resources, including textbooks, lab apparatus, and real-world farming instruments, is also a major factor in how well students succeed in agricultural science. Adepoju and Ogundele (2021) state that one of the biggest problems facing many junior secondary schools in Nigeria, especially those in rural regions, is the absence of appropriate instructional materials and resources. Because these resources offer the essential support for both theoretical and practical learning, students in schools with better access to these materials typically do better in agricultural science classes. Similar to this, it has been determined that students' interest in and performance in agricultural science are influenced by the physical learning environment, which includes classroom settings and the existence of a school farm (Olawale and Akinyemi, 2024).

Furthermore, student engagement in agricultural science can be positively or negatively impacted by the general school atmosphere, which includes elements like administrative support, school rules, and extracurricular agricultural activities. Student outcomes can be greatly enhanced by a supportive educational environment that promotes a culture of learning and creativity in agricultural science (Nwosu and Okoro, 2024). In contrast, students typically do worse in this topic in schools with subpar administrative procedures, inadequate teacher support networks, and little extracurricular options in agriculture.

The literature emphasises how critical it is to address these educational issues in order to enhance agricultural science instruction in Nigeria. According to Eze and Chukwu (2023), increasing student accomplishment in agricultural science requires focused interventions that improve the calibre of instruction, offer required instructional resources, upgrade school infrastructure, and foster a supportive learning environment. By investigating the particular school elements influencing agricultural science accomplishment in Nigerian junior secondary schools, this study seeks to expand on previous findings and aid in the creation of more effective teaching strategies and policies.

This research aims to characterize the socio-demographic characteristics of junior secondary school students, document availability and types of instructional materials for agricultural science instruction; identify the school-level factors influencing students' performance and examine the relationships between these school factors and students' performance in agricultural science.

MATERIALS AND METHODS

The study was conducted in Abeokuta North, Southwest, Nigeria in 2023. This study used a descriptive survey research design. Stratified simple random sampling technique was used to select respondents for the study.

Sample frame: The sample frame of this study was 872 students was gotten from the administrative office of the selected schools as summarized below:

Sampling procedure and sample size: Stratified simple random sampling technique was used to select the respondents for the study. The sample size of 274 students was gotten from the sampling frame of 872 using the yamane (1967) equation below;

$$n = \frac{N}{1+N(e)2} \quad \text{..... Equation (i)}$$

n = Total Sample size, N= Sample frame, e=Margin of error (0.05).

Also, the number of questionnaires administered into each classes was determines using the equation;

$$Q = \frac{n}{N} \times P \quad \text{..... Equation (ii)}$$

Q = Number of questionnaire to be administered per class, n = Total sample size, N = Sample frame.

Method of data collection/research instrument: Questionnaire was used to collect data for this study.

Validity and reliability of the research instrument: Face and content validity was used for the study. Also, the reliability of the study was determined using the

Table 1. Sample frame of the study

Variables	Abeokuta capital school	Standard model college	Army day secondary school	Lafenwa high school	Total
Junior secondary school one	18	17	110	152	297
Junior secondary school two	19	20	109	171	319
Junior secondary school three	15	19	102	120	256
Total	52	56	321	443	872

split half reliability method.

Method of data analysis: Both descriptive and inferential statistics was used to analyze the data. Descriptive statistics such as frequency counts, percentages, mean and standard deviation was used to analyze the objectives while Multiple Regression was used to analyzed the hypothesis.

$y = a + b_{1\times1} + b_{2\times2} + \ldots\ldots + b_{kxk}$ --------- Equation (3)

where x_1, x_2, ….x_k are the k independent variables and y is the dependent variable.

