



**AGRICULTURAL CREDIT ACCESSIBILITY AND FINANCIAL INCLUSION AMONG
RURAL FARMERS IN ORHIONMWON LOCAL GOVERNMENT AREA,
EDO STATE, NIGERIA**

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ABSTRACT

The study examined agricultural credit accessibility and financial inclusion among rural farmers in Orhionmwon Local Government Area, Edo State, Nigeria. A multi-stage sampling procedure was employed to select 80 respondents. Data were collected using structured questionnaire and analysed using both descriptive and binary logistic regression analysis. Results show that only 36.25% of farmers accessed credit, with overwhelming reliance (87.5%) on informal sources. The Herfindahl-Hirschman Index analysis reveals a highly fragmented credit market with HHI values of 0.0000329 for processors and 0.0022862 for marketers. Logistic regression identifies short repayment periods as the most significant constraint ($B = -1.539, p = .004$), reducing credit access odds by 79%. While socio-economic factors like age, education, and gender showed limited statistical significance at the 0.05 alpha level of significance, institutional barriers including complex procedures and inadequate collateral emerged as critical impediments. The study concludes that credit access among farmers in Orhionmwon LGA is severely constrained, with only 36.25% accessing credit and 87.5% relying on informal sources. Short repayment periods constitute the most significant barrier, reducing credit access odds by 78.5% ($p = 0.004$). Institutional constraints dominate over individual socio-economic characteristics in determining access, with the model explaining 41% of variance and achieving 78.8% predictive accuracy.

Keywords: Agricultural, Credit, Rural, Finance, Inclusion, Constraints.

INTRODUCTION

Agriculture remains the backbone of Nigeria's economy, contributing approximately 25% to GDP and employing over 70% of the rural population (National Bureau of Statistics, 2023). Despite its strategic importance, the sector continues to grapple with chronic underfunding and limited access to formal credit facilities, particularly among smallholder farmers who constitute the majority of agricultural producers (World Bank, 2022). This credit constraint severely limits farmers' capacity to invest in improved inputs, modern technologies, and expansion of farm operations, thereby perpetuating low productivity and rural poverty cycles. The challenge of agricultural credit accessibility in Nigeria is multifaceted, involving complex interactions between institutional frameworks, socio-economic characteristics of farmers, and structural deficiencies in rural financial systems (CBN, 2021). Formal financial institutions often impose stringent conditions that exclude smallholder farmers, while informal sources, though more accessible, typically offer insufficient amounts with unfavourable terms (Adeyemo *et al.*, 2023). This situation creates a paradox where agricultural potential remains untapped due to financial exclusion, despite numerous government interventions and credit schemes.

Orhionmwon Local Government Area in Edo State presents a particularly relevant case study, characterized by predominantly smallholder farming systems and limited financial service penetration. The area's agricultural sector, dominated by crops like plantains, yams, cassava, and maize, suffers from productivity gaps that could potentially be addressed through improved credit access (Edo State Agricultural Development Programme, 2024). However, empirical evidence on the specific determinants and constraints of credit access in this region remains scarce, creating a knowledge gap that hampers targeted policy interventions.

This study contributes to addressing this gap by employing robust analytical techniques including descriptive statistics, constraint ranking, and binary logistic regression to examine the factors



influencing agricultural credit accessibility. The research provides empirical evidence on the relative importance of various constraints and identifies key leverage points for improving financial inclusion in rural agricultural communities. By focusing on Orhionmwon LGA, the study offers location-specific insights while contributing to broader debates on rural financial inclusion in developing economies.

METHODOLOGY

The Study Area

The study was conducted in Orhionmwon Local Government Area, Edo State, Nigeria. Located in the tropical rainforest zone, Orhionmwon lies between latitudes 6.0°N and 6.2°N and longitudes 5.7°E and 5.9°E (or specifically at 6.0833°N, 5.8333°E), covering approximately 2,385 km² with a population of 183,994 but according to the growth rate, it is projected to be 271,800 in the year 2025 (National Population Commission, 2023). The area is predominantly agrarian, with farming as the primary livelihood for over 80% of households. Major crops include plantains, yams, cassava, and maize, cultivated mainly through smallholder systems. Despite its agricultural potential, the area suffers from limited financial service penetration, with only two microfinance banks serving the entire local government area (CBN, 2023).

