

Inclusive Credit Policies and Access to Agricultural Credit among Women Farmers in Osun State, Nigeria Ige, A. O.

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Abstract: Women play a central role in Nigerian agriculture, contributing 60–80% of farm labour, yet face significant barriers to accessing formal credit. This study examined the socio-economic characteristics of women farmers in Osun State, their credit sources, utilisation patterns, determinants of credit access, and constraints to credit access. A multistage sampling procedure was used to select 120 respondents. Data were analysed using descriptive statistics, probit regression, and Likert scale. The results revealed that the respondents had a mean age of 40.21 ± 15.17 years, household size of about 7 persons, spent about 10 years in school, and mean farm size of 2.5 ha. Credit access stood at 70.8%, with microfinance banks as the dominant source (45%). However, 80% of recipients considered their loans insufficient, and 60.8% reported repayment difficulties. Result of the Probit regression analysis revealed that age ($\beta = 0.17$, $p < 0.1$), marital status ($\beta = 0.56$, $p < 0.1$), education ($\beta = 0.48$, $p < 0.05$), farm size ($\beta = 2.12$, $p < 0.1$), primary occupation ($\beta = 1.12$, $p < 0.05$), cooperative membership ($\beta = 1.16$, $p < 0.05$), collateral ($\beta = 2.78$, $p < 0.1$), and interest rate ($\beta = 0.16$, $p < 0.1$) significantly influenced access to credit. Major constraints included lack of collateral (mean = 3.87), high interest rates (mean = 3.75), difficulty in getting surety (mean = 3.70). This study, therefore, recommended that government should prioritise gender-responsive financial schemes, flexible collateral requirements, expanded cooperative membership, and targeted financial literacy training to improve agricultural credit accessibility and utilisation among women farmers.

Keywords: Women, Credit policy, Utilisation, Probit regression

INTRODUCTION

Agriculture remains a central driver of economic growth, poverty reduction, and food security in developing economies, particularly in sub-Saharan Africa. In Nigeria, the sector contributes over 25% of Gross Domestic Product (GDP) and employs more than 70% of the labour force, making it a critical pillar of national development (National Bureau of Statistics, 2021; Oyetade *et al.*, 2021). Beyond its economic role, agriculture stimulates growth in other sectors and is vital for achieving global poverty reduction targets (IDA, 2009). Yet, the sector's success depends heavily on farmers' access to resources especially agricultural credit which enables investment in improved technologies, expansion of production, and increased incomes. Limited access to credit constrains smallholder farmers, who dominate the sector, resulting in low input use, reduced productivity, and persistent rural poverty (Asogwa, *et al.*, 2014; Simonyan *et al.*, 2010).

Small-scale farmers cultivate most of Nigeria's farmland and supply the bulk of its food. Women play a vital role in this process, constituting 60–80% of the agricultural labour force (Nagac & Hauwa, 2016; Alkire *et al.*, 2013; FAO, 2011) and contributing across the value chain from land preparation, planting, input application, harvesting, processing, and marketing (Folarin *et al.*, 2021; Azeez *et al.*, 2021). These contributions are essential to household welfare, food security, and national poverty reduction (FAO, 2014, 2016). However, women farmers face persistent barriers, including unequal land access, inadequate inputs, limited extension services, and restricted credit (Ganiyu *et al.*, 2021; FAO, 2019b; Croppenstedt *et al.*, 2013; Odoemenen and Obinne, 2010).

Agricultural credit is widely recognised as a catalyst for agricultural transformation, enabling farmers to acquire modern inputs, adopt improved technologies, expand production, and meet household needs (Asom *et al.*, 2023; Balana, *et al.*, 2022; Sanglay *et al.*, 2021; Gulati and Juneja, 2019; Jimi *et al.*, 2019; Mogues, 2015; Ibrahim and Aliero, 2012). In Nigeria, finance comes from formal institutions (e.g., Bank of Agriculture, Nigerian Agricultural Cooperative and Rural Development Bank), semi-formal sources (microfinance institutions, cooperatives, NGOs), and informal lenders (moneylenders, friends, relatives). While informal credit often requires fewer conditions, it typically provides smaller loans with shorter repayment terms, limiting its effectiveness for agricultural investment.

High transaction costs, risk aversion, and structural constraints limit credit market participation among women farmers (Balana & Oyeyemi, 2022; Ayeomoni *et al.*, 2016; Boucher, 2008). Other barriers include distance to lenders, long processing times, high interest rates, small loan sizes, and low income (Hananu *et al.*, 2015; Kosgey 2013; Odoemenem & Obinne, 2010). There are also socio-economic factors that influence women farmer's access to credits, which include farming experience, land size, asset value, expenditures, income, collateral, and commercialisation level (Aliero *et al.*, 2017; Ololade *et al.*, 2013; Oyedele *et al.*, 2009). Low financial literacy also limits farmers' ability to secure favourable credit terms (Ugoani *et al.*, 2015), while cultural norms in some regions further exclude women (Okojie *et al.*, 2010).

Women's lack of land titles and collateral, smaller loan sizes, and exposure to discriminatory lending, push many toward informal credit, which restricts investment capacity and limits productivity

(Khandker *et al.*, 2016; Fletschner *et al.*, 2010). Evidence showed that women with access to credit are more likely to invest in farm improvements and household welfare (Doss, 2018; Fletschner and Kenney, 2014), whereas financial exclusion perpetuates low productivity and vulnerability (Attamah *et al.*, 2020). Socio-cultural factors, including patriarchal land tenure and male-dominated financial decision-making, further constrain access.