Y= Academic performance in agricultural science

a= constant

b 1= human factor

b 2= financial factor

$b_{3=}$ physical/environmental factor

$b_{4=}$ management factor

$b_{5=}$ parent factor

$b_{6=}$ government factor

RESULTS AND DISCUSSION

Socio-demographic characteristics of junior secondary school students: Results reveals that more than half (62.6%) of the respondents were public school students while minority (37.4%) were private school students (Tab. 1). Also, findings shows that mean age of the respondents is 12.40 years, with majority (93.3%) of the respondents fell between ages of 11-15 years. This implies that the disparity in the distribution of respondents from public and private schools provides an opportunity to investigate the performance differences between the two groups. This is in line with Masud *et al*., (2019) that affirm that the disparity in the distribution of respondents from public and private schools provides an opportunity to examine the impact of school type on academic performance. Also, the age distribution of the respondents highlights the importance of considering the developmental stage of students when examining the effect of school factors on their performance. Early adolescence is characterized by physical, cognitive, and socio-emotional changes. These factors can influence students' engagement, motivation, and ability to learn Agricultural Science. Zhao *et al*., (2021) corroborate with his findings that early adolescents are in a critical period of development, and their engagement, motivation, and ability to learn are all influenced by their physical, cognitive, and socio-emotional changes More than half (68.1%) of the respondents were female while minority (31.9%) of the respondent were male which implies that gender distribution is important to consider when examining the effect of school factors on students' performance in Agricultural Science, as it may influence the overall findings. This is in line with Gebre *et al*., (2019) that indicate that girls tend to perform better in Agricultural Science than boys, particularly in areas such as plant science and animal science.

Furthermore, minority (30.4%) was in JSS1, less than half (42.5%) were in JSS 2 and (27.1%) were in JSS 3. The distribution of students across different academic years (JSS1, JSS2, and JSS3) provides information on the stage of education at which the study focuses. This allows for an examination of the effect of school factors on students' performance in Agricultural Science at different points in their educational journey. This is in line with Mehmet (2021) that support the findings that the distribution of students across different academic years can also help to identify differences in the way that school factors influence students' performance in Agricultural Science at different stages of their educational journey

Table 2. Socio-demographic characteristics of junior secondary school students

Variables	Frequency	Percentage	Mean ($\bar{x}$)
School type			
Private	102	37.4	
Public	171	62.6	
Age			
5-10	6	2.2	
11-15	255	93.3	12.40
16-20	12	4.4	
Sex			
Male	87	31.9	
Female	186	68.1	
Class			
JSS 1	83	30.4	
JSS 2	116	42.5	
JSS 3	74	27.1	

Source: Field Survey (2023)

Availability of instructional materials for agricultural science: The responses of the respondent's availability of instructional materials for Agricultural Science were ranked using the mean score. Marker board / Chalkboard with the (mean = 2.90) came 1st. Marker Board/Chalkboard, indicates its significance in teaching Agricultural Science because it allows for visual representation, note-taking, and explanation of concepts, making it a valuable resource for effective instruction. Uchechi (2021) posited that the use of marker board/chalkboard in teaching Agricultural Science has been shown to improve student engagement and understanding of concepts. Also, marker / Chalk availability with the (mean= 2.75) 2nd. Implies that students have the opportunity to participate in activities such as writing, drawing, or solving problems on the board. Abdulkadir (2018) affirm that the use of interactive whiteboards has been linked

to improved student outcomes, including increased engagement, motivation, and understanding of concepts. Students have the opportunity to participate in activities such as writing, drawing, or solving problems on the board, which can help to reinforce their learning. Moreso, the third ranking of the availability of agricultural science textbooks with the (mean =2.01) 3rd implies that there may be room for improvement in terms of availability. Textbooks are essential resources for students to study and understand the subject matter in-depth. Benjamin *et al.* (2018) indicate that there may be room for improvement in terms of availability of textbooks, particularly for students in low-income countries and minority groups. Agricultural science related charts with the (mean= 1.42) 4th. This implies that visual aids are not as widely available or utilized as the Marker Board/Chalkboard and Marker/Chalk. Charts can enhance students' understanding of complex agricultural concepts through visual representation. Atieku *et al*. (2021) affirm that students who used visual aids in their learning activities reported higher levels of engagement and motivation compared to those who did not use visual aids. Agricultural science demonstration farms with (mean=1.40) 5th. This implies that a potential gap in providing hands-on, practical learning opportunities for students, which could be addressed through the establishment or enhancement of such facilities. This is in line with Ingram *et al*., (2018) indicate that many agricultural education programs are struggling to provide these experiences due to a lack of facilities and resources