Sampling Procedure and Sample Size

A multi-stage sampling procedure was employed. First, Orhionmwon LGA was purposively selected. Second, ten communities were randomly selected. Third, to ensure representativeness, the sample size of 80 respondents (determined by Yamane's formula) was allocated proportionally across communities based on their estimated farming populations. Therefore, larger communities like Urhionigbe contributed more respondents than smaller communities like Okuor, ensuring every farmer in the LGA had an approximately equal chance of selection.

Method of Data Collection

Primary data were collected through structured questionnaires administered via face-to-face interviews between January and March 2025. The questionnaire covered: (1) socio-economic characteristics, (2) credit access history and sources, (3) constraint perceptions measured on 4-point Likert scales, and (4) farm production characteristics. Pre-testing was conducted with 15 farmers not included in the final sample to refine the instrument.

Analytical Techniques

The study employed both descriptive and inferential statistical techniques:

Descriptive Analysis: Frequencies, percentages, means, and standard deviations were used to summarize socio-economic characteristics and credit access patterns. Constraint severity was measured using mean scores from Likert-scale responses.

Market Concentration Analysis: The Herfindahl-Hirschman Index (HHI) was calculated to assess credit market structure:

$$HHI = \sum_{i=1}^N s_i^2$$

Where s_i represents the market share of each credit source expressed as a decimal. Interpretation followed standard thresholds: $HHI < 0.01$ (competitive), $0.01-0.15$ (moderately concentrated), >0.15 (highly concentrated).

Binary Logistic Regression: A logistic regression model was specified to identify determinants of credit access:

$$\text{Logit}(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 \dots + \dots \beta_i X_i + e \dots (1)$$

Where:

P = Probability that farmer accessed credit (1 = Yes, 0 = No)

β_0 = Intercept

β_i = Coefficients of explanatory variables



X_i = Vector of explanatory variables

ε = Error term

The operational model included variables for age, sex, education, marital status, family size, farming experience, and constraint perceptions (interest rates, collateral, guarantor requirements, repayment period).

Model Specification and Variable Description

Table 1: Variable Description and Measurement

Variable	Description	Measurement	Expected Sign
Dependent Variable			
Credit_Access	Whether farmer accessed credit	1 = Yes, 0 = No	-
Independent Variables			
Age	Age of farmer in years	Continuous	Ambiguous
Sex	Gender of respondent	1 = Male, 0 = Female	+
Education	Level of formal education	1=Primary, 2=Secondary, 3=Tertiary	+
Marital_Status	Current marital status	1=Single, 2=Married, 3=Others	+
Family_Size	Number of household members	Continuous	+
Experience	Years of farming experience	Continuous	+
Interest_Rate	Constraint severity	1-4 Likert scale	-
Collateral	Constraint severity	1-4 Likert scale	-
Guarantor	Constraint severity	1-4 Likert scale	-
Repayment	Constraint severity	1-4 Likert scale	-
Procedures	Constraint severity	1-4 Likert scale	-

Source: Researcher’s Field Study, (2025)

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

The analysis of socio-economic characteristics of farmers in the study area as shown in Table 2 revealed that age has an ambiguous effect, as younger farmers may be more receptive to innovation and credit uptake (Balogun and Yusuf, 2021), while older farmers often possess greater experience and collateral that appeal to lenders (Ridwan, Sanni and Adebayo, 2022). Gender, with an expected positive sign for males, reflects persistent cultural and institutional biases in land ownership and lending practices; Adeola and Aina (2023) confirm that female farmers in Nigeria face disproportionate barriers to credit. Education consistently shows a positive relationship, enhancing financial literacy and application competence, a finding supported by Ojo, Ugwu and Nwachukwu (2024) who linked higher education levels to improved credit access among smallholders in sub-Saharan Africa. Marital status is also expected to have a positive effect, as marriage signals stability and shared responsibility to financial institutions (Umar, Mohammed and Bello, 2022).