To address rural financing gaps, Nigerian government introduced and implemented policies and schemes such as the Agricultural Credit Guarantee Scheme Fund (ACGSF), Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), Growth Enhancement Scheme, and the Anchor Borrowers' Programme. State-level initiatives include the Special Emergency Agricultural Loans Scheme and the Small and Medium Enterprises Equity Investment Scheme. The policies were put in place with a view to guaranteeing sustainable availability and accessibility of credit funds to the agricultural sector to constructively revitalise rural economic sectors, to enhance national food and nutrition security, to reduce liquidity constraints within agricultural production, to increase agricultural productivity, to enhance employment creation, and to improve livelihood diversification, thereby leading to a vibrant rural economy (Bassey, 2016; Ojiako, 2012; Adetiloye, 2012). Though some successes through these schemes have been documented, most of the challenges facing agricultural credit markets in Nigeria remain unresolved, because many programmes fail to address gender-specific constraints, suffer from weak monitoring, bureaucratic bottlenecks, and uneven benefit distribution (Balana *et al.*, 2022; Adegbite and Machethe, 2020; Wossen *et al.*, 2017; Awotide *et al.*, 2015).

In Osun State, persistent gaps in agricultural finance continue to limit women farmers' access to formal credit, with implications for farm investment, income, and food security. Despite their participation in agricultural activities, women farmers face structural, institutional, and socio-cultural barriers that limit their ability to obtain agricultural credit. Empirical evidence showed that the effectiveness of credit in improving agricultural outcomes depends critically on whether farmers can access adequate and timely financing under favourable conditions (Kaye *et al.*, 2024; Chaiya *et al.*, 2023; Rahimah *et al.*, 2018; Boucher *et al.*, 2008, 2009; Feder *et al.*, 1990). Understanding the determinants of credit access is therefore essential for designing effective and inclusive agricultural finance policies.

Against this backdrop this study examined the socio-economic characteristics of small-scale women farmers in Osun State, profiled their sources

of agricultural credit, examines utilisation patterns, analysed determinants of credit access, and explored constraints to financial inclusion. The findings aimed to inform gender-responsive credit policies that can improve women farmers' participation in formal financial markets and support inclusive agricultural development.

METHODOLOGY

The study was carried out in Osun State, Nigeria. Osun State is an inland state in South-Western Nigeria, and it lies within the tropical rainforest region. Its capital is Osogbo and is located between latitude 7° 40'N and 7°45'N and longitude 4° 28'E and 4° 37'N of the Greenwich Meridian. It is bounded to the north by Kwara State, to the east partly by Ekiti State and partly by Ondo State, to the south by Ogun State and to the west by Oyo State. The state covers an area of approximately 10,456 km² with a total population of 3,146,959 (NPC 2006). The state comprises 30 local government areas which are primarily inhabited by core Yoruba people. There are two main seasons; the rainy season which operates between March to October with relatively dry season from November to March. Annual rainfall average is 1570mm while temperature ranges from 25 to 27.5. Osun state lies within the tropical rainforest. Osun state is an agrarian state with large production of some varieties of annual crops, like maize, rice, cowpea, yam, cassava and cocoyam as well as perennial crops such as cocoa, kolanuts, plantain and oil palm.

A multi-stage sampling technique was employed in selecting the samples needed for the study. The first stage involved a purposeful selection of four local government areas based on the population of small-scale women farmers in the state. The local government areas are Ife central, Ilesha-west, Obokun and Osogbo local government. At the second stage, three communities were purposively selected from each of the local government areas, the communities include: Agowande, Ilupeju, Oba-ife, Igbona, Oke-Ake, Agbagbooro, Aba-Somisemu, Adaowode, Otan-Ile, Ilase, Ereja and Isokun. At the third stage, 10 respondents were randomly selected from each community. This was done by collecting the lists of female farmers in this towns from the ADPs under each local government areas, in totality, 120 female farmers were selected.

Primary data were collected through a semi-structured and pre-tested questionnaire administered to women farmers in the selected LGAs. The instrument captured information on socio-economic characteristics (age, household size, education, farming experience), credit information (sources of credit, amount received, interest rates, utilisation of the credit). The questionnaire was validated through expert review and pilot testing in non-sampled LGAs in each state. The Cronbach's

alpha coefficient for internal reliability exceeded 0.70, indicating satisfactory consistency. Data were analysed using descriptive statistics, Probit Model and Likert scale.

Model Specification

Probit Model

The probit model was employed to estimate the determinants of credit accessibility due to its effectiveness in handling dichotomous variables. According to Nagler (1994), the probit model constrains estimated probabilities to lie between 0 and 1, while relaxing the assumption that the effect of independent variables is constant across all predicted values of the dependent variable. In this framework, the observed variable Y takes binary values of 1 or 0. However, there is an unobserved, latent continuous variable (Y^*) that determines the value of Y (Kuwornu *et al.*, 2012). The binary variable Y represents whether a household has access to credit, which in this study is defined as whether or not a household borrows. It is assumed that (Y^*) can be stated as follows:

$$Y_i^* = \beta_0 + \beta_1 X_i + \epsilon_i \dots\dots\dots (1)$$

and that:

$$Y_{1i} = 1 \text{ if } Y^* > 0 \dots\dots\dots (2)$$

$$Y_i = 0 \text{ if } Y^* \leq 0 \dots\dots\dots (3)$$

Positive values relating to Y^* are recognised as $Y=1$, while negative or zero values of Y^* are taken to be $Y=0$. $Y=1$ if a farmer has credit access and 0 if otherwise,

X_1 = age of the female farmers (years),

X_2 = marital status (1=married, 0=otherwise),

X_3 = educational (years spent in school)

X_4 = household size (number of persons)

X_5 = farm size (hectares),

X_6 = farming experience (years),

X_7 = Primary occupation (1=farming, 0=otherwise)

X_8 = membership of cooperatives (member=1, otherwise 0)

X_9 = collateral (1=yes, 0=no)

X_{10} = interest rate (%)

ϵ = error term.

