SMALLHOLDER FARMERS' PERCEPTION OF SUSTAINABLE AGRICULTURAL PRACTICES (SAP) IN ILORIN EAST LGA, KWARA STATE, NIGERIA

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ABSTRACT

The study examined Smallholder farmers' perception of sustainable agricultural practices (SAP) in Ilorin East LGA, Kwara State, Nigeria. The study specifically examined the socio-economic characteristics of respondents, identified farmers' sources of information on SAP, examined farmers' perception of SAP, and identified the constraints faced by farmers in the adoption of SAP. Using a multistage sampling procedure, a total of 175 smallholder farmers were sampled. The primary data was obtained through interview schedule. The obtained data collected were analysed using descriptive statistics such as frequency count, percentages, mean, and standard deviation; and inferential statistic used was Logit regression. The mean age was 43.2 years with standard deviation of 10.4, and majority were males (63.4%) and married (61.7%). Only 12.5% lacked formal education, a total of 87.4% had formal education and extension agency (86.2%) was the most common source of information on SAP. Respondents had a favourable perception towards SAP such as low chemical input (±4.51), minimise adverse effects on health, safety, wildlife, water quality and environment (±4.42) and abundant food production without depleting the earth's resources (±4.41). Foremost constraints include …Lack of awareness of SAPs (M = 2.73) and Lack of adequate capital for SAPs (M= 2.70). It is therefore concluded that most of the farmers perceive SAPs as beneficial, with only a few disagreeing and their main. sources of information on SAPs are extension agencies, providing farmers with accurate and relevant information to improve farmers' understanding of SAPs, their benefits and implementation by Ministry of Agriculture and relevant Agricultural agencies is recommended.

Keywords: Sustainable Agricultural Practices (SAP), smallholder farmers, perception and extension Services.

INTRODUCTION

Agriculture is a crucial driver of economic growth and progress, especially in developing countries where most people rely on it for their income and sustenance. Smallholder farmers produce most of the food in low-income and developing countries, forming the backbone of Nigeria's food supply (Chiaka *et al*., 2022). Agriculture provides food for the population, ensuring food security and reducing dependence on imports. However, the sector faces numerous challenges, including climate change, soil degradation, and economic instability. To address these challenges and ensure long-term agricultural sustainability, the perception of sustainable agricultural practices is essential. Sustainable agricultural practices encompass a range of techniques and approaches aimed at maintaining or enhancing agricultural productivity while minimising negative environmental impacts (Food and Agriculture Organisation, 2020). These practices include organic farming, agroforestry, integrated pest management, conservation agriculture, and efficient water management, among others. Agricultural Intensification can lead to environmental degradation and decreased crop yields if not managed sustainably.

Soil degradation particularly top soil removal, has far-reaching consequences for both soil productivity and environmental health, exacerbating land degradation, disrupting nutrient cycling and impacting biodiversity Jose Telo da Gama's (2023). Farmers' perception of sustainable agriculture is a crucial aspect of promoting environmentally friendly practices.

A study by R. G. Adeola and S. I Adetunbi (2022) found that smallholder farmers in South-Western Nigeria perceive sustainable agriculture as a profitable venture that can provide a healthy family income and improve the rural economy. They realized its potential as an alternative to industrial agriculture, which often favors rich farmers at the expense of poor ones. These studies highlight the importance of understanding farmers' perceptions and contexts to promote sustainable agriculture effectively.

Smallholder farmers in sub-Saharan Africa have varying perceptions about sustainable agricultural practices (SAPs). While some see the benefits, others have negative perceptions. Many smallholder farmers lack knowledge about SAPs, which influences their perception of these practices. According to Ally Sithole and Oluwasogo David Olorunfemi's (2024) study, challenges such as land tenure insecurity, lack of knowledge, and training shape farmers' perceptions.

Some farmers perceive SAPs like conservation tillage and agroforestry as labor-intensive. A study by Sithole and Olorunfemi, 2024) found that smallholder farmers in Nigeria had negative perceptions about conservation agriculture due to its perceived labor requirements.

Many smallholder farmers prefer traditional farming practices, which they are familiar with. This preference can lead to negative perceptions about SAPs, which are seen as unfamiliar or complicated.

According to Danso-Abbeam *et al*. (2022), Ghanaian farmers showed a strong preference for traditional seed varieties, indicating a potential bias towards familiar practices.

This study is justified by the urgent need to address environmental degradation caused by unsustainable agricultural practices. Smallholder farmers often rely on traditional farming methods that involve excessive use of chemical fertilizers, pesticides, and improper land management techniques. These practices contribute to soil erosion, water pollution, loss of biodiversity, and greenhouse gas emissions. By examining their perception of sustainable agricultural practices, this study can identify effective strategies to mitigate environmental degradation and promote sustainable resource management.