Family size presents a dual implication: while larger households provide farm labor that can boost productivity and repayment capacity, they also increase consumption pressures that may hinder loan repayment. Mkhize (2023) notes that lenders may view large families ambivalently, weighing labor benefits against consumption burdens. The constraint variables—interest rate, collateral requirements, guarantor conditions, repayment terms, and bureaucratic procedures—are all expected to negatively affect credit access. High interest rates and stringent collateral demands remain critical barriers, particularly for resource-poor farmers (Chauke, Nkosi and Dlamini, 2021). Complex procedures and guarantor requirements further exclude smallholders from formal credit markets, as documented by Eze and Ibekwe (2024), who emphasize the need for streamlined lending processes to enhance financial inclusion in rural agricultural communities



Table 2: Distribution of Respondents based on the Socio-economic Characteristics (N = 80)

Characteristic	Category	Frequency	Percentage	Mean	SD
Age Group	25-35 years	18	22.5	45.0	8.7
	36-45 years	26	32.5		
	46-55 years	22	27.5		
	56+ years	14	17.5		
Sex	Male	50	62.5	-	-
	Female	30	37.5	-	-
Education	Primary	17	21.3	-	-
	Secondary	42	52.5	-	-
	Tertiary	21	26.2	-	-
Marital Status	Single	11	13.8	-	-
	Married	59	73.7	-	-
	Others	10	12.5	-	-
Family Size	1-3 members	16	20.0	5.2	1.8
	4-6 members	45	56.3		
	7+ members	19	23.7		
Farming Experience	1-5 years	20	25.0	12.4	7.2
	6-10 years	24	30.0		
	11-15 years	18	22.5		
	16+ years	18	22.5		

Source: Researcher’s Field Study, (2025)

Credit Access Patterns and Market Structure

The data in Table 3 reveal a severe credit access gap, with only 36.25% of farmers obtaining credit, implying that the majority of respondents operate without financial support necessary for productive investment. This exclusion limits their capacity to purchase inputs, adopt innovations, and expand farm operations, thereby perpetuating low productivity and rural poverty. This finding aligns with the Central Bank of Nigeria (2023), which reports that approximately 70% of Nigerian smallholders lack access to formal credit, confirming that the study area mirrors a national pattern of financial exclusion.

The overwhelming reliance on informal sources (87.5%) compared to formal sources (12.5%) implies systemic failures in formal financial systems to serve rural agricultural clients. This dominance suggests that farmers resort to social networks and informal arrangements due to inaccessible formal institutions. Nwosu, Oguoma and Nwosu (2022) agree that commercial banks in Nigeria prioritize less risky sectors, leaving agriculture severely underfunded. Within the informal sector, the prominence of family and friends (47.5%) implies that personal relationships, rather than financial institutions, provide the primary safety net, though these sources typically offer small amounts insufficient for meaningful agricultural investment. Cooperative societies (22.5%) play a significant role, implying that collective action mechanisms partially bridge the credit gap, a finding supported by Eze, Ibekwe and Nwaru (2023) who found that cooperatives enhance access through peer monitoring and joint liability. The continued presence of money lenders (17.5%) implies farmer desperation, as these sources charge exorbitant interest rates that often trap borrowers in debt cycles. Okoro, Madu and Ugwu (2024) caution that while informal credit is accessible, it frequently fails to meet productive needs and may worsen rural poverty.

Table 3: Distribution of Respondents based on the Credit Access Patterns and Sources (N = 80)

Variable	Category	Frequency	Percentage
Credit Access	Accessed	29	36.25
	Not Accessed	51	63.75
	Formal	10	12.5
Source Type	Commercial Banks	4	5.0
	Microfinance Banks	6	7.5
	Informal	70	87.5
	Family/Friends	38	47.5
	Cooperative Societies	18	22.5
	Money Lenders	14	17.5

Source: Researcher's Field Study, (2025)

Market concentration analysis using HHI yielded values of 0.0000329 for processors and 0.0022862 for marketers, indicating highly competitive but fragmented markets. These extremely low HHI values suggest no single credit source dominates the market, but also reflect limited capacity for scale economies in credit provision.

