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DETERMINANTS OF ACCESS TO CREDIT AMONG SMALLHOLDER FARMERS IN SOUTHEAST NIGERIA: A GENDER ANALYSIS

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ABSTRACT: *Smallholder farmers in developing countries are being constrained by access to credit and this hinders agricultural productivity and food security. Despite the growing importance of credit in improving agricultural productivity and food security, gender disparities in access to credit continue to pose a challenge, especially in rural Nigeria where smallholder farming dominates household livelihoods. This study examined the determinants of access to credit among smallholder farmers in Southeast Nigeria with emphasis on gender analysis. A semi structured questionnaire was used to collect data from 239 smallholder farmers in Southeast Nigeria. The data were analyzed using descriptive statistics, chi-square and binary logistic regression. The result of the descriptive statistics showed that only 20.9% of farmers had access to bank credit, representing significant financial exclusion in the study area. The logistic regression results showed a gender difference in access to bank credit with the male farmers been more likely to access credit than their female counterparts. However, the logistic regression results further revealed that, after controlling for socioeconomic and institutional factors, gender had no significant independent effect on access to bank credit. Instead, education, financial literacy, and membership of a registered cooperative were the significant determinants of access to bank credit. The findings implies that apparent gender gaps in access to bank credit could be largely due to differences in underlying socio-economic conditions such as education, financial literacy, and institutional factors rather than direct gender discrimination. The study concludes that improving access to credit for male and female smallholder farmers in Southeast Nigeria requires policies that address structural constraints.*

KEYWORDS: *Access to credit, Gender, Smallholder farmers, and productivity*

Introduction

Access to credit among smallholder farmers in Nigeria has become a persistent development challenge because it directly affects agricultural productivity, rural livelihoods, and food security. Credit increases

farm productivity and household well-being by allowing farmers to adopt new technology, invest in better inputs, and absorb shocks. (Ali & Awade 2019; Azubugwu & Osuafor, 2019). Smallholder farmers, who constitute the majority of farming population particularly in Sub-Saharan Africa, are often severely financially constrained, leaving them excluded from formal financial markets (Zulu *et al*., 2024; Missiame *et al.,* 2021; Ali & Awade 2019). This financial exclusion limits their ability to invest in improved inputs, adopt modern technologies, withstand climate and market shocks, and expand production thereby perpetuating low productivity and poverty cycles.

Credit refers to financial resources provided by lenders under agreed repayment conditions. In agriculture, credit plays a central role in enabling farmers to purchase inputs, hire labour, invest in equipment, and adopt improved technologies (Ali & Awade, 2019; Zulu *et al*., 2024). For smallholders, who often face liquidity constraints, access to credit is critical for farm expansion and resilience. Importantly, access goes beyond actual borrowing to include loan availability, eligibility, collateral requirements, affordability, and proximity to institutions (EFInA, 2023; CBN, 2023). Despite numerous government interventions, persistent gaps remain in Nigeria's rural finance landscape, particularly in regions such as Southeast Nigeria.

Gender in contrast to sex, which is biological, refers to the socially constructed roles, behaviors, obligations, and power dynamics associated with men and women in society. Access to resources like land, labor, education, finance, knowledge, and decision-making opportunities is influenced by gender. Gender in contrast to sex, which is biological, refers to the socially constructed roles, behaviors, obligations, and power dynamics associated with men and women in society. Access to resources like land, labor, education, finance, knowledge, and decision-making opportunities is influenced by gender.

Credit boost farmers capacity and enables them to invest in resilient modern technologies that will enhance productivity and encourage food security. Access to credit is increasingly important for climate resilience and generates multiple welfare effects for farming households (Zhao *et al.,* 2022; Achoja et al. 2020; Ali & Awade 2019). Empirical studies show that improved credit access can enhance productivity and technical efficiency (Zulu et al., 2024; Omodara et al., 2023; Kehinde et al., 2021). Studies of Aroyehun et al., 2024; Adeagbo & Adetoro 2021; Omodara et al., 2023 and found that access to credit support climate adaptation. Similarly, Zulu et al., 2024; Akrong et al., 2021; Loko et al., 2021; Wale et al., 2021 observed that credit enables high value market participation entrepreneurship. Also, CCAFS (2016), found that closing gender gap in accessing financial services and other productive resources and decision making would result in a 20-30 percent increase in yields on farms managed by

women, thus enhancing food security. These findings suggest that expanding credit access among Nigerian smallholders could stimulate farm investment, productivity, and rural development.