Likert's scale

The constraints to credit access by the women farmers were measured using Likert's scale. The constraints to credit access were measured by asking the respondents to respond to a list of 7 constraints on a 5- point Likert scale from Strongly Agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1). The maximum score was 35 while the minimum score was 7. Mean was obtained for each of the statements and used to rank the constraints.

RESULTS AND DISCUSSION

Socioeconomic characteristics

Table 1 summarised the socio-economic characteristics of the respondents. Approximately 38.3% of respondents were household heads, while 50.8% were married. Marital status is important in rural economies because married women often combine farming responsibilities with domestic care and may access loans for both agricultural purposes and household consumption during off-seasons. This dual responsibility can influence the type, size, and utilisation of loans obtained. The mean age of respondents was 40.21 ± 15.17 years, suggesting that the majority were middle-aged and within their economically active years. Farmers in this age group often possess practical farming experience, social networks, and resilience to production shocks, yet may also face physical limitations compared to younger farmers (Mpuga, 2010). The average household size was 7 ± 2.91 persons, consistent with rural Nigerian norms. Large household sizes can increase dependency ratios, intensifying the need for external financial support to sustain both farm and household consumption. Majority (58%) of respondents identified farming as their primary occupation, and they reported an average of 11.4 ± 6.99 years of farming experience. Such experience often correlates with improved farm management skills, better risk assessment, and more effective credit utilisation (Oladeebo and Oladeebo, 2008). However, prolonged exposure to low-resource farming without adequate financial support can also perpetuate low productivity cycles.

In terms of land tenure, only few (28%) of the women purchased their farmland, while 20% inherited it. The mean farm size was 2.5 ha, indicative of smallholder operations. Limited land size not only constrains production capacity but also reduces collateral value, a critical barrier for women in formal credit markets (Ghebru *et al.*, 2014). The respondents had a mean educational attainment of 10.5 ± 5.20 years, which is relatively high for rural women in Nigeria and suggests potential for higher adoption of improved agricultural technologies and credit management (Osondu *et al.*, 2015; Jirgi, 2021). Cooperative membership stood at 36%, indicating that majority of the women farmers did not belong to cooperative societies. Given that cooperatives often serve as an entry point for credit access, technical training, and marketing support, the relatively low membership rate pointed to an untapped channel for improving women's agricultural financing.

Table 1: Socio-economic characteristics of the women household

Variable	Freq	Percentage	Mean	Standard Deviation
Household head	46	38.3		
Marital status (married)	61	50.8		
Age			40.21	15.17
Household Size			7	2.9
Primary Occupation				
Agriculture	70	58		
Traders	26	22		
Artisans	9	7.5		
Civil servants	15	12.5		
Farming experience			11.4	6.99
Farmland				
Purchase	34	28		
Inheritance	24	20		
Lease	43	35.5		
Rent	19	16.5		
Education			10.5	5.20
Farm size (Ha)			2.5	1.35
Access to credit(yes)	85	70.8		
Membership of Association (yes)	46	36		

Source: Data Analysis, 2023

Credit facilities available and types of cooperative associations they belong to

Figure 1 illustrates the distribution of credit sources utilised by respondents. Microfinance banks emerged as the predominant source (45%) of credit, reflecting their growing role in rural financial inclusion due to relatively flexible lending criteria and smaller loan sizes more suitable for smallholders (Nathanel *et al.*, 2022; Mulatu 2021). These institutions are also more likely to design loan products tailored to agricultural cycles, although interest rates may still be high by commercial standards. Cooperative societies, serving 36% of respondents, emerged as one of the most vital and trusted sources of credit. Their group-based structure enables members to pool resources, reduce transaction costs, and substitute collective guarantees for traditional collateral, thereby widening access to credit for those excluded from formal banking channels (Olomola and Gyimah-Brempong, 2014). Cooperative loans are often

aligned with agricultural production cycles, offer more flexible repayment schedules, and foster mutual accountability among members, which can improve repayment performance. The Bank of Agriculture accounted for 5% of credit access, online banking for 12%, and commercial banks for another 5%. Commercial banks tend to require higher-value collateral and formal documentation, creating barriers for smallholder women farmers (Akram *et al.*, 2020). Informal lenders: including rotating savings associations (30%), moneylenders (17%), and family/friends (20%) also played a significant role. These informal channels offer speed, flexibility, and fewer bureaucratic requirements, making them especially attractive during peak agricultural seasons (Moahid and Maharjan, 2020; Naidoo, 2015). However, they often involve higher implicit costs and shorter repayment periods, which may strain farmers' liquidity.

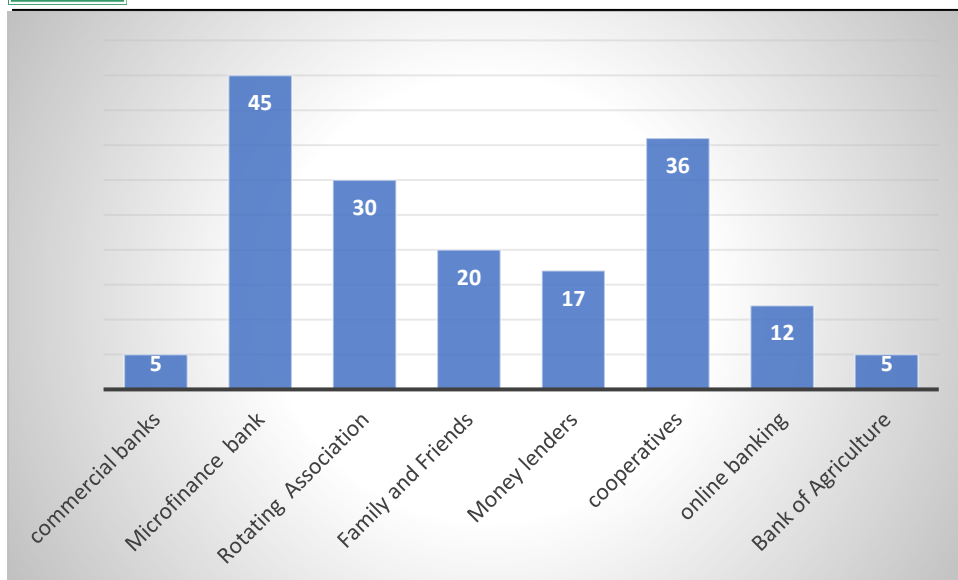


Figure 1: Showing Information about Various Credit Facilities.

