

Factors determining credit accessibility among women crop farmers in Ogbomoso Agricultural Development Programme (ADP) Zone of Oyo State, Nigeria

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Abstract

Agricultural credit is an important tool for agricultural transformation and growth in an economy. This study examined the factors determining credit accessibility among women crop farmers in the Ogbomoso Agricultural Development Programme zone of Oyo State, Nigeria. Women crop farmers were randomly selected for the study using a multistage sampling technique. The data obtained for the study were analyzed using descriptive statistics and a binary logistic regression model. The result indicated that 76.7% of the women crop farmers were married, with an average household size of 6 persons and an average farming experience of 17 years. The result revealed that women crop farmers in the study area sourced credit from cooperatives, community savings, and commercial banks, among others. The result further showed that age, being a member of a cooperative society, and the number of times visited by the extension agent were significant factors determining credit accessibility among women crop farmers in the study area. The result indicated that distance to financial institutions, high interest rate charges, short loan repayment period, inadequate credit information, and awareness among others were significant constraints to credit access among women crop farmers.

Keywords: credit, credit accessibility, women crop farmers.

Fatores que determinam o acesso ao crédito entre mulheres agricultoras de culturas agrícolas na Zona do Programa de Desenvolvimento Agrícola (ADP) de Ogbomoso, Estado de Oyo, Nigéria

Resumo

O crédito agrícola é uma importante ferramenta para a transformação e o crescimento da agricultura em uma economia. Este estudo examinou os fatores que determinam o acesso ao crédito entre mulheres agricultoras de culturas agrícolas na zona do Programa de Desenvolvimento Agrícola (Agricultural Development Programme – ADP) de Ogbomoso, no estado de Oyo, Nigéria. As participantes foram selecionadas aleatoriamente por meio de uma técnica de amostragem em múltiplos estágios. Os dados obtidos foram analisados por meio de estatística descritiva e de um modelo de regressão logística binária. Os resultados indicaram que 76,7% das mulheres agricultoras eram casadas, com tamanho médio da família de seis pessoas e experiência média de 17 anos na atividade agrícola. Verificou-se que as agricultoras obtinham crédito principalmente por meio de cooperativas, grupos de poupança comunitária e bancos comerciais, entre outras fontes. Os resultados também demonstraram que a idade, a participação em cooperativas e o número de visitas realizadas por agentes de assistência técnica e extensão rural foram fatores significativos na determinação do acesso ao crédito entre as agricultoras da área de estudo. Além disso, os resultados indicaram que a distância até as instituições financeiras, as elevadas taxas de

juros, o curto período para pagamento dos empréstimos, a insuficiência de informações sobre crédito e a baixa conscientização, entre outros fatores, constituíram restrições significativas ao acesso ao crédito pelas mulheres agricultoras.

Palavras-chave: crédito, acesso ao crédito, mulheres agricultoras de culturas agrícolas.

1. Introduction

In Nigeria, the agricultural sector remains a major contributor to the economy, employing more than 60% of the rural population and accounting for approximately 25% of the Gross Domestic Product (Okodua, 2018; World Bank, 2020). In the sector, one of the important factors in improving farm productivity, income, as well as the livelihood of rural farmers, especially women, is having access to credit. In developing countries like Nigeria, women make up a sizeable proportion of the workforce, particularly in crop production in the agricultural sector (FAO, 2011; Uduji; Okolo-Obasi, 2018).

Within this sector, the involvement of women in crop farming is increasing, but they continue to face disproportionate barriers in accessing credit due to factors such as lack of collateral, low literacy levels, institutional discrimination, and socio-cultural norms (Akinbami et al., 2019). Despite their vital contribution to food security and rural development, women farmers have limited access to farm inputs, agricultural extension services, and credit, among others (Odoemenen; Obinne, 2010; FAO, 2019) and are often faced with constraints in accessing resources for production, with credit being one of the most limited factors (Olawuyi; Adetunji, 2013). Limited availability of credit among farming households has affected the income activities of farmers as a result of a lack of capital for investment, which has prevented farmers from adopting improved farming practices (Ajah et al., 2018; David et al., 2022; Vasaviet al., 2025)

Credit is essential for acquiring farm inputs, hiring labor, expanding farm size, adopting improved technologies, and increasing income among rural farmers in Nigeria (Akpan et al., 2013a), yet most women depend on informal sources such as thrift groups, cooperative societies, or family loans, which are often insufficient. Credit can be obtained from both formal and informal sources (Falola et al., 2022; Nweze, 2011; Olomola; Yaro, 2015). Formal sources include credit institutions, commercial banks, microfinance banks, government and cooperative societies, while informal sources include friends, local money lenders, traders, and merchants (Olaoye et al., 2012).