Resurrection et al. (2019) reported that there is gender gap in accessing financial services with female farmers facing higher barriers, especially in rural areas. Female farmers across many developing economies are disproportionate constrained in accessing credit finance due to limited access to productive resources, sociocultural and institutional (Yiridomoh et al. 2022; Eastin 2018). Although smallholder female farmers contribute substantially to agricultural labour, food production, and household welfare, they often remain underserved by formal finance systems (Tsige *et al.*, 2020). This creates unequal opportunities for farm expansion, technology adoption, climate adaptation, and development.

Several interventions have been made by the government to address the problem of limited access to credit among smallholder farmers in Nigeria such as the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB, 2000) and the Agri-Business/Small and Medium Enterprises Investment Scheme (AGSMEIS, 2017). The government has also put emergency measures into place, such as the Targeted Credit Facility (TCF, 2020) and productivity-boosting support programs like the Growth Enhancement Support Scheme (GESS, 2011). Although these interventions tend to increase formal credit lending, boost productivity and improve food security, significant gaps remain. Accessing credit has been limited by bureaucratic bottlenecks, collateral requirements, repayment defaults, weak rural banking infrastructure and limited rural outreach (NBS, 2020). EFInA (2023); noted that 28.8 million adult Nigerians, remain without access to basic financial services.

In Southeast Nigeria, smallholder farmers form the backbone of agricultural production, yet they remain vulnerable to credit constraints that hinder investment in practices that enhance productivity. Most recent studies in Africa on the determinants of access to credit are on the demographics (Zulu et al., 2024; Missiame et al., 2021; Ali & Awade 2019), social (Missiame et al., 2021; Kehinde et al., 2020; Zulu et al., 2024; Ali & Awade 2019), locational (Missiame et al., 2021; Zulu et al., 2024; Loko et al., 2021) and gendered determinants of credit access (Yiridomoh *et al*., 2022; Tsige *et al.*, 2020; Ali & Awade 2019; Eastin, 2018). But fewer studies explicitly investigate whether observed gender gaps in credit access persist after controlling for socioeconomic and institutional characteristics such as age, education, income, household size, farming experience, and extension contact. This distinction is important because apparent gender disparities may reflect deeper structural inequalities in resources and opportunities rather than gender alone. Understanding whether gender independently predicts access to bank credit,

or whether gaps are driven by other associated factors, is essential for equitable and effective policy design and implementation.

This study therefore investigates the determinants of access to credit among smallholder farmers in Southeast Nigeria with specific emphasis on gender analysis. Using descriptive statistics, chi-square, and binary logistic regression, the study examines both the observable gender gap in access to bank credit and the underlying socioeconomic and institutional factors shaping that gap. By integrating gender into the analysis, the study contributes evidence for designing more inclusive credit policies that can improve productivity, resilience, and livelihood of smallholder farmers. The findings are expected to guide policymakers, financial institutions, and development partners in developing targeted interventions that reduce rural credit exclusion and promote equitable access to bank credit.

The theory guiding this research is the Sustainable Livelihoods Framework (SLF) created by DFID (1999), which highlights how socioeconomic factors influence access to productive resources, serves as the theoretical basis for this study. According to this concept, credit is seen as an essential tool that helps smallholder farmers increase productivity, improve food security, and adjust to shocks. The study illustrates how financial inclusion interacts with social, institutional, and economic elements to impact livelihood outcomes through the provision of credit within the SLF.

Most studies in Nigeria on credit for agricultural purposes and rural livelihoods have concentrated on the Southwest and Northern regions, leaving Southeast Nigeria underexplored (Adeagbo et al., 2021; Ogunniyi et al., 2021; Otekunrin 2022). This is despite unique challenges of fragmented landholdings, persistent liquidity constraints and high population pressure, among smallholder farmers in Southeast Nigeria. Additional, despite established differences in financial access between male and female farmers, existing research also offers scant gender-disaggregated information on access to agricultural finance (Ewuzie & Eze, 2018). Therefore, for inclusive financial policies and enhanced resilience among smallholder farmers in Southeast Nigeria, evidence that is gender-sensitive and region-specific is vital.