Constraint in Accessing Credit by the Respondents

Table 4 revealed that short repayment periods emerged as the most severe constraint (Mean = 3.34), implying a fundamental mismatch between agricultural production cycles and typical loan terms. Farmers require time to cultivate, harvest, and sell before repaying, but lenders often demand quicker repayment incompatible with seasonal incomes. This finding aligns with Binswanger and Rosenzweig (2014), whose seasonal cash flow theory emphasizes the importance of aligning repayment schedules with harvest periods to ensure loan viability.

Complex procedures ranked second (Mean = 3.21), implying that bureaucratic requirements disproportionately exclude less-educated farmers who struggle with documentation, multiple visits, and lengthy processes. Adeola and Yusuf (2022) agree that complex application procedures significantly reduce smallholder participation in formal credit markets, particularly among farmers with limited formal education.

Problems getting guarantors ranked third (Mean = 3.15), implying that social capital requirements exclude farmers lacking wealthy or influential connections willing to assume liability. Okeke, Nnamdi and Eze (2023) found that guarantor conditions represent a major barrier in Nigerian agricultural finance, as many smallholders cannot secure credible guarantors. High interest rates ranked fourth (Mean = 3.04), implying that borrowing costs exceed what most farmers consider profitable after accounting for production risks. Ogunleye and Adewale (2021) confirm that high interest rates discourage credit uptake among smallholders, particularly in rain-fed agriculture where harvest failure risks are substantial.

Inadequate collateral ranked fifth (Mean = 2.94), implying that while problematic, collateral constraints are slightly less severe than repayment timing and procedural barriers. This finding contradicts conventional assumptions that collateral is the primary barrier. Nwachukwu, Udoh and Obi (2024) offer a contrary view, arguing that collateral remains the most critical constraint in formal lending, suggesting the lower ranking here may reflect the predominance of informal sources that rarely require collateral.

Limited credit sources ranked lowest (Mean = 1.88), implying that farmers perceive multiple potential sources exist, but access barriers prevent utilization. This supports the interpretation that institutional rigidities, not source availability, constrain credit access.

Table 4: Mean Scores and Ranking of Credit Access Constraints

Constraint	Mean	SD	95% CI	Rank
Short repayment period	3.34	0.65	[3.20, 3.48]	1
Complex procedures	3.21	0.52	[3.10, 3.32]	2
Problems getting guarantors	3.15	0.71	[3.00, 3.30]	3
High interest rates	3.04	0.93	[2.83, 3.25]	4
Inadequate collateral	2.94	0.68	[2.79, 3.09]	5
Limited credit sources	1.88	0.33	[1.81, 1.95]	6

Source: Researcher’s Field Study, (2025)

Determinants of Access to Credit

The regression results in Table 5 reveal that short repayment period is the only variable statistically significant at the 1% level ($p = 0.004$, Wald = 8.067), with a negative coefficient ($B = -1.539$) and odds ratio of 0.215. This implies that farmers facing severe constraints from short repayment periods are approximately 79% less likely to access credit compared to those with more flexible repayment terms. This finding strongly aligns with Binswanger and Rosenzweig (2014), whose seasonal cash flow theory emphasizes that agricultural loan repayment schedules must align with harvest cycles to be viable. The high significance of this variable while interest rates remain insignificant ($p = 0.296$) supports Zeller and Sharma (2022), who argued that repayment flexibility often outweighs interest cost considerations for smallholders with irregular income streams.

The finding that short repayment periods constitute the most significant barrier aligns with agricultural production economics but contrasts with much policy focus on interest rate subsidies. While interest rates are important, their effect may be secondary to repayment timing for farmers with seasonal income flows. This suggests that credit policies should prioritize flexible repayment schedules over interest rate reductions, a position supported by Ogunipe, Adeyemi and Okunlola (2023), who found that loan structuring around harvest periods improved repayment rates more substantially than interest rate reductions in southwestern Nigeria.