In line with the sources, several credit schemes have been introduced by the government and financial institutions in Nigeria, such as the Agricultural Credit Guarantee Scheme (ACGS), Commercial Agriculture Credit Scheme (CACS), and the Anchor Borrowers' Programme. Despite the introduction of the credit schemes, access to these services remains unequal and limited for women (Nwankwo et al., 2020).

On the issue of credit accessibility among farmers, studies (Adeomi et al., 2023; Ndzaruwa et al., 2022; Simonyan et al., 2019; Oboh; Ekpebu, 2011; Akpan et al., 2013a) have shown that rural farmers' access to credit is greatly influenced by factors such as age, educational level, farm size, household income, and membership in cooperative societies. However, there is a need to look at these findings based on specific gender categories. Despite the increasing recognition of women's role in agriculture, research focusing on credit accessibility among women crop farmers in the Ogbomoso ADP zone is limited.

There is also a lack of comprehensive understanding of how socio-economic and institutional variables interact to influence credit access in this context. Therefore, this study specifically described the socio-economic characteristics of women crop farmers; assessed the major sources of credit among women crop farmers; assessed factors determining the credit access of women crop farmers and identified the constraints to credit access by women crop farmers in the study area.

2. Materials and Methods

2.1 Study area

The study was carried out in the Ogbomoso agricultural zone of Oyo State, Nigeria. The agricultural zone comprises of five (5) local government areas: Ogbomoso North, Ogbomoso South, Oriire, Surulere, and Ogo-oluwa. The rainy season in the zone usually begins in April and lasts until October, while the dry season commences in November and lasts until March. The majority of the population in the study area is farmers who are known mostly for planting tubers and cereal crops. Crops grown include yam, cassava, soybeans, groundnut, millet, maize, guinea-corn, cocoyam, vegetables, and fruits.

2.2 Sampling procedure

The respondents for the study were selected using a multistage sampling technique. Two (2) local governments were randomly selected from the five (5) agricultural zones in Ogbomoso at the first stage. Three (3) villages were randomly selected from the two (2) randomly picked LGAs, resulting in six (6) villages at the second stage. Lastly, fifteen women crop farmers were randomly selected from the six villages, which gives a total of ninety (90) women crop farmers as the sample size.

2.3 Analytical techniques

The data collected were analysed using descriptive and inferential statistical techniques. Descriptive statistics were used to profile the socio-economic characteristics of women crop farmers, to profile sources of credit among women crop farmers, and to identify the constraints facing women crop farmers in accessing credit in the study area. Inferential statistics, which involved the use of logistic regression analysis to examine the factors determining credit accessibility among women crop farmers in the study area. The logistic regression model equation is expressed as;

$$\log(p/(1-p)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$$

where:

p is the probability of the outcome (success or event occurring)

$X_1, X_2, \dots, X_n$ denote predictor variables

$\log(p/(1-p))$ is called the logit function, representing the log-odds of the outcome

β_0 intercept term indicating log-odds when all predictor variables are zero

$\beta_1, \beta_2, \dots, \beta_n$ are regression coefficients showing change in log-odds for a one-unit increase in the corresponding predictor variable.

And the regression equation is given by:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$$

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + e$$

Model Specification

Where;

Y = access to credit (i.e Yes = 1; No = 0)

X_1 = age of the respondents (years)

X_2 = marital status (married = 1; others = 0)

X_3 = years spent in school (years)

X_4 = household size of the respondents (members)

X_5 = member of cooperative society (member=1, non-member=0)

X_6 = extension visits (number of times visited)

X_7 = farm size (hectares)

e = constant

3. Results

3.1 Socio-economic characteristics of respondents

3.1.1 Age

Table 1 indicates that most respondents were between 41 and 50 years of age, while the least proportion (8.9%) fell above 61 years of age.

3.1.2 Marital Status

The findings revealed in Table 1 show that 76.7% of the respondents were married, while 10.1 % were widowed, 7.8% were single, and 3.3 % were separated.

3.1.3 Household size

The household size indicated that 61.1% of the respondents had a household size ranging from 4 to 6 members, 26.7% had between 7 and 9 members, while 10% had less than 3 members.

3.1.4 Educational Level

For educational attainment, the result shows that 43.3% had up to primary education, 40.0% had secondary education, 12.2% had no formal education, and 4.4% had tertiary education.

3.1.5 Farming experience

The result in Table 1 revealed that 34.4% had below 10 years of experience, 33.3% had between 11 and 20 years of experience, while 25.6% had between 21 and 30 years of experience.

