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Assessment of Rural Finance Mechanisms in Bayelsa State, Nigeria

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Abstract

This study assessed rural finance mechanisms on agricultural productivity in Bayelsa State, Nigeria. The snowballing method was used in administering questionnaires. Descriptive statistics and Likert scale were employed in analysing the data, while the Test of Hypothesis was carried out using the Pearson Product-Moment Correlation Coefficient. From the study we found out that 67.3% of the respondents were married, 70.0% were in the age range 25-46 years, more than 90.0% had farming experience of 20 years Majority of the farmers (97.3%) were educated and 51.5% were females. From the study, we found out that farmers made efforts to apply for loans but only about 40.0% were successful in their application. Farming households 40.0% had an average turnover of more than ₦500,000 per annum when they had access to loans. Furthermore, loan/credit facilities were rejected because of high rate of interest, lack of collateral, and inaccessibility to financial facilities. We conclude that despite the low success rate of loan application by farmers, those who had access to loans were able to expand their farm operations and increase crop yield. This therefore necessitates more support for farmers by relevant stakeholders on the need to relax the lending conditions for farmers in Bayelsa State.

Introduction

The foundation of the Nigerian economy has long been agriculture, accounting for 70,0% of Nigeria's labour force and providing 22.8% of the country's GDP at N8.99 trillion (The World Bank Group, 2019; NBS, 2019). At independence in 1960, Nigeria's economy was mostly agricultural, with agriculture accounting for 63.8% of GDP. However, as time went by, less of the country's production came from agriculture. In 1970, agriculture made up 41.2% of GDP; by 1980, this had decreased to 20.6%. Despite increasing to 37.0% in 1990, it had decreased to 27.0% by 2000. The share of agriculture GDP has further decreased, from 23.8% in 2010 to 20.2% in 2014 and 21.4% in 2018 (World Bank, 2019; Nnaemeka, 2022). The discovery of oil served as the main catalyst for the drop in agricultural productivity. The nation has become an importer of food instead of producing enough food to feed itself. Nigeria imported N1.8 billion worth of food and live animals in 1981, but by 2018 that amount had skyrocketed to N1.4 trillion (World Bank, 2019).

Although agriculture no longer accounts for a substantial portion of Nigeria's GDP, it is still a key source of income for many smallholder farming households in Nigeria, with over 70% of workers employed in the sector (FAO, 2023). Despite its importance to economic growth and jobs, agriculture continues to struggle with a persistent difficulty in securing financing from financial institutions, accessing only 4.2% of commercial bank loans in the second quarter of 2019, compared to 15.3% for manufacturing, 22.0% for oil and gas, and 36.5% for services (FAO, 2021). This shows that formal financing is largely absent from the agricultural sector. Recent data demonstrate that farmers are the largest category of economically excluded people in Nigeria, with a financial exclusion rate of 37.6% (Nnaemeka, 2022). Therefore, increasing financial intermediation might boost economic growth by

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encouraging greater investment and increasing the returns on financial resources, which would increase productivity (Meyer, 2015; Awuah and Addaney, 2016). Farmers in rural areas lack knowledge regarding financial management, which limits their ability to prepare for and obtain credit (Taiwo *et al*., 2016). Additionally, limited access to formal financial institutions targeted at farmers further impedes their ability to acquire credit.

Nearly seventy percent (70.0%) of Bayelsa State's population live in rural regions and riverine areas, making it mostly a rural State (NBS, 2019). In Bayelsa State, rural farmers face numerous obstacles in accessing credit facilities. One major challenge is inadequate awareness and understanding of financial products and services available to them (Agyekumhene *et al*., 2018).

Farmers in rural areas lack knowledge regarding financial management, which limits their ability to prepare for and obtain credit. Additionally, limited access to formal financial institutions targeted at farmers further impedes their ability to acquire credit (Taiwo *et al*., 2016). Another obstacle is the difficulty in meeting the requirements for obtaining loans (Eric and Ivan, 2020). Banks and other financial institutions often require collateral or guarantors, but many farmers in the rural region do not have the necessary assets to secure these loans (Olagunju and Ajiboye, 2010; Ayegba and Ikani, 2013). Moreover, the cumbersome process of documentation and bureaucracy often serves as a deterrent, as many farmers lack the technical expertise to understand and comply with these procedures (Meyer, 2015).