The findings of this study will contribute to evidence-based policy recommendations to overcome perception barriers and promote sustainable farming in the region. Additionally, this study is justified by the potential for knowledge transfer and capacity building. By conducting thorough research on smallholder farmers' perception of sustainable agricultural practices, valuable insights can be generated for dissemination among farmers, agricultural extension workers, and other stakeholders.

The objectives of the study are as follows:

1. examine the socio-economic characteristics of the respondents;
2. identify farmers' sources of information on SAP;
3. examine smallholder farmers' perception of SAP in the study area;
4. identify the constraints to the perception of SAP in the study area.

METHODOLOGY

The research was carried out in Ilorin East Local Government Area (LGA) in Kwara State, Nigeria. The research employed a multi-stage sampling procedure to select participants. In the first stage, Ilorin East LGA was purposively selected in order to understand specific challenges, opportunities, and cultural context that shape smallholder farmers' perception of SAPs. In the second stage, five (5) villages were randomly selected from Ilorin East LGA, namely, Oke-oyi, Oloje, Ogidi, Isale Osin, and Okelele villages. In the third stage, a simple random sampling was used to select 40% of the registered smallholder farmers from each of the five randomly selected villages in Ilorin East LGA to give a total of One Hundred and seventy-five (175) respondents. The comprehensive breakdown of the total number of selected participants for the study includes: Oke-oyi = 58, Oloje = 29, Ogidi = 25, Isale Osin = 28, and Okelele = 35. The list of registered smallholder farmers was obtained from the Kwara State Agricultural Development Project (ADP), Nigeria. An interview schedule was used for data collection. The data were elicited through an interview schedule and analysed using both descriptive and inferential statistics such as frequency counts, percentages, means, ranks, charts and Logit regression.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Results from Table 1 reveals that a higher proportion were males (63.4%) compared to females (36.6%), This implies that majority of the smallholder farmers in the area are male, a fact that suggests that males are more involved in farming than their female counterparts in the study area. The Respondents' age distribution shows that majority (44.0%) of the respondents are within the age of 31-40 years (22.3%) between 41-50 years, while the mean age was 43.2 years, Which implies that most of the smallholder farmers sampled are in their productive age and this is expected to have a positive influence on their level of perception of various sustainable agricultural practices, this is in line with the study of Danso-Abbeam *et al.* (2022) who found out that farmers' perception of SAPs are influenced by factors such as age. In terms of Marital status, (61.7%) of the respondents were married, suggesting that most respondents were responsible and knowledgeable in their perception of sustainable agricultural practices in respect to farming in the study area. Regarding educational attainment, About 12.5% of the respondents had no formal education with 44.5%, 34.9%, and 8.0% of the respondents having primary, secondary and tertiary education respectively. This suggests that most of the farmers in the study area are moderately literate which shows that they may have a better understanding of SAPs leading to a more positive perception, Muma *et al*., (2022) found out that education and knowledge of SAPs can influence perception. Majority (61.1%) of the respondents have more than 15 years of farming experience, implying most of the respondents have extensive farming experience; hence farmers are more likely to make choices that will boost their output and income. Furthermore, majority (73.1%) of the respondents were not registered members of any cooperative society while the remaining (26.9%) were registered members Alalade et. al. (2019) in their study asserts that most of the activities carried out in agricultural production are influenced by membership of formed group and so, creating an enabling environment for farmers to have access to come up with innovative ideas on sustainable agricultural practices to solving problems regarding agricultural production as well as make key decisions that affects them. The implication for respondents not belonging to any cooperative society is that they only get to handle challenges in agricultural production singly since they operate at individual level. This could lead to inefficiency in the allocation and use of resources consequently leading to low production.

Table 1: Socio-economic characteristics of the respondents (n=175)

Variables	Category	Percent
Age (in years)	≤ 30	9.14
	31 – 40	44.0
	41 – 50	22.3
	51 – 60	13.1
	> 60	11.4
Mean Age		43.2
Gender	Male	63.4
	Female	36.6
Marital Status	Single	16.5
	Married	61.7
	Widowed	16.0
	Divorced	5.71
Educational Level	No formal education	12.5
	Primary education	44.5
	Secondary education	34.9
	Tertiary education	8.0
Years of Experience	≤ 4	7.4
	5 – 9	12.6
	10 – 14	18.9
	15 – 19	32.0
	≥ 20	29.1
Cooperative Membership	No	73.1
	Yes	26.9
Total		100.0

Farmers' sources of information on SAPs

The results in Table 2 shows the distribution of respondents based on their sources of information on sustainable Agricultural practices. The findings show that extension agency (86.2%) was the most prominent and reliable source of information on sustainable agriculture practices in the study area. The finding is in line with Arowosegbe *et al.* (2024) who reported that extension workers bridge the gap between research, innovation and on-the-ground farming practices, enhancing productivity, promoting sustainability and encouraging the diffusion of innovative technologies.

