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Students' perception and attitude to agricultural science subject acceptance in government-owned secondary schools in Edo state, Nigeria

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Abstract

This study investigated students' perceptions and attitudes to Agricultural Science acceptance in government-owned upper secondary schools in Edo State, Nigeria. The Theory of Planned Behavior was used to explain how attitudes, subjective norms, and perceived behavioral control influence students' intentions and behaviors. An ex-post factor design and a survey method were used to collect data from 395 students selected by multi-stage sampling. The results showed that students have a positive attitude and perceive ease in accepting Agricultural Science. The study found that students' perceived ease or difficulty in accepting Agricultural Science can influence their attitude to choose the subject. The study concludes that stimulating students' positive perception and attitude towards Agricultural Science can influence them to choose agriculture as a career, strengthening the future agricultural workforce for sustainable food security in Nigeria. Recommendations include raising awareness about career opportunities in agriculture and providing adequate funding for modern farming equipment and resources in schools.

Keywords: Acceptance; Agricultural Science; Attitude; Government-owned Schools; Perception; Subjective Norm

1. Introduction

Nigeria's agricultural sector is vital to its economic development, employing many young Nigerians and contributing to food security and economic growth. Despite the oil sector's dominance, agriculture remains crucial, with the National Bureau of Statistics (NBS) reporting its significant contribution to Nigeria's economic progress in 2021 (15.83%) and 2022 (15.41%) [1]. However, the future agricultural workforce faces challenges, including low enrollment in Agricultural Science courses and a negative perception of agriculture as a career choice [2]. This suggests that more efforts are needed to redirect the mindset of young people to sustain the agricultural workforce by accepting Agricultural Science as a subject, particularly in government-owned secondary schools in Edo State, Nigeria. The government-owned secondary schools are formal educational institution set up for teaching and learning purposes in the study area. These institutions also offer Agricultural Science as a subject.

In Nigeria, Agricultural Science is an optional subject at upper secondary schools, aimed at equipping students with knowledge and skills in agriculture. The subject's objectives include training students in basic agricultural knowledge and skills, promoting creative thinking, and preparing them for global competitiveness [3,4,5]. To achieve these objectives, students must develop an interest and a positive attitude towards Agricultural Science. Despite this, students' perception and attitudes toward the subject have been a concern, with research showing that students' attitude is often negative towards Agricultural Science [6,3,7,4,8,5].

Perception and attitude play crucial roles in shaping students' choices, influenced by factors such as parental advice [9,10], peer influence [11], and career aspirations [12,13]. Agriculture encompasses various aspects beyond farming,

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contributing significantly to a nation's economy [14]. To promote Agricultural Science in secondary schools, students must develop an interest and a positive attitude, encouraged by effective teaching strategies [7] and adequate learning facilities [6,7]. This suggests that there is a gap exacerbated by a declining attitude to improve Nigeria's agriculture beyond the classroom.

Consequently, Nigeria has been left behind in the quest for improvement in agriculture, with attention shifting from agriculture to crude oil production. However, recent times have seen a need to increase food production due to food insecurity experiences in Nigeria [15]. Concerted efforts are needed to encourage the emerging agricultural workforce, who are mostly upper secondary school students, to choose Agricultural Science. The study believes that studying agriculture at the upper secondary school level will develop students' basic knowledge and skills in agriculture, thereby breeding a future workforce in the industry. More so, identifying the factors that could lead to student ease or difficulty in accepting Agricultural Science as subject is equally crucial as that of their positive or negative evaluation of their attitude to the development of Agricultural education and subsequent future workforce in Edo State, Nigeria.

1.1. Theoretical Framework

The theoretical framework of this study is grounded on the Theory of Planned Behavior (TPB) developed by Icek Ajzen [16]. The TPB can help explain students' perceptions and attitudes to Agricultural Science. Addressing factors contributing to declining interest in Agricultural Science is essential to ensure a sustainable workforce and food security [17,2]. The TPB explains how attitudes, subjective norms, and perceived behavioral control influence individuals' intentions and behaviors [18].