Additionally, most rural farmers lack a steady source of income and are therefore unable to repay loans on time, leading to loan default. This has affected the willingness of financial institutions to provide credit to farmers in Bayelsa State, as they view agriculture as a high-risk sector due to these repayment challenges (Townsend *et al*., 2017). Furthermore, agricultural productivity a measure of the output of agricultural products relative to the inputs used (Kalaitzandonakes *et al*., 2018) is an essential metric for assessing the efficiency and performance of the agricultural sector.

To this end, the study addressed the following research questions: Do rural farmers in Bayelsa State have adequate access to credit or loan facilities from financial institutions? What challenges do rural farmers face in accessing credit facilities? What are the perceptions of rural farmers in Bayelsa State regarding agricultural productivity? How do credit or loan facilities impact the agricultural productivity of rural farmers in Bayelsa State? The broad objective of this study is to assess the effect of rural finance on agricultural productivity in Bayelsa State, Nigeria, while the specific objectives are: to investigate the extent of access to and utilization of credit or loan facilities from financial institutions; to ascertain the challenges faced by rural farmers in accessing credit facilities; and to examine the perceptions of rural farmers in Bayelsa State regarding agricultural productivity.

Materials and Methods

Study area

This study was conducted in 2023 across three local government areas of Bayelsa State, Nigeria: Ogbia, Southern Ijaw, and Ekeremor. Bayelsa State is one of the States in Southern Nigeria in the core Niger Delta region, between Delta State and Rivers State. Its capital is Yenagoa. The main language spoken is Izon with dialectical variants such as Kolokuma, Epie-Atissa, Nembe and Ogbia. The State was created in 1996 from part of Rivers State. Bayelsa State has one of the largest crude oil and natural gas deposits in Nigeria and as a result, petroleum production is extensive in the State. However, the majority of Bayelsans are mainly rural dwellers and the local populations engage in fishing and farming on both subsistence and commercial scales. Major crops grown include: rice, maize, citrus, mango, sweet potatoes, cocoyam, oil palm, ogbono (Irvingia), raffia palm, plantain, cassava, and okra, small ruminant animals such as goat, sheep, sea foods such as fish, oyster, shrimps etc. The major occupations in Bayelsa are fishing, farming, palm oil milling, lumbering, palm wine tapping, trading, carving and weaving. Bayelsa State consists of eight (8) LGAs which are Brass, Ekeremor, Kolokuma/Opokuma, Nembe, Ogbia, Yenagoa, Sagbama and Southern Ijaw Local Government Areas.

Sampling technique and sample size

The purposive sampling technique was utilized in this study. Three agrarian Local Government Areas (LGAs) were targeted with specified number of respondents (150); fifty were selected in the three LGAs. The snowballing method was used to get access to the respondents for the study.

Methods of data collection

A structured questionnaire was used for data collection. There were two main components to the questionnaire. Section A was used to assess the socioeconomic and the productive data of respondents, while section B was structured to align with the modified four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and Neutral (N), with weighted scores for responses carrying 1, 2. 3, 4 and 5 points, respectively. The study supervisor and other test construction experts from within and related Departments determined the instrument's face, construct, and content validity, while the reliability of the instrument was determined using the test-retest method over two-weeks with different respondents who were not part of the primary study to compare the two sets of trial test results.

Analytical methods

Descriptive statistics was used to describe the socio-economic characteristics of respondents while the LIKERT scale was used to establish the mechanisms of rural financing. The Pearson Product-Moment Correlation Coefficient was used to determine the relationship between rural finance and agricultural productivity. Data collected were analyzed using SPSS® and STATA® software.

Measure of agricultural productivity

Some key measures and concepts used to evaluate agricultural productivity include yield, factor of production such as land, labor and capital, input-output ratio, crop-specific metrics and economic measures. In this study, the economic measure was used to assess the Gross Value of Agricultural Output (GVAO) signifying the total market value of all agricultural products produced (Awotide *et al*., 2016; Burodo, 2022; Okorie and Nnamdi, 2022).

$$\text{GVAO} = \frac{\textit{Gross value of commodity produced}}{\textit{Total production of each commodity}}$$

Test of hypothesis

The hypothesis of the study are as follows:

H_0: There is no statistically significant relationship between rural finance and agricultural productivity.