This result was closely followed by radio (79.4%) indicating that extension agents and radio were the primary sources of information on sustainable agricultural practices in the study area. This finding is in consonant with Madugu *et al.* (2024) where it was observed that radio remains the most cost-effective means of building awareness on new farming practices for small-scale farmers for sustainable development and sustainability in agriculture.

More than half (56%) of the farmers reported television and fellow farmers (51%) as their sources of information on SAP. These findings supported the view of Manzano (2022) that the rise in farmers preferring other famers as a firsthand information source may be due to the ineffectiveness of public extension services in developing countries. The print media (12.6%) and bulletins (26.3%) were not important sources of information often used by the respondents, this is not surprising as a good number of the respondents had low level of education, therefore were not able to read.

Family and friends (38.9%), non-governmental organisation (36.0%), Agro dealers (27.4%), Mobile phone (22.3%), Field Day (10.8%) had low utilisation rates of information sources on SAPs which may be due to factors such as limited coverage and inadequate resources (Kibirige, 2023).

Farmers' perception of SAPs

Table 3 presents the perception of farmers regarding sustainable agricultural practices (SAPs). The results show that most respondents had a generally positive outlook, as reflected in the response patterns.

The statement "using SAPs has reduced how much I depend on chemicals, and I feel better about what I grow" received the highest support, with 66.5% strongly agreeing and 21.4% agreeing, while only 3.7% disagreed and none strongly disagreed. This indicates that farmers clearly associate SAPs with reduced chemical use, a perception consistent with the environmental advantages of SAPs highlighted by Pretty *et al.* (2022), who emphasised their role in minimising chemical pollution.

Table 2: Farmers' sources of information on SAPs

Sources of Information	No (%)	Yes (%)
Extension agency	13.8	86.2
Radio	20.6	79.4
Television	44.0	56.0
Non-governmental organisation	64.0	36.0
Fellow farmers	49.1	50.9
Family and friends	61.1	38.9
Print media	87.4	12.6
Bulletin	73.7	26.3
Field day	89.2	10.8
Mobile phone	77.7	22.3
Agro-dealers	72.6	27.4

Similarly, for "I feel safer and more confident knowing that SAPs help protect my health, my water, and the environment around me", 51.4% strongly agreed and 34.3% agreed, showing strong support. Only 3.4% disagreed and 0.6% strongly disagreed, reflecting a high level of awareness about SAPs' positive contributions to health and the environment. This finding aligns with WHO (2022), which pointed out the public health benefits of sustainable agricultural practices.

The statement "I feel that SAPs help me produce enough food without destroying the land or harming nature" was also well received, with 56.4% strongly agreeing, 28.4% agreeing, and no respondents expressing disagreement or strong disagreement. This suggests that farmers recognize SAPs' potential to promote long-term food security, corroborating the position of FAO (2022) on the role of sustainable practices in safeguarding future food supplies. On the other hand, perceptions were less positive regarding economic and productivity aspects. The statement "I feel more financially secure because SAPs give me a steady and dependable income provide adequate and dependable income" saw 38.4% strongly agreeing and 42.0% agreeing, but 19.6% were neutral, and no respondents expressed disagreement. The neutral stance points to some uncertainty about whether SAPs can consistently deliver reliable income, a concern that may stem from market challenges or transitional costs associated with adopting sustainable methods.

Most notably, the statement "I have noticed that SAPs make my work more productive and efficient" attracted the lowest support: only 4.8% strongly agreed and 14.0% agreed, while 24.0% disagreed and 35.0% strongly disagreed. This suggests that farmers largely do not see SAPs as directly improving productivity or operational efficiency. Such skepticism might be due to limited access to modern technologies or insufficient extension support, an issue similarly highlighted by Pretty *et al*. (2022), who reported that productivity gains in sustainable systems often depend on supportive policies and infrastructure.