Figure 2 showed that the women farmers who were members of cooperative societies belonged to different types such as credit cooperatives (45%) which had the highest patronage, market cooperatives (46%), multipurpose cooperatives (15%), and consumer

cooperatives (4%). The dominance of credit and market cooperatives reflects their dual function in facilitating access to finance and providing market linkages, which together can improve farm profitability.

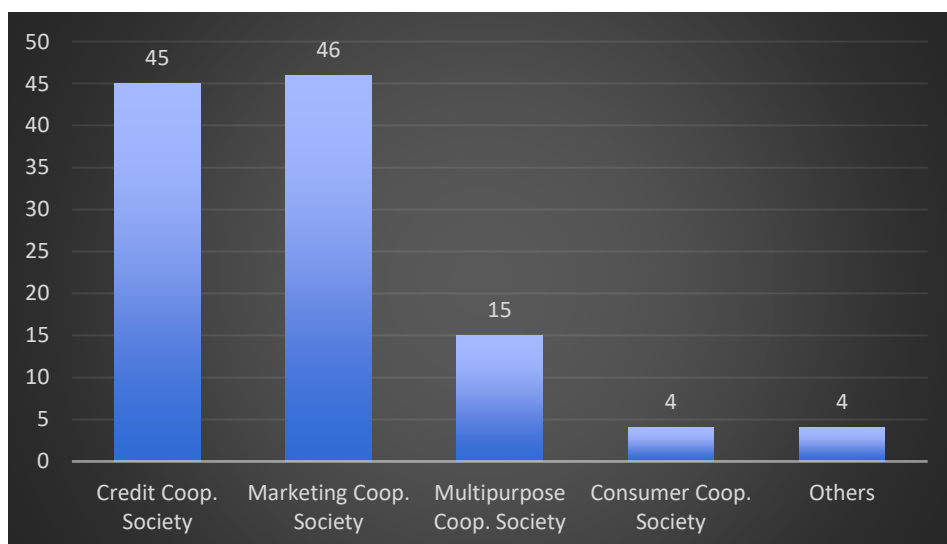


Figure 2: Types of cooperative association that the respondents belonged to

Credit access, Sufficiency, Utilisation, and Repayment

Table 2 revealed that 70.8% of respondents had access to credit, defined here as receiving at least 70% of the amount requested, while 29.2% were unsuccessful in obtaining credit. Loan disbursement modes were split between cash (46.7%) and non-cash forms (53.3%), such as input vouchers or direct provision of agricultural inputs. Loan adequacy remains a pressing challenge: 80% of those who accessed credit considered the amounts insufficient for their farming needs, while only 20% reported sufficiency. This insufficiency likely

contributed to the observed credit diversion patterns, where 50.8% of beneficiaries spent about 50% of the loan on farming activities, 30% allocated about 75%, and only 19.2% dedicated more than 75% of loan value to agriculture. Similar trends have been reported in Ghana and Kenya, where farmers channel part of agricultural loans to pressing household needs (Danso-Abbeam *et al.*, 2016).

Repayment capacity was limited, with 60.8% of borrowers struggling to repay loans. High default rates undermine lender confidence and reduce the willingness of financial institutions to extend future credit, creating a cycle of exclusion.

These findings suggest that without addressing loan adequacy, repayment schedules, and monitoring

mechanisms, credit programmes may not fully achieve their intended productivity gains.

Table 2: Credit access, Sufficiency, Utilisation, and Repayment

Variable	Freq	Percentage
Access to credit facilities		
Received up to 70% requested for	85	70.8
Did not received up to 70% requested for	35	29.2
Sufficiency of the credit funds		
Yes	24	20.0
No	96	80.0
Repayment challenges		
Yes	47	39.2
No	73	60.8
Form of credit that they have access to		
Cash	56	46.7
Non-Cash	64	53.3
How the credit funds were used for agricultural purposes		
Less than or equal to 50%	61	50.8
Less than or equal to 75%	36	30.0
Above 75%	23	19.2

Source: Data Analysis, 2023

Determinants of access to credit among the women farmers

The probit regression results presented in Table 3 showed that age ($\beta = 0.17, p < 0.1$), marital status ($\beta = 0.56, p < 0.1$), level of education ($\beta = 0.48, p < 0.05$), farm size ($\beta = 2.12, p < 0.1$), primary occupation ($\beta = 1.12, p < 0.05$), membership of cooperatives ($\beta = 1.16, p < 0.05$), collateral ($\beta = 2.78, p < 0.1$), and interest rate ($\beta = 0.16, p < 0.1$) each had a positive and statistically significant effect on the probability of women farmers accessing credit. This indicated that socio-economic, institutional, and financial factors collectively influenced women's participation in the rural credit market.