The main objective of this study is to analyze the determinants of access to credit among smallholder farmers in Southeast Nigeria with a gender lens. The specific objectives are to:

i. examine the level of access to credit among smallholder farmers in Southeast Nigeria;
ii. ascertain gender difference in access to credit among smallholder farmers;
iii. analyze the socioeconomic and institutional determinants of access to credit; and
iv. determine if gender remain a significant predictor of credit access after controlling for other determinants.

Methodology

The study area is southeast Nigeria which is one of the six (6) geopolitical zones in the country. The region consists of five (5) states namely, Abia, Anambra, Ebonyi, Enugu and Imo. Southeast Nigeria is bordered by Cameroon to the East and the Atlantic Ocean to the south. The region is located within latitudes 4^0 40^1 and 7^0 00^1 N, and longitudes 6^0 30^1 and 8^0 30^1 E in the tropical rain forest zone of Nigeria, with mean maximum temperature from 26^0C to 28^0C, total annual rainfall ranging between 1,400 mm and 2,000 mm with a high relative humidity level above 70 percent as shown n figure 2 (NiMeT, 2025). It has a total land mass of 10,952,400 hectares with over 22,012,828 populations (NPC, 2020; NPC, 2019). The region is characterized by mixed farming systems dominated by crop-based smallholder farmers. Agriculture in the zone is increasingly affected by climate variability, land fragmentation, declining soil fertility, and limited access to bank credit for climate resilience and productivity.

A multi-stage sampling technique was employed to select respondents for the study. In the first stage, three states Anambra, Ebonyi, and Enugu were randomly selected from the five states in Southeast Nigeria. The second stage involved the random selection of two agricultural zones from each state, resulting in six zones. In the third stage, two Local Government Areas (LGAs) were purposively selected from each zone based on a high concentration of crop-based agribusinesses, yielding a total of twelve LGAs. In the fourth stage, male and female crop-based entrepreneurs were purposively identified within the selected LGAs with the assistance of extension officers. Finally, 20 respondents were randomly selected from each LGA, giving an initial sample size of 240 (120 males and 120 females). However, after data cleaning, one female respondent was removed due to being an outlier, resulting in a final sample size of 239 respondents (120 males and 119 females). The questionnaire captured information on farmers' socioeconomic characteristics, institutional variables, farm attributes, and access to credit.

Data for this study were collected from primary sources using questionnaires. Information was obtained from smallholder farmers on; access to bank credit, factors that influence their access to bank credit like, age, gender, educational level, financial literacy, farm experience, membership of a registered cooperative, farm/herd size etc. Enumerators were trained by the researcher to assist in administering and retrieving questionnaires. Data were collected from September to December, 2023. Statistical software packages such as Stata 15, and Excel and Chi-square were employed for data analysis. To ensure reliability, the instrument was subjected to a test–retest method, with a reliability coefficient (r) ranging between 0.70 and 1.00, indicating that the instrument was sufficiently reliable for achieving the study objectives. Data collected were analyzed using both descriptive and inferential statistics.

Descriptive statistics like mean, frequency distribution and percentages and pie-chart were used to realize objectives i to iii, while binary logistic regression was used to achieve objective vi.

Model Specification

To examine the determinants of access to credit among smallholder farmers in Southeast Nigeria, this study employed a binary logistic regression model, given that the dependent variable (access to credit) is dichotomous, taking the value of 1 if a farmer has access to credit and 0 otherwise. The model estimates the probability that a farmer accesses credit as a function of selected socioeconomic and institutional characteristics.

The empirical model is specified as:

$$P(Y_i = 1) = \frac{1}{1 + e^{-Z_i}}$$

where:

$$Z_i = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Age}_i + \beta_3 \text{Education}_i + \beta_4 \text{Income}_i + \beta_5 \text{Household Size}_i + \beta_6 \text{Farming Experience}_i + \beta_7 \text{Farm Size}_i + \beta_8 \text{Extension}_i + \beta_9 \text{Cooperative}_i + \beta_{10} \text{Collateral}_i + \varepsilon_i$$

where $P(Y_i = 1)$represents the probability that farmer $i$has access to credit, $\beta_0$is the intercept, $\beta_1 - \beta_{10}$are parameters to be estimated, and $\varepsilon_i$is the error term.