H_1**:** There is a statistically significant relationship between rural finance and agricultural productivity.

Results and Discussion

Demographic characteristics of respondents

The demographic data of respondents (Table 1) show that 48.7% of the respondents were males while 51.3% were female. This indicates that there were more female respondents involved in farming in the State than males. This is very close to what was obtained from the research of Affuso *et al*., (2022) where 52.0% of the respondents were females. The result from Table 1 further shows that 30.7% of respondents were within the age range of 25-35 years, 39.3% fell within the age range of 36-46 years, 8.7% were less than 25 years, while 21.3% respondents were more than 47 years. This implies that respondents are active and still in their productive age, similar to what was obtained by Price (2019) and Woldeyohanes (2016). The marital status of the respondents shows 6.0% respondents were widowed, 24.0% were single, 67.3% of the respondents were married, 2.7% of respondents were divorced. Being married showed the stability of the households (Mazibuko and Antwi, 2019). Educational qualifications of respondents reflect that 2.7% have their First School Leaving Certificate (FSLC), 31.3% respondents had Senior School Certificate (SSCE), 34.7% had attained a National Diploma/National Certificate in Education (ND/NCE), while 41.3% respondents had Bachelors of Science/Bachelor's degree in Education (B.Sc./B.Ed.). More than eighty percent respondents are Christians while 16.7% were traditional worshippers. Also, on the type of farm operated by the farmers, cassava yield was 35.3%, poultry accounted for 13.3%, fish farming 11.3%, plantain farm was 32.7% and rice farming was 7.3%.

According to years of experience in farming of the respondents, 40.0% had a farming experience of 1 – 5 years, 26.6% had 6 – 10 years, 14.7% had 11-15 years, 12.0% had 16 – 20 years, and 6.7% had 21 years and above. This implies that more experienced farmers are exiting farming, while the younger farmers are not engaging in farming activities as desired, this maybe as a result of lack of finance and adequate boost for farming activities (Sun *et al*., 2024). Farmers engaged in cassava farming (35.3%) were more in the study area than other crops. This may be as result of soil types and ease of cultivation in the study area, while plantain farmers are 32.7%.

Table 1: Demographic data of respondents

Variable	Frequency	Percentage (%)
Sex		
Male	73	48.7
Female	77	51.3
Religion		
Christian	124	82.7
Tradition	25	16.7
Freethinker/Atheist	1	0.7
Age Range		
Below 25	13	8.7
25 –35 years	46	30.7
36 – 46 years	59	39.3
47 years and above	32	21.3
Marital Status		
Single	36	24.0
Married	101	67.3
Divorced	4	2.7
Widowed	9	6.0
Educational level		
SSCE	32	21.3
ND/NCE	52	34.7
BSc/B.Ed	62	41.3
FSLC	4	2.7
Type of Farm		
Cassava	53	35.3
Poultry	20	13.3
Fish farm	17	11.3
Plantain farm	49	32.7
Rice Farm	11	7.3
Years of Experience in Farming		
1 – 5	60	40
6 – 10	40	26.6
11 – 15	22	14.7
16 – 20	18	12
21 and above	10	6.7

Source: Field Research, 2023

Assessment of average turnover

Respondents' turnover in weeks, months and a year was assessed as a measure of agricultural productivity in this study. They were categorized based on their turnover. Twenty-six percent reported a weekly turnover of less than ₦10,000; 40% reported ₦10,000 weekly, while 33.3% reported a turnover exceeding ₦10,000 (Table 2). For monthly turnover, 26.7% reported less than ₦50,000, 40.0% reported ₦50,000 weekly, and 33.3% reported a turnover exceeding ₦50,000. Similarly, in terms of annual turnover, 26.7% reported less than ₦500,000, 40.0% reported ₦500,000 weekly, and 33.3% reported a turnover exceeding ₦500,000. Furthermore 26.7% respondents mentioned expansion of farm operation as a result of financial services contribution to enhance agricultural productivity, this implies that adequate financial services enhanced farm operations expansion (Iraoya and Isinika, 2022). Thirteen percent farmers mentioned improved farming techniques as what they were able to achieve when they had access to financial services. This corroborates the outcome from (Dossou *et al.,* 2020).