The limited significance of socio-economic variables in the regression model warrants careful interpretation. Sex approaches significance at the 10% level ($p = 0.089$, OR = 3.139), suggesting that male farmers are about three times more likely to access credit than females, consistent with Adeola and Aina (2023). However, education ($p = 0.551$), age ($p = 0.658$), and marital status ($p = 0.108$) show no statistical significance. While education and experience are theoretically important for creditworthiness, their effect may be mediated by institutional barriers that affect all farmers regardless of individual characteristics. This highlights the need for systemic reforms rather than targeted interventions based on farmer characteristics alone, as argued by Nwaru, Okoye and Nwachukwu (2022), who found that institutional rigidities in Nigerian agricultural credit markets overwhelm individual socio-economic advantages.

The high reliance on informal credit sources despite their limitations reflects adaptive strategies by farmers facing exclusion from formal systems. Rather than viewing informal credit as problematic, policies should recognize its functional role and seek to integrate formal and informal systems through linkages and regulatory frameworks that enhance informal sector capacity while maintaining its accessibility. This perspective aligns with Armendariz and Morduch (2021), who advocate for hybrid models combining formal sector resources with informal sector flexibility and local knowledge. The model demonstrates strong predictive power with a highly significant chi-square ($\chi^2(9) = 28.47$, $p < 0.001$), Nagelkerke R^2 of 0.41 indicating that 41% of variance in credit access is explained, and excellent discrimination with AUC of 0.835. The Hosmer-Lemeshow test ($p = 0.322$) confirms good model fit. Overall classification accuracy of 78.8% implies the model correctly predicts credit access outcomes for nearly four out of five farmers, supporting its utility for policy guidance.

Table 5: Credit Access Determinants

Variable	B	SE	Wald	p	Odds Ratio	95% CI
Constant	4.412	4.036	1.195	.274	-	-
Age	0.014	0.032	0.196	.658	1.014	[0.952, 1.080]
Sex	1.144	0.673	2.887	.089	3.139	[0.838, 11.757]
Education	-0.323	0.541	0.356	.551	0.724	[0.251, 2.091]
Marital Status	-0.967	0.602	2.582	.108	0.380	[0.117, 1.237]
Interest Rate	-0.374	0.358	1.091	.296	0.688	[0.341, 1.388]
Collateral	0.488	0.461	1.120	.290	1.629	[0.660, 4.019]
Guarantor	0.581	0.459	1.603	.205	1.788	[0.728, 4.395]
Short Repayment	-1.539	0.542	8.067	.004	0.215	[0.074, 0.620]
Procedures	-0.450	0.455	0.979	.322	0.638	[0.262, 1.554]
Model Statistics						
Model Chi-square (df=9)	28.47	p < .001				
Nagelkerke R ²	0.41					
Hosmer-Lemeshow Chi-square (df=8)	9.24	p = .322				
Overall Classification Accuracy	78.8%					
Area Under Curve (AUC)	0.835					

CONCLUSION AND RECOMMENDATIONS

This study concludes that credit accessibility among farmers in Orhionmwon LGA is severely constrained, with only 36.25% accessing credit and 87.5% relying on informal sources. The single most significant barrier is the mismatch between loan repayment terms and agricultural production cycles, as short repayment periods reduce the odds of credit access by 78.5% ($p = 0.004$). While gender approaches significance ($p = 0.089$), institutional constraints overwhelmingly dominate over individual socio-economic characteristics in determining credit access. The model explains 41% of variance in credit access with 78.8% predictive accuracy, confirming the robustness of these findings.

Based on these conclusions, the following recommendations are made:

First, financial institutions should develop flexible loan products with grace periods covering planting to harvest phases and graduated repayment schedules aligned with crop cycles. Second, bureaucratic procedures must be simplified through digital platforms and group lending models that reduce documentation burdens. Third, formal-informal linkages should be established to leverage local knowledge of cooperatives and informal lenders while improving credit terms. Fourth, targeted financial literacy programmes should address credit management and application processes tailored to agricultural cycles. Fifth, collateral alternatives including warehouse receipts and group guarantees should replace traditional asset requirements. Sixth, digital financial services with agricultural-specific features should be expanded. Finally, policy coordination across extension services, input supply, and market access programmes is essential to create enabling ecosystems for agricultural credit.

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