In Edo State, government-owned secondary schools face similar challenges, with the state's agricultural sector having significant potential but hindered by limited skilled labor and low adoption of modern agricultural practices occasioned by students' non-acceptance of agriculture as a career. With the strategic contributions of agriculture to the nation's economy, it is essential to encourage and motivate younger generations to take agriculture as a career [19]. Therefore, this study aims to investigate students' perceptions and attitudes to agricultural science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria, to promote a sustainable agricultural workforce and food security.

1.2. The Purpose of the Study

This study was designed to assess student's perception and attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria. Specific objectives include to:

- Assess students' perception of Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria;
- Examine students' attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria; and
- Determine the relationship between students' perception and their attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria.

1.3. Research Questions

The study is therefore designed to provide answers to the following research questions:

- What is students' perception of Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria?
- What is students' attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria?
- What is the relationship between students' perception and their attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria?

2. Methodology

This study was conducted in Edo State, Nigeria, located in the southern part of the country, with a latitude of 5° 30' - 7° 30' N and longitude of 5° 30' - 6° 30' E. Edo State is divided into three senatorial districts, comprising 18 Local Government Areas (LGAs), and covers an area of approximately 17,802 square kilometers. An ex-post facto research design, employing the survey research approach, was used to assess the thoughts, opinions, and feelings of government-owned secondary school students regarding their acceptance of Agricultural Science as a subject [20].

The study's population consisted of 33,563 upper secondary class two students. A multi-stage sampling approach was adopted to stratify the population into the three senatorial districts (Edo Central, Edo North, and Edo South) and subsequently sample different proportions of the 18 Local Government Areas. Sixty-three schools were selected, representing 20% of the population of schools in the 18 LGAs of Edo State. A sample of 395 students was drawn from the total student population (N=33,563) using the 1967 Taro Yamane formula.

A 44-item structured questionnaire, developed from the study reviewed literature, was utilized as the instrument for the study. The instrument underwent face and content validity assessments by three experts. Cronbach's Alpha was employed to determine the reliability of the items in the questionnaire, yielding an alpha (α) coefficient of 0.76 for the entire instrument.

Primary data were collected through questionnaire administration and analyzed using descriptive statistics, mean scores, and a 4-point agreement-to-disagreement scale. Data were analyzed using mean ($\bar{x}$) and standard deviation to answer study research questions 1 and 2, and Pearson Product Moment Correlation Coefficient to respond to research question 3. The acceptance benchmark point for the items was set at 2.50; mean scores ($\bar{x}$) above 2.50 indicated agreement, while scores below 2.50 indicated disagreement for research questions 1 and 2. For research question 3, a calculated r-value higher than the critical r-value indicated a significant positive relationship.

3. Results

3.1. Research Question 1

What is the student's perception of Agricultural Science acceptance in government-owned secondary schools in Edo State, Nigeria?

Table 1 Mean Score of Student's Perception of Agricultural Science as a Subject (N = 390)

S/No	Item	Mean ($\bar{x}$)	SD	Decision
1	Mentorship influences students	3.57	0.65	Agreed
2	Lack of practical equipment influences students' thought about Agricultural Science	3.24	0.89	Agreed
3	There is no prospect in Agricultural Science as a subject	1.40	0.84	Disagreed
4	There are tedious practicals in Agricultural Science	3.67	0.59	Agreed
5	Agricultural Science is not very difficult to understand	3.65	0.57	Agreed
6	Agricultural Science deals with abstract concepts which are related to real-life situations	3.56	0.66	Agreed
7	My parents' background influences my ideas about Agricultural Science	3.34	0.80	Agreed
8	My Parents' influence affects my ideas about Agricultural Science	1.60	0.53	Disagreed
9	Contact with professionals influenced my thoughts about Agricultural Science	3.48	0.65	Agreed
10	Career flexibility influenced my thought about Agricultural Science	3.62	0.59	Agreed
11	Gender influences my thoughts about Agricultural Science	3.47	0.65	Agreed
12	Personal decisions influence my thoughts about Agricultural Science	3.68	0.47	Agreed
13	Agriculture as a profession is lucrative	3.67	0.51	Agreed
14	Agriculture serves as a stepping stone to another career	3.64	0.55	Agreed
15	Agricultural Science is not necessary in life as it does not prepare one for the world of work	1.17	0.91	Disagreed
16	Agriculture is all about farming	1.55	0.62	Disagreed
17	There is no lack of employment in the sector	3.48	0.77	Agreed