School factors (human and financial factors) affecting student performance in agricultural science: Human factors were ranked thus; the school workers are well trained on their jobs with the (mean = 3.37) came 1st implying that when school workers are well trained, they possess the necessary knowledge and skills to effectively deliver the curriculum and support students' learning. Linda *et al*., (2020) that affirm the finding that well-trained school worker are better equipped to identify and address the individual needs of students, including students with special needs and English language learners. Also, presence of enough teachers to handle the student's academics comfortably with the (mean = 3.17) came 2nd suggesting that the availability of an adequate number of teachers is important for students' academic performance in Agricultural Science. Karen *et al*. (2018) posited that when there are enough teachers, they can provide individual attention, engage in effective classroom management, and cater to the diverse learning needs of students. Furthermore, school workers are enough for the schools needs with the (mean = 3.02) came 3rd. This implies that having a sufficient number of school workers, beyond just the teaching staff, impacts student performance in Agricultural Science. This may include administrative staff, support staff, and other personnel who contribute to the smooth functioning of the school. Tadese *et al*. (2022) affirm that having a sufficient number of school workers, beyond just the teaching staff, has a positive impact on student performance in Agricultural Science Financial factors were ranked thus; there are projects that support the schools finances with the (mean = 3.32) came 1st. This implies that having additional projects or initiatives in place to generate financial resources positively impacts student performance in Agricultural Science. When schools have access to additional funding through projects, they can allocate resources towards improving infrastructure, acquiring necessary equipment, and enhancing educational programs. Barrett *et al*., (2019) corroborate with the finding that additional funding can be used to improve infrastructure, acquire necessary equipment, and enhance educational programs. The students' academic performance is not affected by financial hitches with the (mean = 3.27) came 2nd. This implies that even if the school faces financial challenges, it does not have a major negative impact on the students' ability to succeed academically. Moore *et al*. (2021) posited that financial challenges

Table 3. Availability of instructional materials for agricultural science

Variables	AA F (%)	AI F (%)	UA F (%)	Mean ($\bar{x}$)	Rank
Marker board / Chalkboard	252(92.3)	14(5.1)	7(2.6)	2.90	1st
Marker / Chalk	229(83.9)	22(8.1)	21(7.7)	2.75	2nd
Agricultural science textbooks	106(38.8)	64(23.4)	103(37.7)	2.01	3rd
Agricultural science related charts	34(12.5)	49(17.9)	190(69.6)	1.42	4th
Agricultural science demonstration farms	27(9.9)	63(23.1)	183(67.0)	1.40	5th

Source: Field Survey, 2023. Available and adequate (AA), Available but inadequate (AI), Unavailable (UA)

Table 4. School factors (human and financial factors) affecting student performance in agricultural science

Variables	SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	Mean ($\bar{x}$)	Rank
HUMAN FACTORS							
The school workers are well trained on their jobs	86(31.5)	68(24.9)	19(7.0)	61(22.3)	39(14.3)	3.37	1st
There are enough teachers to handle the students academics comfortably	76(27.8)	58(21.2)	15(5.5)	84(30.8)	40(14.7)	3.17	2nd
The school workers are enough for the schools needs	59(21.6)	66(24.2)	29(10.6)	59(21.6)	60(22.0)	3.02	3rd
FINANCIAL FACTORS							
There are projects that support the schools finances	39(14.3)	127(46.5)	29(10.6)	38(13.9)	40(14.7)	3.32	1st
The students' academic performance is not affected by financial hitches.	63(23.1)	91(33.3)	22(8.1)	50(18.3)	47(17.2)	3.27	2nd
The school has adequate financial sources	58(21.2)	76(27.8)	53(19.4)	42(15.4)	44(16.1)	3.23	3rd