Variable	Description	Expected Sign
Access to Credit (Y)	1 = Yes, 0 = No	—
Gender	1 = Male, 0 = Female	+ / −
Age	Age of farmer (years)	+ / −
Education	Years of schooling	+
Income	Annual farm income	+
Household Size	Number of household members	+ / −
Farming Experience	Years in farming	+
Farm Size	Size of farm (hectares)	+
Extension	1 = Yes, 0 = No	+
Cooperative Membership	1 = Yes, 0 = No	+
Collateral Ownership	1 = Yes, 0 = No	+
Financial Literacy	1 = Yes, 0 = No	+

Results and Discussion

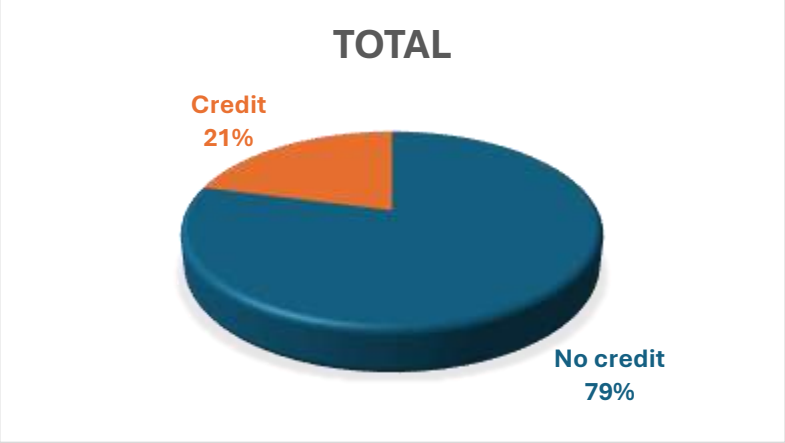
Access to Bank Credit by Smallholder Farmers

Table 1 shows the result of access to bank credit by smallholder farmers. The pie-chart result showed that only 20.92% of smallholder farmers in the study area had access to bank credit, while 79.08% had no access to bank credit. This implies that greater percentage of smallholder farmers in the study area are financially excluded, reflecting persistent barriers in rural financial systems. Such exclusion is consistent with findings from EFInA (2023), which reported that formal financial inclusion remains limited among rural households in Nigeria despite multiple intervention programmes. Similarly, the Central Bank of Nigeria acknowledged that agricultural finance schemes have not fully bridged the gap in credit accessibility for smallholders.

The low access rate also aligns with broader African evidence. For instance, Ali and Awade (2019) documented that soybean farmers in Togo faced significant credit constraints, which limited their welfare outcomes. Zulu et al. (2024) likewise observed that small-scale sugarcane farmers in South Africa struggled with financial exclusion, though those with access to credit experienced significant income gains. These parallels suggest that the situation in Southeast Nigeria reflects a wider regional challenge, where smallholder farmers remain marginalized in formal credit markets due to collateral requirements, high transaction costs, and institutional inefficiencies.

Overall, the result underscores the urgent need for inclusive financial policies that reduce barriers to bank credit, particularly for smallholder farmers who depend on timely access to finance for productivity and resilience.

Figure 1: Distribution of Respondents by Access to Credit



The mean values of the explanatory variables showed that most respondents were within the economically active age bracket, had modest household sizes, and relatively low-income levels. These characteristics reflect the typical socioeconomic conditions of rural farming households.

Gender Distribution of Access to Bank Credit

Table 2 and figure 2 showed the result of gender accessibility to bank credit. Table 2 shows that 27% of male farmers accessed credit compared with only 15% of female farmers, and the difference was statistically significant ($\chi^2 = 5.13$; $p < 0.05$). This descriptive result highlights a clear gender disparity in credit access, consistent with broader evidence that women farmers face structural disadvantages in accessing productive resources such as land, collateral, and finance (Tsige *et al.,* 2020; Yiridomoh *et al*., 2022). Similar findings have been reported in Ethiopia and Ghana, where women's weaker asset ownership and limited bargaining power constrained their ability to secure formal loans (Eastin, 2018).