18	Agriculture has poor wage income	1.34	0.80	Disagreed
19	Agriculture requires high starting capital	1.45	0.77	Disagreed
20	Agricultural Science as a subject has a tedious nature of its practical	3.37	0.84	Agreed
21	Agriculture has poor societal value	2.93	1.05	Agreed
22	Agricultural Science as a subject requires intensive labour	3.62	0.46	Agreed

Table 1 shows the distribution of respondents based on their perception of Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State. The responses revealed that 14 out of 22 items had a mean score ranging from 2.93 to 3.68, exceeding the criterion mark of 2.50. This indicates that factors like personal decision-making (x=3.68), the practical nature of the subject (x=3.67), and agriculture being seen as a lucrative profession (x=3.67) contribute to the perceived ease of accepting Agricultural Science. However, six items had mean scores ranging from 1.17 to 1.60, falling below the criterion mark. These items included perceptions that Agricultural Science is unnecessary (x=1.17), offers poor wages (x=1.34), and lacks prospects (x=1.45). The mean responses demonstrated that the perceived difficulty of accepting Agricultural Science is influenced by subjective norms. The standard deviation (SD) for all items ranged from 0.34 to 1.05, signifying that the mean responses were relatively close to each other.

3.2. Research Question 2

What is students' attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria?

Table 2 Mean Score of Student's Attitude to Agricultural Science Acceptance as a Subject (N = 390)

S/No	Item	Mean ($\bar{x}$)	SD	Decision
1	I am good at Agricultural Science	2.97	0.94	Agreed
2	I don't get easily bored studying Agricultural Science	3.36	0.68	Agreed
3	I always look forward to our Agricultural Science class	2.90	1.06	Agreed
4	I don't have hatred for Agricultural Science teachers	2.51	0.13	Agreed
5	My Agricultural Science teacher is always friendly in class	1.79	0.18	Disagreed
6	I don't have a hatred for Agricultural Science as a subject	2.51	0.24	Agreed
7	I would like to drop Agricultural Science as a subject	2.59	1.11	Agreed
8	I always buy the recommended Agricultural Science textbooks	1.87	1.07	Disagreed
9	Agricultural Science is not too difficult for me compared to other subjects	2.67	0.25	Agreed
10	I have enough time to study Agricultural Science at home	2.50	0.13	Agreed
11	If I put in more effort, I will perform well in Agricultural Science	2.50	0.13	Agreed
12	I can be a good Agricultural scientist	2.57	0.16	Agreed
13	I refuse to spend a lot of my time doing Agricultural Science	2.31	0.16	Disagreed
14	I feel challenged and excited when I am given a difficult task in Agricultural Science to perform	1.55	1.10	Disagreed
15	Carrying out Agricultural Science tasks with my classmates and peers makes me happy	2.69	0.16	Agreed
16	I don't like to be involved in Agricultural practical	2.18	1.08	Disagreed
17	Agricultural Science helps one to think according to strict rules	2.59	0.15	Agreed
18	I don't want to choose agriculture as a career	2.41	1.01	Agreed

19	I do not want to study Agricultural Science	2.82	1.06	Agreed
20	I like to run away from Agricultural Science class	1.64	0.23	Disagreed
21	There is little room for originality in Agricultural Science	3.00	1.06	Agreed
22	All students can learn complex Agricultural Science concepts if they are properly taught	2.71	0.17	Agreed

Table 2 presents the distribution of respondents' attitudes towards Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State. The responses revealed that 16 out of 22 items had mean scores ranging from 2.51 to 3.36, exceeding the criterion mark of 2.50. This indicates that respondents' positive evaluations of accepting Agricultural Science as a subject can be measured by attitudes such as finding the subject engaging (x=3.36), appreciating the subject's structure (x=3.00), and feeling proficient in the subject (x=2.97). However, six items had mean scores ranging from 1.55 to 2.41, falling below the criterion mark. These items included negative evaluations such as feeling unchallenged (x=1.55), disliking the subject (x=1.64), and perceiving the teacher as unfriendly (x=1.79). The mean responses demonstrated that intentions to choose Agricultural Science are influenced by negative attitudes towards the subject. The standard deviation (SD) for all items ranged from 0.13 to 1.11, signifying that the mean responses were relatively close to each other.

