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Access to Agricultural Extension Information and Agricultural Development among Rural Farmers in Sagamu Local Government Area, Ogun State, Nigeria

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Abstract
This study examined access to agricultural extension information and its relationship with agricultural development among rural farmers in Sagamu Local Government Area, Ogun State, Nigeria. A survey design was adopted. Multistage sampling was used to select 120 respondents from six farming communities. Data were collected with a structured questionnaire and analysed using descriptive statistics, chi-square tests and Pearson product-moment correlation. Most respondents were male (65.0%), married (63.3%) and aged 31–50 years (55.0%). About 68.4% had at least secondary education and 82.5% had more than five years of farming experience; the majority operated small-scale farms. Farmer groups/cooperatives and mobile phones/social media were rated the most useful sources of extension information (mean = 2.88 each), followed by extension agents (2.84), input dealers/fellow farmers (2.77) and radio/television (2.73), yielding a grand mean of 2.82. Respondents perceived extension information as beneficial to agricultural development (grand mean = 3.07), especially regarding practice adoption, productivity and reduced production losses. Access to extension information was significantly associated with educational level, farm size and cooperative membership, but not with sex, age or farming experience. A moderately positive and significant relationship was found between access to extension information and the agricultural development score ($r = .522$, $p < .001$). The study concludes that strengthening access to extension information particularly through cooperatives and digital channels and reducing educational disparities can support agricultural development in the study area. It recommends accessible, affordable and locally appropriate extension delivery targeted at less-educated and non-cooperative farmers.

Keywords: Access, agricultural development, agricultural extension, information, rural farmers.

1. Introduction

Agriculture remains one of the most important livelihood systems in Nigeria, providing food, raw materials, employment and cash income for a large share of rural households. In agrarian communities the performance of agriculture is closely linked to the quality of information available to farmers on improved seeds, agronomic practices, pest and disease management, post-harvest handling, market opportunities and climate-related risks. Agricultural development therefore depends not only on land, labour and capital but also on farmers' ability to obtain credible, timely and usable extension information that can guide production, processing and marketing decisions. Recent studies in Nigeria continue to show that access to extension and advisory services is associated with improved productivity, stronger adaptive capacity and better inclusion in related development opportunities (Aminu et al., 2025; Osuji et al., 2025).

Agricultural extension information refers to knowledge, advice and problem-solving support transmitted to farmers through extension agents and other communication channels for the purpose of improving farming practices and rural livelihoods. In contemporary systems such information is delivered through face-to-face contact, farmer groups, demonstration plots, workshops, radio, television, mobile phones, print materials and digital platforms. The expansion of information and communication technologies has widened the possible channels of delivery in Nigeria, yet access remains uneven across locations and social groups. Evidence from southwestern Nigeria indicates that ICT tools now play an increasingly important role in extension service

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delivery, although their effectiveness is still shaped by infrastructure, digital skills, organisational support and affordability (Owolabi & Yekinni, 2022; Ogedengbe et al., 2024).

Although information sources have multiplied, access does not automatically translate into effective use. Literacy level, income, farm size, membership of organisations, ownership of phones, road access, language, power supply, credibility of the source and frequency of contact all influence who receives extension information, in what form and with what outcome. Studies among women farmers and rural households in Nigeria show that mass media and cooperative membership can support innovation uptake and welfare, but effectiveness is often constrained by coverage, timing, cost and infrastructure (Olatinwo et al., 2023; Wossen et al., 2017).

For rural farmers in Sagamu Local Government Area, access to agricultural extension information may have implications for the level of agricultural development achieved at household and community level. This study therefore focuses on access to agricultural extension information and its association with agricultural development among rural farmers in Sagamu Local Government Area of Ogun State.

1.1 Objectives of the Study

The broad objective of the study was to examine access to agricultural extension information and its association with agricultural development among rural farmers in Sagamu Local Government Area of Ogun State. The specific objectives were to:

1. Describe the socio-economic characteristics of the respondents;
2. Identify the major sources and channels of agricultural extension information available to rural farmers;
3. Examine the perceived contribution of access to agricultural extension information to agricultural development among rural farmers; and
4. Determine the relationship between selected socio-economic characteristics, access to extension information and agricultural development.

1.2 Hypotheses

H_{01}: There is no significant association between selected socio-economic characteristics of the farmers and their access to agricultural extension information in Sagamu Local Government Area.

H_{02}: There is no significant relationship between access to agricultural extension information and agricultural development among rural farmers in Sagamu Local Government Area.