However, after controlling for socio-economic and institutional factors in the logistic regression model, gender was no longer a significant predictor of credit access. This suggests that the observed disparity may not be due to gender identity alone, but rather to unequal access to productive resources and institutional support. In other words, women's lower access to credit reflects broader structural inequalities in land tenure, income, and extension services rather than direct gender-based discrimination. This interpretation aligns with Ali & Awade (2019), who argued that credit constraints among smallholders often stem from systemic resource inequalities rather than gender alone.

Overall, the result underscores the importance of addressing structural barriers such as collateral requirements, land ownership rights, and institutional support systems if gender gaps in credit access are to be reduced. Policies that strengthen women's access to productive assets and financial literacy could help narrow the disparity and promote inclusive financial participation among smallholder farmers in Southeast Nigeria.

Table 2: Gender distribution of Access to Bank Credit

Gender	Credit Access (%)	No Credit Access (%)	Total
Male	32	87	119
Female	18	102	120

Pearson $\chi^2 = 5.13$ ($p = 0.024$)

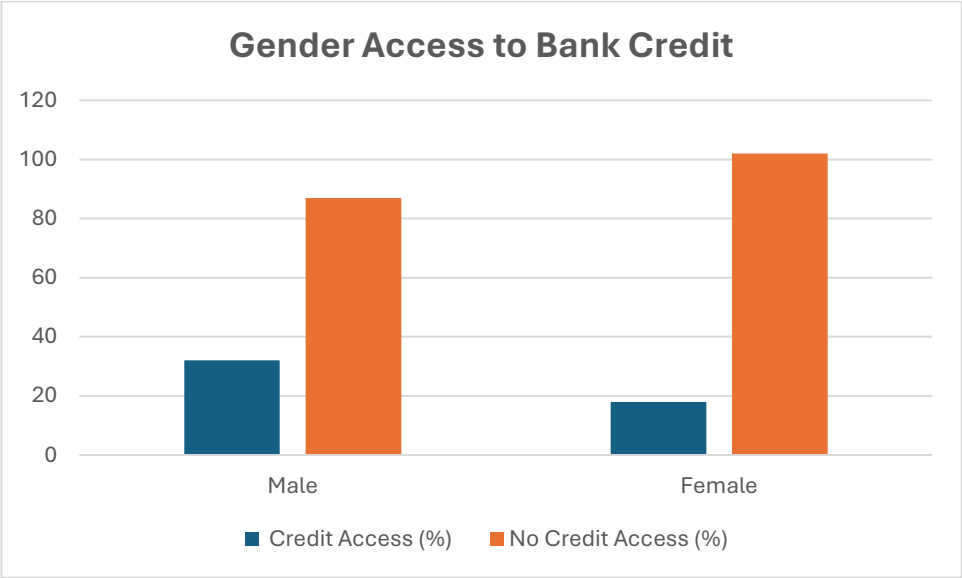


Figure 2: Gender Accessibility to Bank Credit. **Source: Field data 2023.**

Determinants of Access to Credit

Table 3 presents the result of the determinants of access to credit using logistic regression. The logistic regression model was statistically significant overall ($X^2 = 64.00$; $p < 0.01$), confirming that the explanatory variables jointly influenced access to credit.

Table 3: Determinants of Access to Credit

Variables	Coefficient	Std. Error	z-value	P-value
Age	-0.1604	0.3301	-0.49	0.627
Education	0.2993***	0.0780	3.84	0.000
Farm experience	0.4137	0.3378	1.22	0.221
Household size	-0.4567	0.3367	-1.36	0.175
Farm size	0.0152	0.2860	0.05	0.958
Farm income	0.0157	0.3009	0.05	0.958
Financial literacy	0.0543***	0.0172	3.15	0.000
Membership of registered cooperative	0.2013***	0.0771	2.61	0.009
Gender	-0.0674	0.2635	-0.26	0.798
Constant	0.1555	0.6590	0.24	0.813

Source: Field data 2023.