faced by a school do not necessarily have a major negative impact on students' academic success. The school has adequate financial sources with the (mean = 3.23) came 3rd. This implies that when schools have access to adequate funds, they can invest in various aspects such as instructional materials, technology, laboratory equipment, and extracurricular activities that support learning in Agricultural Science. Afolabi *et al*., (2020) affirm that when schools have access to adequate funds, they can invest in various aspects that support learning in Agricultural Science. ***School factors (physical/environmental and management factors) affecting student performance in agricultural science:*** Physical/ environmental factors were ranked thus; there is a spacious playing ground for the students with the (mean = 3.61) came 1st. This implies that having ample space for students to engage in physical activities positively influences their performance in Agricultural Science. A spacious playing ground provides opportunities for students to participate in sports, recreational activities, and hands-on learning experiences related to agriculture. Riikka (2021) posited that a spacious playing ground provides opportunities for students to participate in sports, recreational activities, and hands-on learning experiences related to agriculture. There are enough classrooms to handle all the students with the (mean = 3.55) came 2nd. This implies that having an adequate number of classrooms is beneficial for student performance in Agricultural Science. Sufficient classrooms ensure that students have Conducive learning environment and can engage in interactive and focused classroom activities. Ong *et al*. (2023) affirm that sufficient classrooms provide students with a comfortab. and focused learning environment, which can enhance their engagement and motivation. Students who have access to well-maintained and well-equipped classrooms are more likely to participate in interactive activities, such as group discussions, role-playing, and hands-on experiments. There is enough dormitories to handle all the students with the (mean=3.25) came 3rd.This implies that having sufficient dormitory facilities positively impacts student performance in Agricultural Science. Adequate dormitories provide a comfortab. and secure living environment for students, especially those who live far away from the school. This is in line with Yangambi (2023) that corroborate with the findings that Students who have access to well-maintained and well-equipped dormitories are more likely to feel relaxed and focused, which can enhance their academic performance. Management factors were ranked thus; the teachers use teaching and learning aids during the lesson with the (mean = 4.04) came 1st. This implies that the utilization of teaching and learning aids positively influences student performance in Agricultural Science. When teachers incorporate visual aids, multimedia resources, hands-on materials, and technology into their lessons, it enhances students' understanding and engagement with the subject matter. Abdul rahaman *et al.* (2020) affirm that utilization of visual aids, multimedia resources, hands-on materials, and technology significantly improved students' understanding and engagement with the subject matter. The teacher uses different teaching methods other than lecturing with the (mean = 3.95) came 2nd. This implies that that employing diverse teaching methods beyond traditional lecturing positively affects student performance in agricultural

Table 5. School factors (physical/environmental and management factors) affecting student performance in agricultural science

Variables	SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	Mean ($\bar{x}$)	Rank
Physical/ Environmental factors							
There is a spacious playing ground for the students	104(38.1)	77(28.2)	16(5.9)	36(13.2)	40(14.6)	3.61	1st
There are enough classrooms to handle all the students	83(30.4)	89(32.6)	6(2.2)	26(9.5)	64(23.4)	3.55	2nd
There is enough dormitories to handle all the students	71(26.0)	69(25.3)	29(10.6)	64(23.4)	40(14.7)	3.25	3rd
Management factors							
The teachers use teaching and learning aids during the lesson	128(46.9)	99(36.3)	6(2.2)	11(4.0)	29(10.6)	4.04	1st
The teacher uses different teaching methods other than lecturing	146(53.5)	58(21.2)	10(3.7)	27(9.9)	32(11.7)	3.95	2nd
The school authorities provide enough teaching and learning aids to enhance learning.	113(41.4)	74(27.1)	38(13.9)	29(10.6)	19(7.0)	3.85	3rd

science. When teachers utilize interactive techniques, group discussions, practical demonstrations, and problem-solving activities, it enhances students' critical thinking, creativity, and active participation in the learning process. This is in line with Muhammad (2021) that supports the finding that when teachers utilize interactive techniques, group discussions, practical demonstrations, and problem-solving activities, it can enhance students' critical thinking, creativity, and active participation in the learning process. The school authorities provide enough teaching and learning aids to enhance learning with the (mean = 3.85) came 3rd. This implies that schools' provision of adequate teaching and learning aids positively influences student performance in Agricultural Science. When schools ensure the availability of resources such as textbooks, laboratory equipment, agricultural tools, and materials for practical activities, it facilitates effective teaching and learning. Adesina and Adeyemi (2019) corroborate with the finding that provision of adequate teaching and learning aids, such as textbooks, laboratory equipment, agricultural tools, and materials for practical activities, positively influenced students' performance in Agricultural Science.