2. Methodology

The study was conducted in Sagamu Local Government Area, Ogun State, Nigeria. A cross-sectional survey research design was adopted. A multistage sampling procedure was used. In the first stage, Sagamu Local Government Area was purposively selected because of its significant agricultural activities and the presence of diverse farming communities. In the second stage, six farming communities (Agbowa, Ode-Lemo, Simawa, Latawa, Ibido/Ituwa/Alara and Oko/Epe/Itunla) were purposively selected on the basis of the concentration of active farming households. In the third stage, respondents were selected from each community using a combination of cluster and simple random sampling. Households engaged in farming within each community formed natural clusters; from these clusters a total of 120 farmers were randomly selected to constitute the sample. Data were collected with a structured questionnaire containing sections on socio-economic characteristics, sources and channels of extension information, level of access to extension information, and perceived agricultural development outcomes.

2.1 Measurement of key variables

Access to agricultural extension information was measured as a composite score derived from frequency of contact with and usefulness of the listed channels (extension agents, radio/television, mobile phones/social media, farmer groups/cooperatives, and input dealers/fellow farmers). Agricultural development was operationalised as a composite perception score based on five Likert-type items covering adoption of improved practices, productivity, income and market participation, reduction of production losses, and overall contribution to agricultural development in the locality. The scale ranged from Strongly Agree (4) to Strongly Disagree (1). A grand mean ≥ 2.50 was regarded as positive perception. It is acknowledged that the agricultural development measure is based on respondents' perceptions rather than objective indicators (yield, income records, etc.). Consequently, findings relating to "influence" are interpreted as associations with perceived development outcomes.

Data were analysed using descriptive statistics (frequency, percentage, mean and standard deviation). Chi-square tests were used to examine associations between categorical socio-economic variables and access level. Pearson product moment correlation was used to test the relationship between the continuous access score and the agricultural-development score.

3. Results And Discussion

Table 1 shows that agricultural production in the study area is male-dominated (65.0%). The majority of respondents (55.0%) were within the economically active age bracket of 31–50 years. Most were married (63.3%). Secondary education was the modal highest qualification (34.2%); overall, 68.4% had at least secondary education while 31.6% had primary or no formal education. The majority (82.5%) had more than five years of farming experience and operated small-

Table 1: Socio-economic Characteristics of the Respondents

Variable	Category	Frequency	Percentage (%)
Sex	Male	78	65.0
	Female	42	35.0
Age	18–30 years	17	14.2
	31–40 years	29	24.2
	41–50 years	37	30.8
	51–60 years	25	20.8
	Above 60 years	12	10.0
Marital status	Single	22	18.3
	Married	76	63.3
	Divorced	9	7.5
	Widowed	13	10.8
Highest educational qualification	No formal education	13	10.8
	Primary education	25	20.8
	Secondary education	41	34.2
	NCE/OND	27	22.5
	HND/Degree and above	14	11.7
Farming experience	1–5 years	21	17.5
	6–10 years	31	25.8
	11–15 years	29	24.2
	16–20 years	24	20.0
	Above 20 years	15	12.5
Farm size	Less than 1 acre	29	24.2
	1–2 acres	45	37.5
	3–4 acres	31	25.8
	5 acres and above	15	12.5
Farming enterprise	Crop production	51	42.5
	Livestock production	23	19.2
	Mixed farming	34	28.3
	Agro-processing	12	10.0
Estimated monthly farming income	Below ₦50,000	27	22.5
	₦50,001–₦100,000	41	34.2
	₦100,001–₦150,000	29	24.2
	₦150,001–₦200,000	16	13.3
	Above ₦200,000	7	5.8
Cooperative membership	Yes	73	60.8
	No	47	39.2

scale farms (61.7% cultivated 2 acres or less). Crop production and mixed farming predominated. More than half (56.7%) earned ₦100,000 or less monthly from farming. Cooperative membership stood at 60.8%.

All five channels recorded means above the decision threshold of 2.50. Farmer groups/cooperatives and mobile phones/social media jointly ranked highest (M = 2.88). The grand mean of 2.82 indicates that respondents regard the identified channels as useful and that extension information reaches farmers through a plural system rather than through government agents alone. These findings are consistent with previous studies highlighting the growing role of ICTs and farmer organisations in extension delivery in southwestern Nigeria (Owolabi & Yekinni, 2022; Ogedengbe et al., 2024; Ifeanyi-obi & Iferobia, 2024; Fasina et al., 2024).