Age was found to be positively correlated with credit access, suggesting that as women farmers grow older, their likelihood of securing loans increases. Age plays a role in shaping decision-making ability, risk perception, and relationships with lenders. Young farmers are often energetic, have higher income-earning potential, and are more willing to invest in productive ventures. Middle-aged farmers tend to show stronger credit demand due to greater family and enterprise responsibilities, whereas older farmers may face reduced credit demand, partly due to declining labour capacity and fewer working household members (Mpuga, 2010). In contexts where informal lending dominates, older farmers often rely on community-based lenders rather than formal credit providers. This study aligns with Olagunju *et al.*, (2015) and Mpuga (2010), who reported that age positively influenced both the decision to apply for and the amount of credit requested. Marital status was also positively and significantly associated with

credit access, with married respondents being 5.6% more likely to secure loans. This may reflect lenders' perception that married individuals are more responsible, stable, and less mobile, reducing the perceived risk of default. Married farmers may also have stronger household networks and social credibility, which can increase trust between borrower and lender. Similar observations were made by Afolabi (2020) and Ololade and Olagunju (2013), who noted that marital stability enhances creditworthiness by signalling reliability and long-term settlement in a given location.

Education exhibited a positive and significant relationship with credit access. Higher educational attainment enhances farmers' ability to navigate loan application procedures, understand repayment terms, and manage borrowed funds effectively. This finding corroborates Akinrotimi *et al.* (2024) and Tang *et al.* (2010), who reported that education increases farm households' capacity to acquire and utilise credit for productive purposes. Education also facilitates access to information about available credit schemes, thereby improving participation in formal financial markets. Farm size had a positive and significant effect on credit access, highlighting the role of land as both a productive asset and a form of collateral. Larger farms tend to result to greater production potential and income-generating capacity, which improves the farmer's creditworthiness. This aligns with Otunaiya *et al.* (2014), who stressed that access to land is a critical driver for female smallholders, especially in contexts where customary land tenure restricts women's ownership rights. In many parts of Nigeria, women are excluded from land inheritance, so those

with land holdings have a distinct advantage in accessing formal credit.

Primary occupation was also significant, with farming as the main occupation increasing the likelihood of credit access. This suggests that women whose livelihoods depend predominantly on agriculture are more motivated to seek and use credit for productive purposes. Conversely, those with other primary occupations may lack the incentive or time to pursue agricultural loans. Membership in cooperative societies significantly and positively influenced credit access. Cooperatives often serve as intermediaries between lenders and farmers, facilitating bulk loan applications, providing loan guarantees, and offering financial literacy training. This collective bargaining power reduces transaction costs for lenders and improves farmers' chances of securing credit. This is in line with the findings of Olomola and Gyimah-Brempong (2014), who noted that farmer cooperatives significantly enhance members' access to credit by reducing transaction costs and providing substitutes for traditional collateral.

Collateral availability was another critical determinant. The positive and significant coefficient

indicated that possession of valuable assets increases access to credit, as these can be pledged to secure loans. However, women in rural Nigeria often face challenges in meeting collateral requirements due to limited property ownership. Ghebru *et al.* (2014) emphasised that land tenure security, defined as certainty over land use, control, and transfer rights, is key to enhancing credit access. In Nigeria, less than 3% of land is formally registered with certificates of occupancy, making it difficult for women to use land as collateral. Households that own durable assets, such as jewellery or machinery, are less likely to be credit-constrained from the supply side.

Interest rate also exhibited a positive and significant relationship with credit access, albeit with complex implications. While lower interest rates can encourage borrowing, excessively low rates may reduce lenders' willingness to supply credit. Conversely, high rates can deter borrowers, especially smallholders with thin profit margins. This study's finding aligns with Akpan *et al.* (2014) and Ololade and Olagunju (2013), who found that higher interest rates influence repayment behaviour and borrowing decisions

Table 3: Determinants of Access to credit among the women farmers

Variable	Coefficient	Std. error	P>z	Z
Age	0.1711	0.0941	0.087	1.81*
Marital Status	0.5681	0.3342	0.090	1.76*
Education Level	0.4891	0.1992	0.019	2.49**
Household size	-0.2183	0.3152	0.489	1.24
Farm Size	2.1254	1.5545	0.091	1.69*
Farming experience	-0.0941	0.0471	0.047	0.91
Primary Occupation	-1.120	0.4696	0.032	2.10**
Membership of cooperative	1.616	0.725	0.026	2.34**
Collateral	2.783	1.870	0.054	1.95*
Interest Rate	-0.161	0.090	0.055	1.93*
Constant	4.851	2.080	.020	0.008
Log Likelihood	-21.089			
LR chi (8)	65.86			
Prob > chi2	0.000			
Pseudo R ²	0.5654			

Source: Data Analysis, 2023

Constraints to credit access

Table 4 presents the ranking of constraints faced by women farmers in accessing credit. Lack of collateral was identified as the most severe challenge (mean = 3.87). In many rural communities, women rarely possess legal titles to land or high-value assets, as property rights are often vested in male household members. This absence of recognised collateral locks them out of most formal lending systems, reinforcing gender-based economic exclusion and limiting their capacity to invest in improved farm inputs. High interest rates (mean = 3.75) constituted another major obstacle. Even when women farmers qualify for loans, the high cost of borrowing discourages uptake or leads

to repayment difficulties, especially given the seasonal nature of agricultural income. The difficulty of obtaining sureties (mean = 3.70) further restricts access. Credit institutions often require guarantors with verifiable income or assets, but women farmers' social networks may lack individuals who meet these criteria or are willing to assume the risk. Short repayment periods (mean = 3.56) also present a structural mismatch with agricultural production cycles. Many crops require several months before yielding returns, making it difficult for farmers to generate the cash flow needed to repay loans within the stipulated time. Delays in loan disbursement (mean = 3.52) undermine the timely acquisition of inputs. Late release of funds

forces farmers to miss optimal planting windows, directly reducing yield potential. A lack of awareness of credit opportunities (mean = 3.35) reflects both information gaps and inadequate financial literacy outreach. Many women farmers remain unaware of available schemes or the procedures required to access them, leaving them dependent on informal credit sources with higher risks and costs. Finally, bureaucracy in loan processing (mean = 3.09) adds to the burden.