3.3. Research Question 3

What is the relationship between students' perception and their attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria?

Table 3 Relationship Between Students' Perception and their Attitude to Agricultural Science Acceptance as a Subject

Variable	Mean	Std	df	rCal.	rCrit.	p-value	Remark
Students' Perception	3.41	0.73	288	0.12	0.09	0.05	Significant
Students' Attitude	2.97	0.94					

Correlation is significant at the 0.05 level (2-tailed); **Key:** N= Number of respondents, rCal = Calculated Correlation, rCrit.= Table value of Correlation.

The data in Table 3 revealed a mean and standard deviation of 3.41 ± 0.73 for students' perception and 2.97 ± 0.94 for students' attitudes. The calculated correlation coefficient (r) was 0.12, exceeding the critical value (r) of 0.09 with a degree of freedom (df) of 288 at a p-value of 0.05. Since the calculated r-value surpassed the critical r-value, a significant relationship exists between students' perception and attitude to Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria. This indicates that students' perceived ease or difficulty in accepting Agricultural Science as a subject can significantly influence their attitude toward choosing the subject.

4. Discussion of Findings

4.1. Students' Perception of Agricultural Science Acceptance as a Subject

The findings in Table 1 indicate that students' perception of Agricultural Science acceptance as a subject in government-owned secondary schools in Edo State, Nigeria is influenced by factors such as personal decision, the practical nature of the subject, and the perception of agriculture as a lucrative profession. This suggests that students generally perceive ease toward Agricultural Science acceptance. However, this finding contradicts the low level of student awareness and misconceptions about careers in agriculture reported by [21]. [22] support this, highlighting the need for targeted interventions and career guidance to address students' misconceptions and increase interest in agricultural careers.

4.2. Student's Attitude to Agricultural Science Acceptance as a Subject

The findings in Table 2 show that students' attitude to Agricultural Science acceptance as a subject is determined by factors such as interest in the subject, perceived usefulness, and ability. This finding aligns with [23], who reported that these factors contribute to student selection of subjects. These key factors influence students' attitude to accept Agricultural Science as a subject.

4.3. Relationship Between Students' Perception and their Attitude to Agricultural Science as a Subject

The finding in Table 3 indicates that students' apparent ease or difficulty in accepting Agricultural Science as a subject influences attitude toward choosing the subject. This aligns with [10], who found that students with positive perceptions of agricultural courses tend to have a encouraging attitude toward Agricultural Science. In support, [22] stated that apparent behavioral control moderated the connection between the predictors and intentions of respondents based on engagement. These finding demonstrated that students' perceived behavior is associated to attitude in either accepting or rejecting Agricultural science as a subject.

5. Conclusion

The perceived ease or difficulty of Agricultural Science acceptance as a subject is influenced by subjective norms, which change over time. Students' attitude to Agricultural Science acceptance is also influenced by factors such as interest and perceived usefulness. The perceived ease or difficulty of acceptance is positively related to their attitude towards choosing the subject as a future career. Therefore, stimulating positive perception and attitude toward Agricultural Science could influence students to choose agriculture as a career, strengthening the future agricultural workforce for sustainable food security in Nigeria.

Recommendations

Based on the findings, the following recommendations are made:

- Create awareness among secondary schools about areas of specialization and career opportunities in agriculture;
- Provide funds for government-owned secondary schools to purchase modern farming tools and equipment; and
- Encourage students to form Young Farmers Clubs and engage in farming enterprises to stimulate interest in agriculture.

Compliance with ethical standards

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Disclosure of conflict of interest

The Author declares that he has no conflicts of interest for this article.

Statement of informed consent

Consent to collate the opinion of upper secondary students from Edo State government-owned schools was given by the school principals and each respondent before the instrument was administered.

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