Table 2: Average turnover and contribution of financial services

Average Turnover in naira (₦)		Frequency	Percent
Average turnover per week			
Less than 10,000		40	26.7
10,000		60	40.0
More than 10,000		50	33.3
	Total	150	100
Average turnover per month			
Less than 50,000		40	26.7
50,000		60	40.0
More than 50,000		50	33.3
	Total	150	100
Average turnover per annum			
Less than 500,000		40	26.7
500,000		60	40.0
More than 500,000		50	33.3
	Total	150	100
Specific instances financial services have contributed to enhanced agricultural productivity			
Expansion of farm operation		40	26.7
Improved farming technique		20	13.3
Increased investment in inputs		30	20.0
None		60	40.0
	Total	150	100

Source: Field Research, 2023

Others (20.0%) said access to financial services increased their investment in inputs, this suggests that access to finance is a boost for farmers in the State as they were able to get more farming inputs which can enhance their productivity (African Development Bank, 2018). Farming households (26.7%) had an average turnover of less than ₦10,000 per week, 40% had a turnover of ₦10,000, while 33.3% had a turnover of ₦10,000 per week.

Challenges faced by rural farmers in accessing credit facilities in Bayelsa State

Challenges faced by rural farmers in accessing credit facilities (Table 3) shows that 60.0% of the farmers strongly agree that inability to provide valuable assets as collateral was a major challenge. Most lending agencies, according to 52.0% of the farmers were gender biased and also discriminated based on age. Fifty percent of the respondents agreed and strongly agreed that the interest charged on loans were too high. The interest rate (Salami and Arawomo, 2013)

While 66.0% strongly agreed that lack of access to financial institutions was a major challenge. The mean score for the inability of farmers to provide valuable asset to be used as collateral (4.56) indicates that despite the willingness of farmers to obtain loans in the state, majority (60.0%) had no asset that could be used. According to Egwu (2016), this is a reoccurring decimal and is pushing more farmers into poverty than out of it. The mean value (4.66) indicates that 66.0% of farmers lack access to available financial institutions situated within their communities. This implies that most farmers have to seek out banks in urban areas before they can access funds. However, most banks will be unable to adequately carry out know your customer assessment for these farmers because of distance and areas of jurisdiction (Awuah and Addaney, 2016; Adeoye and Olojede, 2019).

Access to loans and agricultural productivity as perceived by rural farmers

Findings from this study addressed the issue of agricultural productivity as perceived by rural farmers (Table 4). The study indicated that 68% of respondents strongly agrees to an increased quantity of farm produce per season when they had access to loan. It shows that farmers (68.0%) had increase in the quantity of farm produce per season of harvest.

Table 3: Challenges faced by Rural Farmers in Accessing Credit Facilities in Bayelsa State

S/N	Statements/Items	SA	A	SD	D	U	Mean
1	Inability to provide a valuable asset to be used as collateral denies farmers the opportunity of getting funds.	90 (60%)	58 (38.7%)	0 (0%)	0 (0%)	2 (1.3%)	4.56
2	Most loans are gender biased and age discriminatory.	78 (52%)	69 (46.0%)	1 (0.7%)	0 (0%)	2 (1.3%)	4.47
3	Low level of financial literacy hinders farmers from getting access to funds.	84 (56.0%)	66 (44.0%)	0 (0%)	0 (0%)	0 (0%)	4.56
4	High interest rate discourages farmers from obtaining a loan.	75 (50.0%)	75 (50.0%)	0 (0%)	0 (0%)	0 (0%)	4.50
5	Lack of access to available financial institutions situated within the rural communities	99 (66.0%)	51 (34.0%)	0 (0%)	0 (0%)	0 (0%)	4.66

Source: Field Research, 2023

Table 4: Loans access and Agricultural Productivity as Perceived by Rural Farmers in Bayelsa State

S/N	Statements/Items	SA	A	SD	D	U	Mean
1	Increase in the quantity of farm produce per season of harvest	102 (68%)	41 (27.3%)	0 (0%)	3 (2.0%)	4 (2.7%)	4.58
2	Increase in the average turnover	113 (75.3%)	37 (24.7%)	0 (0%)	0 (0%)	0 (0%)	4.75
3	The need to engage the services of more workers because of increase in the volume of production	102 (68.0%)	46 (30.7%)	2 (1.3%)	0 (0%)	0 (0%)	4.65
4	Buying of more farm or agricultural inputs to aid production	86 (57.3%)	64 (42.7%)	0 (0%)	0 (0%)	0 (0%)	4.57
5	Whenever there is high demand for my farm produce, I know that things are getting better.	83 (55.3%)	64 (42.7%)	3 (2.0%)	0 (0%)	0 (0%)	4.53