Respondents strongly perceived extension information as contributing to agricultural development (grand mean = 3.07). The highest-rated items concerned overall contribution, practice adoption and productivity. These results align with studies linking extension access to productivity, adaptive capacity and welfare outcomes (Aminu et al., 2025; Osuji et al.,

Table 2: Sources and Channels of Agricultural Extension Information

Statement	SA (%)	A (%)	D (%)	SD (%)	Mean	SD	Decision
Extension agents are important sources of agricultural information…	30.0	35.0	24.2	10.8	2.84	0.98	Accepted
Radio and television provide useful agricultural information…	25.8	36.7	22.5	15.0	2.73	1.01	Accepted
Mobile phones and social media help farmers receive agricultural information quickly.	33.3	33.3	20.8	12.5	2.88	1.02	Accepted
Farmer groups, cooperative societies and workshops help farmers learn improved farming practices.	30.8	38.3	19.2	11.7	2.88	0.98	Accepted
Input dealers and fellow farmers serve as useful sources of agricultural information.	25.0	38.3	25.8	10.8	2.77	0.95	Accepted
Grand Mean					**2.82**		**Accepted**

Table 3: Perceived Contribution of Extension Information to Agricultural Development

Statement	SA (%)	A (%)	D (%)	SD (%)	Mean	SD	Decision
Access to extension information influences the adoption of improved agricultural practices…	40.0	36.7	15.8	7.5	3.09	0.93	Accepted
Farmers who receive useful extension information are more likely to improve their productivity.	41.7	35.0	14.2	9.2	3.09	0.96	Accepted
Timely and relevant extension information improves farmers' income and market participation.	35.0	38.3	17.5	9.2	2.99	0.95	Accepted
Extension information helps farmers reduce production losses and make better farming decisions.	37.5	36.7	17.5	8.3	3.03	0.94	Accepted
Access to agricultural extension information contributes positively to agricultural development in Sagamu LGA.	43.3	33.3	15.8	7.5	3.12	0.94	Accepted
Grand Mean					**3.07**		**Accepted**

Table 4: Chi-Square Tests of Association between Selected Socio-economic Characteristics and Access Level

Variable	χ^2	df	p-value	Cramer's V	Decision
Sex	4.353	2	.113	.190	Not significant
Age group	2.540	4	.638	.103	Not significant
Educational level	49.840	4	<.001	.456	Significant
Farming experience	4.055	4	.399	.130	Not significant
Farm size	20.428	4	<.001	.292	Significant
Cooperative membership	53.325	2	<.001	.667	Significant

Table 5: Pearson Correlation between Access to Extension Information and Agricultural Development Score

Variables	N	Pearson r	p-value	Decision
Access score and agricultural development score	120	.522	<.001	Reject H_{02}

2025; Aremu & Reynolds, 2024; Opeifa et al., 2025). It must be noted, however, that the measure is perceptual; objective yield or income data were not collected.

Educational level, farm size and cooperative membership were significantly associated with access to extension information. Cooperative membership showed the strongest association (Cramer's V = .667). Sex, age and farming experience were not significantly associated with access. These findings are consistent with evidence that cooperative membership is a strong predictor of extension access in rural Nigeria (Wossen et al., 2017).

A moderately positive and statistically significant relationship was found between the access score and the agricultural-development score ($r = .522$, $p < .001$). Respondents with higher access scores tended to report stronger perceived agricultural-development outcomes.

4. Conclusion

Farmers in Sagamu Local Government Area obtained agricultural extension information from a plural system comprising extension agents, farmer groups and cooperatives, mobile phones and social media, radio and television, and input dealers/fellow farmers (grand mean = 2.82). They perceived this information as

contributing positively to agricultural development (grand mean = 3.07), particularly through practice adoption, productivity gains and reduced losses.

Access is unevenly distributed, it varies significantly with educational level, farm size and especially cooperative membership, but not with sex, age or years of farming experience. A moderate positive correlation exists between access to extension information and the perceived agricultural development score.

Because the agricultural development measure is based on perception rather than objective indicators, the findings demonstrate association rather than causal influence. Closing access gaps linked to education, farm size and cooperative status remains the most promising pathway for improving development outcomes in the study area.

5. Recommendations

i. Extension providers, particularly the Ogun State Agricultural Development Programme, should prioritise cooperative societies and farmer groups as primary entry points for information delivery and make deliberate efforts to reach the 39.2% of farmers who are not members of any cooperative.

ii. Because access differs significantly by educational level, extension messages should be simplified and delivered through demonstration, illustration and local-language formats so that farmers with primary or no formal education are not disadvantaged.

iii. Given that mobile phones and social media rank among the most useful channels, extension agencies should expand structured use of SMS alerts, WhatsApp groups and voice messages while ensuring content also reaches farmers without smartphones or reliable network access.

iv. Targeted outreach to smallholders (who constitute the majority of respondents) is needed, as farm size is significantly associated with access.

v. Policymakers and programme planners should institutionalise a plural channel approach that combines agents, cooperatives, mass media and mobile platforms rather than relying on any single channel.

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