School factors (parent and government factors) affecting student performance in agricultural Science: Parent factors were ranked thus; the Parent involvements in child's education have positive impact on their interest in agricultural science with the (mean = 3.96) came 1st. This implies that hat when parents actively participate in their child's education; it positively influences their interest in agricultural science. Parental involvement can include supporting and encouraging their child's learning, attending school meetings and events, providing resources, and engaging in discussions about agricultural topics. This is in line with Oranga *et al*. (2023) affirm that parental involvement can take many forms, such as supporting and encouraging their child's learning, attending school meetings and events, providing resources, and engaging in discussions about agricultural topics. Family size has impact on students' performance in agricultural science with the (mean = 3.41) came 2nd. This implies the number of siblings or family members within a household can influence students' performance in agricultural science. Family size may affect the amount of individual attention and resources available to each child, potentially impacting their engagement and academic performance. Øyvind and Michael (2022) posited that negative impact of family size on academic performance may be more pronounced for children from low-income families. Occupational choice of parents affects student's interest in agricultural science and conjugal status of parents makes students lose focus on their study thereby causing low students performance in agricultural science with the (mean = 3.37) 3rd. This implies that students may be influenced by their parents professions and the stability of their parents' relationship, which can either positively or negatively affect their focus and academic performance in agricultural science.

Table 6. School factors (parent and government factors) affecting student performance in agricultural science

Variables	SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	Mean ($\bar{x}$)	Rank
PARENT FACTORS							
Parent involvements in child's education have positive impact on their interest in agricultural science.	116(42.5)	92(33.7)	15(5.5)	38(13.9)	12(4.4)	3.96	1st
Family size has impact on students' performance in agricultural science.	86(31.5)	64(23.4)	30(11.0)	62(22.7)	31(11.4)	3.41	2nd
Occupational choice of parents affects students interest in agricultural science.	64(23.4)	91(33.3)	32(11.7)	53(19.4)	33(12.1)	3.37	3rd
Conjugal status of parents makes students lose focus on their study thereby causing low students performance in agricultural science.	61(22.3)	102(37.4)	22(8.1)	53(19.4)	35(12.8)	3.37	3rd
GOVERNMENT FACTORS							
All schools should be mandated to have practical farms as a condition for establishment in order to stimulate students interest in agricultural science.	146(53.5)	55(20.1)	48(17.6)	18(6.6)	6(2.2)	4.16	1st
Creation of Agricultural clubs in school will enhance students interest in Agricultural science.	114(41.8)	106(38.8)	30(11.0)	11(4.0)	12(4.4)	4.10	2nd
Constant review of agricultural science syllabus will enhance students' academic performance.	72(26.4)	87(31.9)	62(22.7)	38(13.9)	14(5.1)	3.60	3rd

Government factors were ranked thus; all schools should be mandated to have practical farms as a condition for establishment in order to stimulate students interest in agricultural science with the (mean = 4.16) came 1st. This implies that the presence of practical farms in schools positively influences students' interest in Agricultural Science. When schools have practical farms, it provides students with hands-on experiences, exposure to agricultural practices, and opportunities to apply theoretical knowledge in a real-world context. Wang *et al.* (2023) corroborate with the finding that school-based agricultural education programs that include practical farms provide students with hands-on experiences, exposure to agricultural practices, and opportunities to apply theoretical knowledge in a real-world context. Creation of Agricultural clubs in school will enhance students interest in Agricultural science with the (mean = 4.10) came 2nd. This implies that the formation of agricultural clubs within schools positively impacts students' interest in Agricultural Science. Agricultural clubs provide a platform for students to engage in extracurricular activities related to agriculture, such as field trips, competitions, research projects, and community service. Kisia *et al*. (2020) affirm that agricultural clubs provided students with opportunities to apply the knowledge and skills they learned in the classroom to real-world situations. Occupational choice of parents affects students interest in agricultural science with the (mean = 3.60) came 3rd. This implies that students may be influenced by their parents' professions, particularly if their parents are involved in the field of agriculture. Ezeani *et al.* (2023) indicate that influence of parents' professions on students' career interests was strongest when parents were directly involved in agriculture, such as farming or ranching.

Performance of students in agricultural science: The performance of students in Agricultural science shows that the highest percentage of students achieved a Good (B) grade (39.2%), followed by credit (C) grades (33.2%), pass (D) grades (18.3%), excellent (A) grades (5.9%), and Failure (F) grades (4.7%). The combined percentages of excellent (A), good (B), and credit (C) grades (78.3%) indicate that a majority of students performed well or met the minimum acceptab. standards in agricultural science. While the majority of

Table 7. Performance of students in agricultural science

Variable	Excellent (A) (70-100) F (%)	Good (B) (60 - 69) F (%)	Credit (C) (50 - 59) F (%)	Pass (D) (40 - 49) F (%)	Failure (F) (30 – 39) F (%)
Grade in agricultural science	16(5.9)	107(39.2)	88(32.2)	50(18.3)	12(4.7)

Source: Field Survey, 2023.