Lengthy application procedures, complex documentation requirements, and repeated visits to financial institutions discourage women from pursuing formal credit. These findings mirror those of Akinrotimi *et al.* (2024), who documented similar bottlenecks across Nigeria's rural credit systems. Collectively, they pointed to systemic weaknesses in policy design, gender-sensitive financial services, and the tailoring of loan products to agricultural realities.

Table 4: Constraints to Credit Access among the Women farmers

Constraints	SA	A	U	SD	D	Mean
Lack of Collateral	45	39	20	10	6	3.87
High Interest Rate	42	35	22	13	8	3.75
Difficulty in Getting Surety	41	36	21	13	9	3.70
Short Period of repayment	35	34	26	14	9	3.56
Delay in Disbursement	34	33	27	15	11	3.52
Lack of Awareness of credit facilities	31	30	29	17	13	3.35
Bureaucracy in Loan Processing	23	26	30	21	20	3.09

Source: Data Analysis, 2023

CONCLUSION AND RECOMMENDATIONS

This study examined the socio-economic characteristics, sources and patterns of agricultural credit utilisation, determinants of credit access, and constraints faced by women farmers in Osun State. The findings revealed that the respondents were predominantly middle-aged, experienced farmers operating on smallholder plots averaging 2.5 ha. Despite their significant role in agricultural production, only 70.8% accessed credit, with 80% of them reporting the amounts as insufficient for their farming needs. Microfinance banks emerged as the dominant source of credit (45%), while cooperatives, informal lenders, and family/friends filled the gap left by formal financial institutions. The probit regression results showed that age, marital status, education, farm size, primary occupation, cooperative membership, collateral, and interest rate significantly influenced credit access. Key constraints included lack of collateral, high interest rates, short repayment periods, lack of awareness of credit opportunities, and delays in loan disbursement. These results highlight the persistent gender-specific barriers that limit women's ability to secure and utilise credit effectively, thereby constraining agricultural productivity and household food security. Addressing these barriers is essential for unlocking the full potential of women farmers in enhancing rural livelihoods and advancing food security goals.

The following were recommended:

1. There should be policy reforms on collateral requirements to reflect women's limited land ownership, accepting group guarantees or movable assets as security.
2. Cooperative structures should be expanded to encourage and support women's membership in credit and market

cooperatives so as to enhance bargaining power, reduce transaction costs, and increase access to affordable loans.

3. Loan products should be aligned with agricultural production cycles, featuring longer repayment periods and flexible interest rates.
4. Targeted training for women farmers can improve awareness of available credit schemes, enhance loan management, and reduce default rates.
5. Credit providers should implement systems to ensure loans are utilised for intended agricultural purposes, thereby enhancing repayment performance and long-term sustainability.
6. National and state-level programmes must integrate gender perspectives into the design and implementation of rural financing schemes to address structural inequalities

REFERENCES

- Adegbite, O.O., & Machethe, C.L. (2020). Bridging the financial inclusion gender gap in smallholder agriculture in Nigeria: An untapped potential for sustainable development. *World Development*, 127, 104755.
- Adetiloye, K.A. (2012). Agricultural financing in Nigeria: An assessment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) for food security in Nigeria (1978–2006). *Journal of Economics*, 3(1), 39–48.
- Afolabi, M. (2020). The socio-economic impact of credit on small-scale farmers in Nigeria. *Nigerian Journal of Economic Studies*, 25(1), 44–62.