Table 3: Farmers' perception of sustainable agricultural practices

Statements	SA	A	N	D	SD
I feel that SAPs help me produce enough food without destroying the land or harming nature	56.4	28.4	15.2	0	0
I believe that practicing SAPs allows me to protect the environment and conserve what we have	45.0	41.0	10.0	3.1	0.9
Since I started using SAPs, I feel my family's life has become more stable and fulfilling	41.8	40.1	14.3	3.0	0.8
I have noticed that SAPs make my work more productive and efficient	4.8	14.0	22.2	24.0	35.0
Using SAPs has reduced how much I depend on chemicals, and I feel better about what I grow	66.5	21.4	8.4	3.7	0
I feel more financially secure because SAPs give me a steady and dependable income	38.4	42.0	19.6	0	0
With SAPs, I use fewer non-renewable resources and spend less on farm inputs, which makes things easier for me	41.8	39.4	12.6	5.1	1.1
I see SAPs as a chance to explore new and profitable opportunities for both myself and my customers	39.1	38.9	14.3	6.3	1.4

I feel safer and more confident knowing that SAPs help protect my health, my water, and the environment around me	51.4	34.3	10.3	3.4	0.6

SA- Strongly Agree, A- Agree, N- Neutral, SD- Strongly Disagree, D- Disagree

Constraints to the perception of sustainable agricultural practices

Results in Table 4 reveals that respondents identified several constraints limiting the respondents' perception of sustainable agricultural practices in the study area. From the results using mean score to rank the constraints level according to their order of severity as indicated by the respondents, the highest rated challenge was Lack of awareness of SAPs with a mean score of 2.73 was ranked 1st and categorised as severe constraint. Farmers may prioritize conventional practices over SAPs due to their lack of awareness. This supports the findings of Mgomezulu *et al*., (2023) which suggests that farmers' limited understanding and awareness of SAPs benefits can serve as a constraint to their perception Also, "Lack of adequate capital for SAPs with a mean score of 2.70 ranked 2nd, Financial constraints can limit farmers' ability to invest in SAPs, affecting their perception of feasibility. Bwalya *et al.*, (2023) also noted that limited financial resources can hinder farmers' ability to invest in SAPs Inadequate knowledge of SAPs with a mean score of 2.69 ranked 3rd, insufficient understanding of SAPs can lead to negative perceptions of SAPs. Research by Nkomoki *et al.*, (2022) emphasised the importance of knowledge and education in promoting SAPs, Little or no government economic incentive with a mean score of 2.66 ranked 4th. The lack of Government incentives can create financial barriers, making it difficult for smallholder farmers to invest in sustainable practices (Nkegbe *et al.*, 2022; Awotide *et al*., 2022). "Low literacy level (MS = 2.61)", "Inadequate extension SAPs content (MS = 2.59)", and "Climatic factors do not support SAPs (MS = 2.42)" "Unavailability of required input (MS =1.99)" "Land tenure system that does not support SAPs (MS =1.72)" "Little or no contact with extension agent (MS =1.49)" ranked 5th, 6th, 7th, 8th,9th and 10th respectively. These constraints highlight the need for targeted interventions to support smallholder farmers' perception of SAPs. As noted by FAO (2022), strengthening extension services and improving access to relevant information and inputs are critical for promoting SAPs,

Table 4: Constraints to the Perception of Sustainable Agricultural Practices

Constraints	Very Severe (%)	Severe (%)	Not Severe (%)	Mean	Rank
Lack of awareness of SAPs	58.5	31.3	10.2	2.73	1st
Lack of adequate capital for SAPs	52.4	33.2	14.4	2.70	2nd
Inadequate knowledge of SAPs	49.9	39.9	10.2	2.69	3rd
Little or no government economic incentive	44.3	30.2	25.5	2.66	4th
Low literacy level	36.7	31.4	31.9	2.61	5th
Inadequate extension SAPs content	35.7	31.0	33.3	2.59	6th
Climatic factors do not support SAPs	33.3	29.9	36.8	2.42	7th
Unavailability of required input	29.7	48.5	21.8	1.99	8th
Land tenure system that does not support SAPs	19.9	22.7	57.4	1.72	9th
Little or no contact with extension agent	12.8	29.8	57.4	1.49	10th

CONCLUSION AND RECOMMENDATIONS

The study concludes that most smallholder farmers are in their productive age, moderately educated, and experienced, but limited by low cooperative participation, which restricts access to resources and support. While farmers generally perceive sustainable agricultural practices (SAPs) as beneficial, challenges such as a lack of awareness and limited capital hinder their adoption. It is therefore recommended that agricultural extension services be strengthened, farmers be given better access to credit and inputs, and awareness campaigns be intensified to promote a more accurate understanding and adoption of Sustainable Agricultural Practices (SAPs).

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