Table 6. Test of relationship between school factors and academic performance

Variables	β	Std. Error	T	p-value	Decision
Human factors	0.040	0.019	2.132	0.034	S
Financial factors	0.033	0.019	1.740	0.083	NS
Physical/ environmental factors	0.021	0.013	1.661	0.098	NS
Management factors	0.078	0.016	4.753	0.000	S
Parent factors	0.002	0.016	0.156	0.043	S
Government factors	0.020	0.021	0.967	0.035	S
Performance of students in Agricultural science	Constant	-	-	0.004	S

Source: Field Survey (2023)

students achieved satisfactory grades, it is important to note that a significant portion received pass (D) grades (18.3%), and a smaller percentage received Failure (F) grades (4.7%). These results indicate that there is room for improvement, and efforts should be made to support students who achieved lower grades and help them progress further. Teachers and educators can use this information to identify specific topics or concepts that students find difficult and develop targeted interventions to address these areas. Understanding the factors contributing to lower grades, such as lack of understanding, inadequate study habits, or limited resources, can inform instructional strategies and support mechanisms. Charity and Maximus (2020) affirm that teachers who used classroom assessment data to inform their instruction were more likely to use a variety of instructional strategies, such as differentiated instruction and technology integration, to support student learning.

Test of relationship between school factors and academic performance: There is no significant relationship between the school factors and academic performance was tested using Multiple Linear Regression. The tab. shows there is significant ($p<0.05$) relationships between human ($\beta=0.040$); management ($\beta=0.078$); parent ($\beta=0.002$); government factors ($\beta=0.020$) and academic performance of the students in agricultural science. Recruiting and retaining qualified teachers, providing professional development opportunities, fostering student motivation, and involving parents and the community in the educational process are essential for enhancing the performance of students in Agricultural Science. This is in line with Llen (2023) that affirm that professional development opportunities for teachers can improve their content knowledge and teaching skills, which in turn can improve student learning outcomes. Also, the significance of management factors emphasizes the significance of efficient and effective educational management practices. It indicates that well-designed curriculum frameworks, strong leadership, appropriate resource allocation, and well-implemented policies are crucial for improving the performance of students in Agricultural Science. Enyiazu (2023) corroborate with the finding that management factors, including curriculum design, leadership, resource allocation, and policy implementation, play a significant role in improving student performance in agricultural science. More also, improvements in human resources and management practices can lead to enhanced student performance (Hamadamin and Atan 2019).

CONCLUSION

This study concluded that government factors such as

mandating schools to have demonstration farms before approval, compulsory establishment of agricultural clubs in school etc. had the greatest influence on the academic performances of students in agricultural science. Also, majority of students performed well or met the minimum acceptab. standards in agricultural science. Therefore, the study recommended that schools should consider establishing and maintaining practical farms as an integral part of their infrastructure in order to create avenue for hands-on exposure of students.
ii. Schools should encourage the creation of agricultural clubs and provide support and resources for their activities
iii. Also, both State and Federal government in collaboration with Ministry of Agriculture and Education should formulate and implement policy framework that will promote school factors for better performance of students in agricultural sciences.
iv. Schools should organize career fairs, guest lectures, and mentoring programs to expose students to various agricultural professions and career pathways

REFERENCES

Abdulkadir, K. 2018. The Effect of Interactive Whiteboard Applications Supported by Visual Materials on Middle School Students' Listening Comprehension and Persistence of Learning. Universal Journal of Educational Research 6(11): 2552-2561

Abdulrahaman, M., D., N. Faruk, A.A. Oloyede, N.T. Surajudeen-Bakinde, L.A. Olawoyin, O.V. Mejabi, Y.O Imam-Fulani, A.O. Fahm and A.L. Azeez. 2020. Multimedia tools in the teaching and learning processes: A systematic review. Heliyon; 6(11):e05312.

Adekunle, T., and O. Olaniyi, 2023. Teachers' pedagogical methods and student achievement in agricultural science in Nigerian junior secondary schools. Journal of Education and Learning. 12(2): 89-101.