- Akinrotimi, A.F., Adeyemi, I.O., Oladoyin, O.P., & Olubunmi-Ajayi, T.S. (2024). Assessment of gender inclusion in credit utilization among farmers in Ondo State, Nigeria. *Asian Journal of Advances in Agricultural Research*, 24(11), 40–48.
- Akpan, U.A., Udoh, E.J., & Akpan, S.B. (2014). Analysis of loan default among Agricultural Credit Guarantee Scheme (ACGS) loan beneficiaries in Akwa Ibom State, Nigeria. *African Journal of Agricultural Economics and Rural Development*, 2(2), 121–128.
- Akram, K., Iqbal, M., & Hayat, M.M. (2020). The role of formal and informal credit in the agriculture sector: A case study of District Faisalabad, Pakistan. *Journal of Economic Insights*, 2(3), 99–102. <https://doi.org/10.52223/JEI0301214>
- Aliero, I.H., & Yusuf, M.M. (2017). Analysis of constraints to credit access for SMEs in Sokoto Metropolis. *Asian Journal of Economic Modelling*, 5(2), 167–174.
- Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., & Vaz, A. (2013). The Women's Empowerment in Agriculture Index. *World Development*, 52, 71–91.
- Asogwa, B.C., Abu, O., & Ochoche, G.E. (2014). Analysis of peasant farmers' access to agricultural credit in Benue State, Nigeria. *British Journal of Economics, Management & Trade*, 4(10), 1525–1543. <https://doi.org/10.9734/BJEMT/2014/7326>
- Asom, V.M., Ewurufe, A., & Ijirshar, V.M. (2023). Impact of informal credit on output of small-scale farmers in Nigeria. *Journal of Public Administration, Finance and Law*, 27, 38–55.
- Attamah, C.O., Asadu, A.N., & Eze, C.C. (2020). Women involvement in rural community development in Enugu North Senatorial Zone of Enugu State, Nigeria. *Path of Science*, 6(2), 4001–4007.
- Awotide, B.A., Abdoulaye, T., Alene, A., & Manyong, V.M. (2015). Impact of access to credit on agricultural productivity: Evidence from smallholder cassava farmers in Nigeria. Paper presented at the IAAE Conference, Milan, Italy.
- Ayeomoni, I.O., & Aladejana, O.A. (2016). Agricultural credit and economic growth nexus: Evidence from Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 146–158.
- Azeez, F. A., Usman, J.M., Obadimu, O.O., Mukarumbwa, P., & Kabir, G.B. (2021). Women involvement in cassava value chain among processors and marketers in Oyo State, Nigeria. *Russian Journal of Agricultural and Socio-Economic Sciences*, 110(2), 103–109.
- Balana, B.B., & Oyeyemi, M.A. (2022). Agricultural credit constraints in smallholder farming in developing countries: Evidence from Nigeria. *World Development Sustainability*, 1, 100012.
- Bassey, N.E., Edet, M.E., & Agom, D.I. (2016). Impact of institutional funding on agricultural labour productivity in Nigeria: A co-integration approach. *Agricultural Science Research Journal*, 6(2), 49–55.
- Boucher, S.R., Carter, M.R., & Guirking, C. (2008). Risk rationing and wealth effects in credit markets: Theory and implications for agricultural development. *American Journal of Agricultural Economics*, 90(2), 409–423.
- Boucher, S.R., & Trivelli, C. (2009). Direct elicitation of credit constraints: Conceptual and practical issues with an application to Peruvian agriculture. *Economic Development and Cultural Change*, 57(4), 609–640.
- Chaiya, C., Sikandar, S., Pinthong, P., Saqib, S.E., & Ali, N. (2023). The impact of formal agricultural credit on farm productivity and utilization in Pakistan. *Sustainability*, 15(2), 1217. <https://doi.org/10.3390/su15021217>
- Croppenstedt, A., Goldstein, M., & Rosas, N. (2013). Gender and agriculture: Inefficiencies, segregation, and low productivity traps. *World Bank Research Observer*, 28(1), 79–109.
- Danso-Abbeam, G., Cobbina, M.T., & Antwi, R.A. (2016). Agricultural credit utilization among farmers in Ghana. *Russian Journal of Agricultural and Socio-Economic Sciences*, 51(3), 70–80. <https://doi.org/10.18551/rjoas.2016-03.07>
- Doss, C.R. (2018). Women and agricultural productivity: Reframing the issues. *Development Policy Review*, 36(1), 35–50.
- Food and Agriculture Organization (FAO). (2011). The state of food and agriculture 2010–2011: Women in agriculture—Closing the gender gap for development. Rome: FAO.
- Food and Agriculture Organization (FAO). (2014). The state of food and agriculture: Innovation in family farming. Rome: FAO.
- Food and Agriculture Organization (FAO). (2016). The state of food and agriculture: Climate change, agriculture and food security. Rome: FAO.
- Food and Agriculture Organization (FAO). (2019a). Country gender assessment of agriculture and the rural sector in Nigeria. Rome: FAO.

- Food and Agriculture Organization (FAO). (2019b). The state of food security and nutrition in the world. Rome: FAO.
- Feder, G., Lau, L.J., Lin, J.Y., & Luo, X. (1990). The relationship between credit and productivity in Chinese agriculture: A microeconomic model of disequilibrium. *American Journal of Agricultural Economics*, 72(5), 1151–1157.
- Fletschner, D., & Kenney, L. (2014). Rural women's access to financial services: Credit, savings, and insurance. In A. Quisumbing et al. (Eds.), *Gender in agriculture* (pp. 187–208). New York: Springer.
- Fletschner, D., Anderson, C.L., & Cullen, A. (2010). Are women as likely to take risks and compete? Behavioural findings from Central Vietnam. *Journal of Development Studies*, 46(8), 1459–1479.
- Folarin, E.M., Osabuohien, E.S., Okodua, H., Onabote, A., & Osabohien, R. (2021). Male and female employment in agriculture and agricultural productivity in Nigeria. *IOP Conference Series: Earth and Environmental Science*, 665(1), 012066.
- Ganiyu, L., Abdulkareem, S. B., Anamayi, R. M., Aasa, O. S., Balogun, O. S., Haruna, A. Z., & Aaron, J. A. (2021). Factors Affecting Women Farmers Participation in Agricultural Extension Activities in Kaduna State, Nigeria. *Russian Journal of Agricultural and Socio-Economic Sciences*, 118(10), 76-82.
- Ghebru, H., Edeh, H., Ali, D., Deininger, K., & Okumo, S. (2014). Tenure security and demand for land tenure regularization in Nigeria. IFPRI Working Paper No. 25.
- Gulati, A., & Juneja, R. (2019). Agricultural credit system in India: Evolution, effectiveness and innovations.
- Hananu, B., Abdul-Hanan, A., & Zakaria, H. (2015). Factors influencing agricultural credit demand in Northern Ghana. *African Journal of Agricultural Research*, 10(7), 645–652.
- Ibrahim, S. S., & Aliero, H. M. (2012). Analysis of farmers' access to formal credit in rural Nigeria. *African Journal of Agricultural Research*, 7(47), 6249–6253.
- IDA. (2009). *Agriculture: An engine for growth and poverty reduction*. World Bank.
- Jimi, N.A., Nikolov, P.V., Malek, M.A., & Kumbhakar, S. (2019). The effects of access to credit on productivity. *Journal of Productivity Analysis*, 52(1–3), 37–55.
- Jirgi, A. J., Oseghale, A & Okafor, Q. E. (2021). Food Security Status of Women Rice Farmers in Shiroro Local Government Area of Niger State, Nigeria. *Nigerian Journal of Agricultural Economics*, 11(1)
- Kaye, M. V., Gerlyn, E. M., Glaizy, M. B. R., Renzo, S. C., Joshua, E. V., & Russell, V. (2024). The Agri-credit accessibility and the utilization of Agri-loan proceeds of rice farmers. *WORLD*, 24(3), 2555-2575.
- Khandker, S.R., & Koolwal, G.B. (2016). How has microcredit supported agriculture? *Agricultural Economics*, 47(2), 157–168.
- Kosgey, Y.K.K. (2013). Agricultural credit access by grain growers in Kenya. *Journal of Economic Finance*, 2(3), 36–52.
- Kuwornu, J.K., Ohene-Ntow, M.D.I., & Brempong, S. (2012). Agricultural credit allocation and constraint analyses. *British Journal of Economics, Management and Trade*, 2(4), 353–374.
- Mogues T., Fan S. (2015): Benin public investments in and for agriculture. *European Journal of Development Research*, 27(3): 337–352.
- Moahid, M., & Maharjan, K. L. (2020). Factors affecting farmers' access to formal and informal credit: Evidence from rural Afghanistan. *Sustainability*, 12(3), 1268.
- Mulatu E. (2021): Review on farmers' microfinance services participation and its impact on poverty reduction in Ethiopia. *Current Agriculture Research Journal*, 9: 4–15. doi: 10.12944/CARJ.9.1.02
- Mpuga, P. (2010). Constraints in access to rural credit: Evidence from Uganda. *African Development Review*, 22, 115–148.
- Nagac K. & Huawa S.B. (2016): The role of education in female labour force participation in Nigeria. *Journal of Economics and Finance IOSR-JEF*, 7(1): 56–62.
- Nagler, J. (1994). *Interpreting probit analysis*. New York University.
- National Bureau of Statistics. (2021). *Statistical report*. Nigeria.
- Nathanel N.N., Ukpe U.H., Fani D.C.R., Divine E.N. (2022): Determinants of credit accessibility and performance of smallholder rice farmers: A case of the West region of Cameroon. In *Advances in African economic, social and political development* (pp. 57–67). doi: 10.1007/978-3-031-19527-3_6
- Naidoo, K. (2015). *Financing smallholder farmers: Growth potential*. Organisation for Economic Cooperation and Development. The OECD Observer, (303), 29.
- Odoemenem, I. U., & Obinne, C. P. O. (2010). Assessing the factors influencing the utilization of improved cereal crop production technologies by small-scale farmers in Nigeria. *Indian Journal of Science and technology*, 3(1), 180-183.
- Okojie, C., Monye-Emina, A., Eghafona, K., Osaghae, G., & Ehiakhamen, J. O. (2010).