Access to credit was positively and significantly impacted by education (Coef. = 0.2993; $p < 0.01$), suggesting that farmers who had more education were more likely to be able to obtain credit facilities. Farmers that receive education are better able to comprehend loan procedures, meet documentation requirements, and interact with formal financial institutions. Additionally, farmers with higher levels of education are more likely to have the managerial and communication abilities needed to successfully

navigate institutional financing institutions. This result is consistent with the findings of Zulu et al. (2024) and Azubugwu & Osuafor (2019), who discovered that education greatly increased South African small-scale farmers' access to profitable resources. The results are likewise in line with those of Missiame et al. (2021), who found that education enhanced the technical and financial decision-making skills of Ghanaian cassava farmers, hence improving their access to loans.

Access to credit was positively and significantly impacted by financial literacy (Coef. = 0.0543; $p < 0.01$). This implies that farmers with greater financial literacy had a higher chance of obtaining credit than farmers with less financial literacy. By improving knowledge of loan products, repayment requirements, and borrowing procedures, financial literacy lessens the information imbalance that exists between lending institutions and farmers. This outcome validates the findings of Zhao et al. (2022), who highlighted that farmers' adoption of productive agricultural techniques and involvement in formal financial systems are enhanced by financial knowledge and digital financial awareness.

Membership of registered cooperatives also exerted a positive and statistically significant effect on access to credit (Coef. = 0.2013; $p < 0.01$). Farmers belonging to cooperatives were more likely to access credit than non-members. Cooperative societies often serve as channels for group lending, information dissemination, collective guarantees, and financial intermediation. The finding corroborates Enwa & Ewuzie (2020), who found that cooperative participation improves welfare provision and economic opportunities among vulnerable households. Similarly, Kehinde A. et al. (2021) observed that social capital and group participation enhance farmers' access to productive resources and improve livelihood outcomes.

Additionally, access to credit was positively and statistically significantly impacted by membership in registered cooperatives (Coef. = 0.2013; $p < 0.01$). Compared to non-members, farmers who belonged to cooperatives were more likely to obtain financing. Cooperative societies frequently act as conduits for financial intermediation, collective guarantees, information sharing, and group lending. The results support the findings of Enwa & Ewuzie (2020), who discovered that cooperative involvement enhances economic prospects and welfare assistance for vulnerable households. In a similar vein, Kehinde et al. (2021) found that social capital and group involvement improve livelihood outcomes and increase farmers' access to productive resources.

Age, household size, farm experience, farm income and farm size are not significant determinants of access to credit among farmers in the study area. This implies that institutional and knowledge-related factors may be more significant predictors of credit access than farm production characteristics and demographics in the study area.

Gender Effect on Access to Bank Credit

Gender had a negative but statistically insignificant coefficient (Coef. = -0.0674; $p > 0.05$). Since gender was coded as male = 1 and female = 2, the negative sign suggests that female farmers were less likely to access credit relative to male farmers. However, the difference was not statistically significant after controlling for socioeconomic and institutional variables. The finding suggests that the apparent gender gap observed in descriptive statistics may largely reflect differences in underlying socio-economic conditions such as education, financial literacy, and institutional factors rather than direct gender discrimination. The finding is in line with Ewuzie & Eze (2018), who reported that the gender disparities in access to microfinance credit among rural households in Anambra State is institutional. It also aligns with Tsige et al. (2020), who found that women's disadvantages in accessing credit in Ethiopia were linked to weaker asset ownership and institutional connectivity rather than gender identity alone. Eastin (2018) similarly argued that gender inequality in agriculture often operates indirectly through structural barriers such as land tenure and financial literacy. Thus, while gender inequality exists, it manifests through broader socio-economic disadvantages that constrain women's access to formal finance.

Conclusion and Recommendation

The study concludes that male and female in the study area have limited access to bank credit. Also, while male farmers are more likely to access credit than their female counterparts descriptively, gender was not a statistically significant determinant of credit access after controlling for socioeconomic characteristics. Instead, education, financial literacy and membership of a registered cooperative are significant determinants of access to bank credit were the major factors influencing credit access. This suggests that gender gaps in accessing bank credit are largely entrenched in broader structural inequalities. The study therefore, recommends that inclusive agricultural finance policies should target addressing these structural barriers for enhanced resilience, productivity and welfare of smallholder farmers.

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