Adepoju, A., and K. Ogundele, 2021. Impact of instructional materials on student performance in agricultural science. Nigerian Journal of Educational Research, 15(1), 45-57

Adesina, A., A., and T.A. Adeyemi, 2019. Influence of teaching and learning aids on students' performance in agricultural science in Nigerian secondary schools. Journal of Education and Human Development. 8(1): 1-12.

Afolabi, K., O., E.O. Adesanya, S.B. Shuaib, S.B. Jimoh, 2020. Agricultural Education as Catalyst for Activating Programmes, Acts and Policies for Enhancing Food Security In Nigeria. Sokoto Educational Review. Vol. 22(1):1-19

Alain, G. 2019. Inquiry-Based Learning: Student Teachers' Challenges and Perceptions. Journal of Inquiry & Action in Education. 10(2)

Amao, S. R. and J. Gbadamosi, 2015. Gender disparities and Socio economic factors on learning achievement in Agricultural Science of secondary school students in rural and urban areas of Ogbomoso North local government area of Oyo state. Nigeria. Journal of Education and Practice. 6 (25): 1-5.

Atieku, J., N., S.K. Segbefia and A.O. Gyampoh, 2023. Effect of Audio-visual Aids on Students Understanding: A Comparative Analysis of JHS students in the HoMunicipality. Integrated Journal for Research in Arts and Humanities. 3(5): 46-57

Barrett, P., A. Treves, T. Shmis, D. Ambasz and M. Ustinova, 2019. The Impact of School Infrastructure on Learning; A Synthesis of the Evidence, International Development in focus. 3 (1): 1-71

Benjamin, P., S.Z.M.D. Stephanie, J. Evelyn J.K. Simon, 2018. Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides, World Development. 106: 324-336.

Charity, N., O., and M.S. Maximus, 2020. Teachers' Perspectives on the Use of Differentiated Instruction in Inclusive Classrooms: Implication for Teacher Education. International Journal of Higher Education. Vol. 9(6): 1-15

Eimuhi, J. O. and B.G. Ogedegbe, 2016. The effect of environmental factors in teaching and learning in primary and secondary schools in Edo state of Nigeria. Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 7 (4): 310-317.

Emeya, S. and T.P. Ojimba, 2012. Social benefits of secondary school farms in Rivers state, Nigeria. AFRREV IJAH-An International Journal of Arts and Humanities Bahir Dar, Ethiopia. 1 (4): 274-290.

Enyiazu A. F, 2023. The Problems of Educational Policy Implementation and Its Influence on the Welfare of Teacher Labor Market in Nigeria. Open Access Library Journal. Vol.9 (8), 2333-9721

Ezeani, P.T.C. Ogu, and G.M. Sabboh, 2023. Parental Involvement as Correlate of Career Decision-Making among Secondary School Students in Oyo State, Nigeria. British Journal of Multidisciplinary and Advanced Studies. 4(4): 106–115

Eze, J., and C. Chukwu, 2023. Strategies for

improving agricultural science education in Nigeria. International Journal of Educational Development. 19(4): 233-245.

Gebre G., G., H. Isoda, D.B. Rahut, Y. Amekawa, H. Nomura, 2019. Gender differences in the adoption of agricultural technology: The case of improved maize varieties in southern Ethiopia. Women's Studies International Forum. 76:102264.

Hamadamin, H., H., and T. Atan, 2019. The Impact of Strategic Human Resource Management Practices on Competitive Advantage Sustainability: The Mediation of Human Capital Development and Employee Commitment. Sustainability. 11(20):5782

Ingram, M., L., T.J. Sorensen, B.K. Warnick, R.G. Lawver, 2018. The Influence of School-Based Agricultural Education on Pre service Agriculture Teachers' Choice to Teach. Journal of Agricultural Education. 59(2): 64-78

Karen, A., K. Uta, L. Oliver, G. Richard, T. Ulrich, 2018 Student misbehavior and teacher well-being: Testing the mediating role of the teacher-student relationship, Learning and Instruction. 58: 126-136

Kisia, J., W., G.L. Rebecca, J.S. Tyson and K.W. Brian, 2020. Do Teachers Have the Skills: 21st Century Skills in the Agricultural Education Classroom? Journal of Agricultural Education. 61(4): 127-142