Table 1. Socio-economic characteristics of women crop farmers.

Characteristics	Category	Frequency (Percentage)
Age Group (years)	31 – 40	19 (21.1)
	41 – 50	35 (38.9)
	51 – 60	28(31.1)
	> 61	8 (8.9)
Marital status	Single	7 (7.8)
	Married	69 (76.7)
	Separated	3 (3.3)
	Divorced	1 (1.1)
	Widowed	10 (11.1)
Household size (persons)	≤ 3	9 (10.0)
	4 – 6	55 (61.1)
	7 – 9	24 (26.7)
	> 9	2 (2.2)
Education level	No formal education	11(12.2)
	Primary education	39 (43.3)
	Secondary education	36 (40.0)
	Tertiary education	4 (4.4)
Farming experience (years)	≤ 10	31 (34.4)
	11 – 20	30 (33.3)
	21 – 30	23 (25.6)
	31 – 40	5 (5.6)

	> 40	1 (1.1)
Cooperative society	Yes	89 (98.9)
	No	1 (1.1)
Extension visit (%)	Yes	89 (98.9)
	No	1 (1.1)

3.2 Distribution of respondents by the sources of credit among women crop farmers

Table 2 shows the distribution of the respondents according to their source of credit. The result indicated that 97.8% of the women farmers sourced credit from cooperative societies, 54.5% obtained credit from community savings, 46.7% of the women farmers sourced credit through commercial banks, and 31.1% sourced credit through relatives/friends, while 5.6% of the women farmers sourced credit from a money lender.

The result indicates that most women farmers source their credit from cooperative societies and community savings, with commercial banks and relatives/friends also being significant sources of credit. This implies that the reliance on informal credit sources, such as cooperative societies and community savings, may limit access to larger loans with favorable terms, suggesting a need for formal financial institutions to enhance credit facilities for women farmers in the study area.

Table 2. Sources of credit among women crop farmers.

Sources of Credit	Frequency	Percentage (%)
Commercial bank	42	46.7
Cooperatives	88	97.8
Money lender	5	5.6
Relatives & Friends	28	31.1
Community savings	49	54.5
Total	90	100.0

Note: *Multiple responses. Source: Authors, 2026.

3.3 Factors determining credit accessibility among women crop farmers

Table 3 shows the factors determining credit accessibility among women crop farmers in the study area. The logistic regression estimates of factors determining credit accessibility among women crop farmers show that the Prob > chi, which equals 0.0000, suggests that the independent variables collectively have a significant effect on the likelihood of credit accessibility of the respondents. The pseudo-R² value of 0.541 indicates that approximately 54.1% of the variation in credit accessibility can be explained by the variables included in the model. Three out of the seven explanatory variables (age, member of cooperative society, and number of times visited by the extension agent) that were incorporated into the model were statistically significant. The coefficient of age was negatively related to credit accessibility among women crop farmers, while being a member of a cooperative society, as well as constant visits by the extension agents to the respondents, showed a positive sign, which had a positive influence on their credit accessibility.

The coefficient of being a member of a cooperative society is positive and statistically significant at 1%, indicating that the more women crop farmers belong to a cooperative society, the more likely they are to have access to credit. Implying that women crop farmers who belong to a cooperative society or an association are more likely to access credit than their counterparts who do not belong to a cooperative society or an association. Also, extension visits by the extension agents were positive and statistically significant at 10%, implying that the more extension agents visit women crop farmers, the more they would have access to credit. Indicating that extension visits play an important role in the operations of women crop farmers, as the extension agent serves as a source of information and encourages farmers to use credit for productive purposes. On the other hand, the coefficient of age of the respondent was negative and statistically significant at 10%. The age of the respondent influences credit accessibility. This implies that the older the women farmers, the less likely they are to have

access to credit. Indicating that as women age, access to credit is likely to reduce, probable reasons for this could be that as women grow, the potential and energy to have more income and grow investment reduces compared to younger women who are usually energetic and have more income-earning potential.

Table 3. Logistic regression estimates of factors determining credit accessibility.

Credit Accessibility	Coefficient	Standard Error	Z Value	P> z
Age	00.87	0.071	-1.72*	0.086
Marital status	6.638	07.71	1.63	0.103
Educational status	0.918	0.138	-0.57	0.571
Household size	1.898	0.814	1.50	0.135
Member of a cooperative society	4.065	5.046	2.74***	0.006
Extension visits	1.113	0.071	1.68*	0.094
Farm size	2.169	1.554	1.08	0.280
Constant	0.037	00.17	-0.72	0.472
Prob > Chi = 0.0000				
Chi-square = 42.060				
Pseudo R ² = 0.541				

Note: *** significance at 1%; * significance at 10%. Source: Authors, 2026.