- Institutional environment and access to microfinance by self-employed women in the rural areas of Edo State.
- Ojiako, I. A., & Ogbukwa, B. C. (2012). Economic analysis of loan repayment capacity of smallholder cooperative farmers in Yewa North Local Government Area of Ogun State, Nigeria. *African Journal of Agricultural Research*, 7(13), 2051-2062.
- Oladeebo, J. O., & Oladeebo, O. E. (2008). Determinants of loan repayment among smallholder farmers in Ogbomoso agricultural zone of Oyo State, Nigeria. *Journal of Social Sciences*, 17(1), 59-62.
- Ololade, R.A., & Olagunju, F.I. (2013). Determinants of access to credit among rural farmers. *Global Journal of Science Frontier Research*, 13(2), 16–22.
- Olomola, A. S., & Gyimah-Brempong, K. (2014). Loan demand and rationing among small scale farmers in Nigeria
- Olagunju O., Adekunle A., & Bello T. (2015): Determinants of credit uptake among youth farmers in Nigeria. *Journal of Agricultural Policy*, 19(2): 67–85.
- Osondu, C. K., & Ibezim, G. M. C. (2015). Awareness and perception of farmers to the use of Information and Communication Technologies (ICTs) in agricultural extension service delivery: a case study of Imo State, Nigeria.
- Oyedele G.A., Akintola J.O., Rahji M.A.Y., & Omonona B.T. (2009): Credit constrained condition of farm households and profitability of agricultural production in Nigerian agriculture. *Agricultural Journal*, 4(4): 192–201.
- Otunaiya A.O., Ologbon O.A.C., & Akerele E.O. (2014): Analysis of agricultural loan use decision among poultry farmers in Oyo State, Nigeria. *International Journal of Poultry Science*, 13(2): 108–113
- Oyetade, O.O., & Adeyeye, O. (2021). Impact of agricultural output on economic growth in Nigeria. *Turkish Journal of Computer and Mathematics Education*, 12(12), 1793–1801.
- Rahimah R., Sarman M., & Nur M.A. (2018): Utilization of capital loans and saving loan on women's activities. *European Journal of Social Sciences Studies*.
- Sanglay P.M., Apat E.J., Sumague J., & Tec E. (2021): Financial literacy and income distribution of rice farmers. *International Journal of Accounting, Finance and Education*, 2(3): 1–21.
- Simonyan J.B., Okoye B.C., & Ezech C.I. (2010): Gender differentials in technical efficiency among maize farmers in Nigeria. *African Journal of Agricultural Research*, 5(23): 3210–3214.
- Tang S., Guan Z., & Jin S. (2010): Formal and informal credit markets and rural credit demand in China. In *Agricultural & Applied*.
- Ugoani J., Emenike K., & Ben-Ikwunagum D. (2015): Measuring farmers' constraints in accessing bank credit through the Agricultural Credit Guarantee Scheme Fund in Nigeria. *American Journal of Marketing Research*, 1(2): 3–60.
- Wossen, T., Abdoulaye, T., Alene, A., Haile, M. G., Feleke, S., Olanrewaju, A., & Manyong, V. (2017). Impacts of extension access and cooperative membership on technology adoption and household welfare. *Journal of rural studies*, 54, 223-233.