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Research Article

**Utilization of Informal Credit and its Effects on Cassava Production among Smallholder Farmers in Akure North Local Government Area, Ondo State, Nigeria**

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**Abstract**

*This study examines the utilization of informal credit and its effects on cassava production among smallholder farmers in Akure North Local Government Area (LGA), Ondo State, Nigeria with specific objectives to describe the socio-economic characteristics of cassava farmers, assess the benefits of informal credit utilization, identify factors influencing its use, and examine constraints associated with informal credit access. Primary data were collected from 120 cassava farmers using a structured questionnaire and a two-stage sampling technique. Data were analysed using descriptive statistics, Likert-scale analysis, probit regression, and t-test. Results revealed that 75.0% of the respondents were male, with a mean age of 54 years. Most respondents (80.0%) were married, had an average household size of six persons with 85.0% of respondents attaining tertiary education. The mean farming experience was 16.9 years, and 91.7% of the farmers belonged to cooperative societies. Informal credit was accessed by 52.5% of the respondents. Major benefits derived from informal credit utilization included improved cassava yield ( $\bar{x} = 2.72$ ), asset accumulation ( $\bar{x} = 2.38$ ), and improved standard of living ( $\bar{x} = 2.36$ ). Probit regression results indicated that gender ( $p < 0.10$ ), interest rate ( $p < 0.05$ ), and repayment period ( $p < 0.01$ ) significantly influenced informal credit utilization. Key constraints identified were inadequate credit amounts ( $\bar{x} = 1.92$ ) and lack of collateral ( $\bar{x} = 1.71$ ). The study concludes that informal credit positively contributes to cassava production; however, access remains constrained by financial and institutional factors. It recommends strengthening linkages between informal and formal financial institutions, improving access to affordable and flexible credit, and promoting financial literacy and gender-inclusive financial interventions to enhance agricultural productivity and rural livelihoods.*

**Keywords:** Informal credit; Cassava production; Credit utilization; Smallholder farmers; Nigeria

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## Introduction

Agricultural credit plays a critical role in enhancing farm productivity, promoting technology adoption, and stimulating rural economic development, particularly in developing economies where smallholder agriculture predominates (Mohammad *et al.*, 2025). In many developing countries, limited access to formal financial services continues to constrain the ability of farmers to invest in productive agricultural inputs and modern technologies. In Nigeria, this challenge is further compounded by the predominance of subsistence farming, low-income levels, limited savings capacity, and underdeveloped rural financial markets. As a result, many farmers face difficulties in financing essential inputs such as improved planting materials, fertilizers, agrochemicals, and mechanization services, thereby affecting agricultural productivity and farm efficiency. Cassava (*Manihot esculenta*) is one of Nigeria's most important staple crops, contributing significantly to food security, household income, and industrial raw material supply. However, declining yields in some cassava-producing areas pose serious concerns for food security and rural livelihoods. According to Ayanwale *et al.* (2026), improving cassava productivity offers a more sustainable pathway to food security than expanding cultivated land. Access to agricultural credit has therefore been identified as a key instrument for enhancing cassava production by easing capital constraints and enabling farmers to adopt yield-enhancing technologies."

Despite several government-led credit initiatives, including the Agricultural Credit Guarantee Scheme Fund (ACGSF), Commercial Agricultural Credit Scheme (CACS), and the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), formal credit access among smallholder farmers remains limited due to bureaucratic procedures, stringent collateral requirements, and poor loan recovery rates (Fakayode *et al.*, 2018). Consequently, many farmers rely on informal credit sources such as friends, relatives, moneylenders, thrift collectors, and cooperative societies. While informal credit offers flexibility and ease of access, it is often characterized by high interest rates and limited loan sizes.

Against this backdrop, this study investigates the utilization of informal credit and its effects on cassava production in Akure North Local Government Area of Ondo State, Nigeria. Specifically, the study aims to: (i) describe the socio-economic characteristics of cassava farmers; (ii) assess the perceived benefits of informal credit utilization on cassava production; (iii) identify factors influencing informal credit usage; and (iv) examine

constraints associated with informal credit utilization. The null hypothesis tested is that there is no significant difference in production levels between informal credit users and non-users.