3.4 Constraints to credit access among women crop farmers

Constraints to credit access among women crop farmers were presented in Table 4. Table 4 presents the distribution of women crop farmers by their constraints to access credit. The result shows that the majority (70%) of the respondents faced the constraints of distance to financial institutions, and most (68.9% and 67.8%) faced the constraints of high-interest rate charges and short loan repayment periods, respectively. Also, 57.8%, and 52.2% faced the constraints of inadequate credit information and awareness, and poor credit advisory respectively, and 50% faced the constraints of complex loan application procedures, and lack of collateral respectively, and 48.9%, 47.8%, and 43.3% faced the constraints of delay in approval/disbursement, limited financial literacy, and lack of guarantor respectively, while 22.2% and 13.3% of the women farmers faced the constraints of lack of formal documentation, and discrimination based on gender respectively, in the study area. The result implies that women farmers face multiple constraints in accessing credit, with the most common being distance to financial institutions, high-interest rates, and short loan repayment periods in the study area.

Table 4. Distribution of respondents by constraints to credit access.

Constraints to Credit Access	Frequency	Percentage (%)
Lack of collateral	45	50.0
High-interest rate charges	62	68.9
Complex loan application procedures	45	50.0
Limited financial literacy	43	47.8
Discrimination based on gender	12	13.3
Poor credit advisory	47	52.2
Inadequate credit information and awareness	52	57.8
Short loan repayment period	61	67.8
Distance to financial institution	63	70.0
Lack of formal documentation	20	22.2
Delay in approval/disbursement	44	48.9

Lack of guarantor	39	43.3
Total	90	100.0

Note: *Multiple responses. Source: Authors, 2026.

4. Discussion

4.1. Age

The predominance of respondents between 41 and 60 years suggests that crop farming in the study area is largely undertaken by middle-aged women who are still economically active but may face increasing physical and financial limitations as they grow older. Younger women often migrate to urban areas in search of alternative employment opportunities, reducing youth participation in agriculture and contributing to the ageing farming population observed in many developing countries. This demographic pattern may negatively influence innovation adoption, investment capacity, and long-term farm productivity. Moreover, financial institutions frequently perceive older farmers as having shorter investment horizons and lower repayment capacity, which may reduce their access to formal credit. Similar age distributions among women farmers have been reported in Nigeria and other Sub-Saharan African countries, where middle-aged women constitute the dominant agricultural workforce (Adebayo; Worth, 2024; Adeomi et al., 2023; FAO, 2023; IFAD, 2023; Vicent, 2022).

4.2 Marital status

The high proportion of married women reflects the predominance of family-based agricultural systems in rural Nigeria, where farming activities are commonly organized around household labor and shared family resources. Marriage may improve access to credit through greater household income, shared assets, and social networks, but it may also limit women's financial autonomy where household financial decisions are primarily controlled by male spouses. Similar findings have been reported in several African countries, indicating that marital status can simultaneously facilitate and constrain women's access to agricultural finance depending on local cultural norms and property rights (Wamboye, 2024). These findings reinforce the importance of considering household decision-making structures when designing rural credit policies targeting women farmers (FAO, 2023; World Bank, 2024; Nwankwo et al., 2020).

4.3 Household size

Most respondents belonged to households with four to six members, suggesting the availability of family labor for crop production. Larger households can reduce hired labor costs while simultaneously increasing household consumption needs, thereby creating a greater demand for agricultural credit to finance production activities. However, high dependency ratios may also reduce disposable income available for loan repayment, increasing lenders' perception of financial risk. Similar relationships between household size and agricultural credit demand have been reported in several developing countries, where household composition significantly influences both borrowing behavior and repayment performance (FAO, 2023; Kassegn; Endris, 2021; World Bank, 2024; Ndzaruwa et al., 2022).

4.4 Educational level

The predominance of primary and secondary education indicates relatively low educational attainment among women crop farmers in the study area. Educational level plays a critical role in improving farmers' financial literacy, understanding of loan requirements, record keeping, and ability to complete formal credit applications. Farmers with higher educational attainment are generally more capable of evaluating financial opportunities and adopting improved agricultural technologies, which increases lenders' confidence in their repayment capacity. Similar evidence has been reported across Sub-Saharan Africa, demonstrating that education positively influences financial inclusion, agricultural commercialization, and access to institutional credit among rural women (Adigun, 2022; FAO, 2023; World Bank, 2024).