Source: Field research, 2023

Farmers (75.3%) strongly agreed that their average turnover increased when they had access to loans. Having adequate access to loans will help better farm dynamics and versatility (Tan *et al.,* 2021). This will reduce the stress of engagement of farming households. With the availability of funds, 68% of the farmers strongly agreed that there was a need to engage the services of more workers because of the increase in the volume of production. Having access to more farm workers and renumerating those lifts a lot of burden off farmers when there is bomber harvest (McCullough, 2017). Respondents (57.3%) agreed that buying of more farm or agricultural inputs to aid production was achieved when they had access to credit facilities, this supports the research outcomes of (Ayuba and Zubairu, 2015). Having access to farm inputs is a good indicator to farmers that production and agricultural yield will be ascertained (Siebrecht, 2020; Burodo, 2022). And fifth question item with mean a score of 4.53, indicates that respondents (55.5%) strongly agreed that there was high demand for their farm produce.

Correlation outcome between rural finance and assessed agricultural productivity

The correlation outcome between rural finance and agricultural productivity among respondents from Bayelsa State shows that there is a positive and significant relationship between rural finance and agricultural productivity as shown (Table 5). Furthermore, the relationship is significance at 1% level of confidence ($p < 0.01$). The Pearson correlation coefficient (r) is 0.0216). This outcome means that we fail to accept the null hypothesis stated above that there is no significant relationship between rural finance and agricultural productivity while the alternate hypothesis is accepted. This therefore suggests that a significant relationship exists between rural finance and agricultural productivity (Adjognon *et al*., 2017).

Furthermore, the correlation coefficient is 1.00, indicating a perfect positive correlation, which is expected since it's the correlation of the variable with itself. The correlation coefficient is 0.0102, indicating a positive correlation between rural finance and agricultural productivity. The p-value for the correlation between rural finance and agricultural productivity is 0.0216. Since this value is less than the commonly used significance level of 0.05, it suggests that the correlation is statistically significant. The sample size for both variables is 150, indicating that the data for both rural finance and agricultural productivity were based on 150 observations (Table 5).

Conclusion

Strategically, improving rural financial access is crucial to the agriculture sector's growth. Despite efforts by rural farmers to access credit facilities, a significant proportion (60.0%) were unsuccessful in their loan applications. This indicates a gap in accessing financial services by rural agricultural producers in Bayelsa State. Forty percent of farmers recorded ₦500,000 turnover per annum. This increase in crop production and harvest during the loan duration indicates that access to credit positively affected agricultural productivity in Bayelsa State. Furthermore, among those successful in obtaining loans, 26.0% used the funds for expanding their farm operations. This outcome suggests a demand for capital to enhance agricultural productivity in the region. Consequently, there is a positive correlation (0.0102) between rural finance and agricultural productivity. This means that, the relationship is statistically significant.

Table 5: Correlation Outcome between rural finance and assessed agricultural productivity

Correlations	Rural Finance	Agricultural Productivity		
Rural Finance	1.00			
Pearson correlation		1.00		0.0216
Significant (2-tailed)	-		1.00	0.0102*
N	150			
Agricultural Productivity	1.00			
Pearson correlation		1.00		0.0222
Significant (2-tailed)		-	1.00	0.0101*
N	150			

Source: Field Survey, 2023. (*p< 0.01, significant level of 1%)

We therefore recommend that financial institutions should consider lowering interest rates on agricultural loans to make them more accessible and affordable for rural farmers. Additionally, exploring alternative forms of collateral beyond traditional assets like land is hereby suggested. Also, group guarantees or crop-based collateral, which are more suitable for smallholder farmers who may lack land titles or other conventional collateral can be another suitable alternative. Likewise, expanding the reach of financial institutions and services in rural areas through mobile banking, agent banking, or other innovative approaches will make it easier for farmers to access credit and other financial services without the need to travel long distances.

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