Linda, D., F. Lisa, C. Channa, B. Brigid and David Osher 2020. Implications for educational practice of the science of learning and development, Applied Developmental Science. 24:(2) 97-140

Llen, A, 2023.Teacher learning from continuing professional development (CPD) participation: A socio-cultural perspective, International Journal of Educational Research Open. 4: 100242

Masud, S., S.H. Mufarrih, N.Q. Qureshi, F. Khan, S. Khan and M.N. Khan, 2019 Academic Performance in Adolescent Students: The Role of Parenting Styles and Socio-Demographic Factors – A Cross Sectional Study from Peshawar, Pakistan. Frontier Psychology. 10:2497

Mehmet, O. 2021. Factors Affecting Students' Academic Achievement according to the Teachers' Opinion. Education Reform Journal. 6 (1): 1-18

Moore, A., A. Nguyen, S. Rivas, A. Bany-Mohammed J. Majeika, L. Martinez, 2021. A qualitative examination of the impacts of financial stress on college students' well-being: Insights from a large, private institution. SAGE Open Medicine. 9:20503121211018122.

Nwosu, C., and E. Okoro, 2024. The role of school climate in promoting agricultural science education in Nigeria. Journal of Agricultural Education and Extension. 30(1): 65-78.

Odo, G., and Igwe, J. 2022. Teacher quality and student achievement in agricultural science: Evidence from Nigerian secondary schools. African Journal of Education Studies, 18(3), 112-126.

Olawale, R., and S. Akinyemi, 2024. School environment and its effect on students' interest in agricultural science. Education in Science Journal. 16(2): 150-162.

Okolie, U. C., E.N. Elom and E.E. Inyiagu, 2016. Factors attaching students' performance on basic Technology Junior Secondary School Certificate Examination. Journal of Educational Policy and Entrepreneurial Research. 11 (1): 22- 31.

Ong, S. G. T., Quek, G., C., L. 2023. Enhancing teacher–student interactions and student online engagement in an online learning environment. Learning Environment Research. 26, 681–707

Oranga, J., A. Matere and E. Nyakundi, 2023. Importance and Types of Parental Involvement in Education. Open Access Library Journal. 10: 1-9.

Owoeye, J. S. and P.O. Yara, 2011. A Study of the relationship between class size and educational quality in Ekiti State. Nigeria. Asian Social Science. 7 (7): 64-73.

Øyvind, N., W., G. Michael, 2022. Parents' income and wealth matter more for children with low than high academic performance: Evidence from comparisons between and within families in egalitarian Norway, Research in Social Stratification and Mobility, Volume 79, 100692, ISSN 0276-5624

Puja, M. 2015. Flooding affecting teaching and learning. health.mo.gov/living/img/.

Raccoon gang 2018 What Makes Good Learning Environment. Accessed 28/09/2019 from https://raccoongang.com/blog/what-makes-good-learning-environment/06/04/2018)

Riikka, P. 2021. University students' participation in outdoor recreation and the perceived well-being effects of nature, Journal of Outdoor Recreation and Tourism. Vol.36, 100425, 2213-0780

Tadese, M., A. Yeshaneh and G.B. Mulu, 2022. Determinants of good academic performance among university students in Ethiopia: a cross-sectional study. BMC Medical Education 22, 395

Uchechi B., O. 2021. The Role of Teaching and Learning Aids/Methods in a Changing World. Sofia: Bulgarian Comparative Education Society. 19(6): 1-7

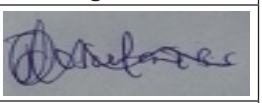
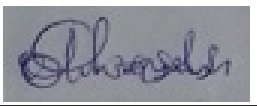
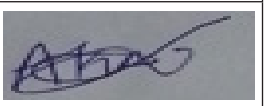
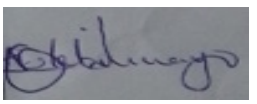
Wang, P., C., J.W.Huang, D.C. Lee, 2023. Participation in Intergenerational Food and

Agriculture Education Programs Effectively Promotes Place Attachment. Internal Journal Environmental Research and Public Health. 20(5):4616.

Yamane, Taro 1967. Statistics, An introductory Analysis, 2nd Ed., New york: Harper and Row.

Yangambi, M. 2023. Impact of School Infrastructures on Students Learning and Performance: Case of Three Public Schools in a Developing Country. Creative Education. 14: 788-809.

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