4.5 Farming experience

The moderate farming experience observed among respondents demonstrates that most women possess

considerable practical knowledge of crop production, farm management, and local production systems. Experienced farmers are generally perceived by financial institutions as less risky borrowers because they often have more stable production records, stronger social capital, and better knowledge of credit utilization. Nevertheless, farming experience alone may not guarantee access to formal credit if collateral requirements, institutional barriers, and financial literacy remain limited. Similar findings have been reported in recent studies conducted in Nigeria and other African countries, highlighting that farming experience contributes positively to credit accessibility when supported by cooperative membership and effective agricultural extension services (Adeomi et al., 2023; FAO, 2023; IFAD, 2023).

5. Conclusions

This study demonstrated that women crop farmers in the Ogbomoso Agricultural Development Programme (ADP) Zone rely predominantly on cooperative societies as their principal source of agricultural credit, while access to formal financial institutions remains limited. The findings revealed that age, cooperative membership, and the frequency of extension visits significantly influence women's access to agricultural credit. In contrast, structural barriers—including long distances to financial institutions, high interest rates, short loan repayment periods, inadequate access to credit information, and limited financial awareness—continue to restrict financial inclusion among rural women farmers.

These findings highlight that improving women's access to agricultural credit requires more than simply increasing the availability of financial resources. Strengthening farmer cooperatives, expanding agricultural extension services, promoting financial literacy, and developing more inclusive lending policies are essential strategies for enhancing women's participation in formal financial systems. Likewise, financial institutions should consider adopting more flexible lending conditions, including lower collateral requirements, longer repayment periods, and credit products specifically designed for smallholder women farmers.

From a public policy perspective, the results support the implementation of integrated rural development programs that combine agricultural finance, extension services, cooperative strengthening, and financial education. Such interventions could improve agricultural productivity, increase household income, enhance food security, and contribute to achieving the Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 5 (Gender Equality), and SDG 8 (Decent Work and Economic Growth).

Despite its contributions, this study is limited by its relatively small sample size and its focus on a single agricultural zone in Oyo State, which may limit the generalizability of the findings to other regions of Nigeria. Future research should employ larger and more geographically diverse samples, incorporate additional socioeconomic, institutional, and behavioral variables, and adopt longitudinal approaches to better understand how credit accessibility changes over time. Comparative studies across different regions and the application of advanced econometric techniques, such as multilevel or spatial regression models, would also provide a deeper understanding of the determinants of agricultural credit accessibility among women farmers.

Overall, improving access to affordable agricultural credit for women farmers represents a strategic investment not only in agricultural development but also in rural economic transformation, poverty reduction, and sustainable agricultural growth in Nigeria.

6. Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance credit accessibility among women crop farmers:

Strengthening Cooperative Societies: Cooperative societies should be strengthened, and access to affordable credit facilities essential for better capital sourcing by the respondents should be expanded.

Provision of Educational Programs: The government or private sectors should provide targeted educational programs to enhance financial literacy, enabling better credit utilization of the women farmers in the study area.

Establishment of Closer Financial Institutions: There is a need for the establishment of financial institutions closer to rural areas to reduce the distance barriers to credit access by the women farmers in the study area.

7. Authors' Contributions

Damilola Toluse Adeomi: conceptualization, designed the experiment, analyzed the data, contributed analytical

tools, and corrected the draft. *Deborah Tosin Fajobi*: experimented and interpreted the data, wrote the first draft. *Janet Temitope Ojediran*: experimented and interpreted the data. *Olasunbo Kafilat Jubreel*: experimented with and interpreted the data.

8. Conflicts of Interest

No conflicts of interest.

9. Ethics Approval

Not applicable. Formal approval from a Human Research Ethics Committee was not required for this study because it involved only the direct collection of data from consenting adult participants and did not include any invasive procedures, clinical interventions, or experiments involving human biological materials. According to the institutional policies of *Ladoke Akintola University of Technology*, Nigeria, studies of this nature may be exempt from ethics committee review. The study was conducted in accordance with the ethical principles of the *Declaration of Helsinki*. All participants voluntarily provided written informed consent before participating in the study. Participant anonymity and confidentiality were strictly maintained throughout the research, and all data were analyzed and reported in an aggregated manner to ensure privacy.

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Institutional Review Board Statement

Not applicable. According to the institutional policies of Ladoke Akintola University of Technology, Nigeria, this type of non-invasive study involving consenting adult participants is exempt from formal Institutional Review Board (IRB) or Human Research Ethics Committee approval.

Informed Consent Statement

Written informed consent was obtained from all participants involved in the study.

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