## Materials and Methods

### Study Area

Akure North Local Government Area is located in Ondo State, southwestern Nigeria, approximately between latitude 7°18'N and longitude 5°06'E, with its administrative headquarters at Iju/Itaogbolu. The LGA covers an estimated land area of about 638.8–660 km<sup>2</sup>. The area experiences a tropical climate characterized by distinct wet and dry seasons. The rainy season typically spans April to October, while the dry season occurs between November and March. Annual rainfall is approximately 1,150 mm, with mean temperatures ranging from 21°C to 29°C and relatively high humidity levels throughout the year. The natural vegetation is predominantly luxuriant high forest, which supports diverse agricultural activities. Agriculture is the main livelihood activity in the area, employing about 75% of the population. The major crops cultivated include cassava, yam, maize, cocoyam, plantain, cocoa, oil palm, and various vegetables.

### Data Collection and Analysis

Primary data were collected via a structured questionnaire from 120 cassava farmers selected through two-stage sampling: first, six communities (Ilu-Abo, Ogbese, Owode, Odudu, Iju, Ita-Ogbolu) were purposively chosen; second, 20 farmers per community were randomly selected. Descriptive statistics (frequencies, percentages, means) analysed socio-economic characteristics and constraints/benefits (using 3-point and 5-point Likert scales, where mean >2 indicates positive effect/serious constraint). Probit regression modelled determinants of informal credit usage (dependent variable: 1 = user, 0 = non-user). A t-test was used to test the hypothesis about production differences.

## Results and Discussion

### Socio-Economic Characteristics

The results in Table 1 reveal that cassava farming activities were predominantly male-dominated, with 75.0% of respondents being men. This reflects the physically demanding nature of cassava production and male dominance in rural agricultural labour. The mean age of respondents was 54 years, indicating that most farmers were within their economically active and productive years. A majority (80.0%) were married, with an average household size of six persons, suggesting the availability of family labour for farming activities. All respondents had some level of formal education, which is

expected to enhance their capacity to adopt improved farming practices and access credit information.

The mean farming experience was 16.9 years, indicating substantial familiarity with cassava production practices. Although the calculated mean farm size was 19.9 hectares, most respondents cultivated less than 10 hectares, confirming the predominance of smallholder farming. Cooperative membership was high (91.7%), reflecting farmers' awareness of the benefits of collective action, particularly in accessing credit and information (Aminu & Hermanns, 2021). Furthermore, 52.5% of the respondents accessed credit through informal sources, with an average annual credit amount of ₦5,689,000. This implies the importance of informal financial institutions in supporting smallholder cassava production in the study area.

**Table 1: Distribution of respondents based on Socioeconomic characteristics**

| Variables                 | Frequency | Percentage | Mean      |
|---------------------------|-----------|------------|-----------|
| <b>Gender</b>             |           |            |           |
| Male                      | 90        | 75.0       |           |
| Female                    | 30        | 25.0       |           |
| <b>Age</b>                |           | 13.3       |           |
| <40                       | 16        | 16.7       |           |
| 40 -49                    | 20        | 22.5       | 54 years  |
| 50 – 59                   | 27        | 3.3        |           |
| 60 – 69                   | 4         | 44.2       |           |
| 70 and above              | 27        |            |           |
| <b>Marital Status</b>     |           |            |           |
| Single                    | 10        | 8.3        |           |
| Married                   | 96        | 80.0       |           |
| Divorced                  | 12        | 10.0       |           |
| Widowed                   | 2         | 1.7        |           |
| <b>Educational Status</b> |           |            |           |
| Adult Education           | 1         | 0.8        |           |
| Primary Education         | 31        | 25.8       |           |
| Secondary Education       | 36        | 30.0       |           |
| Tertiary Education        | 25        | 20.8       |           |
| <b>Household Size</b>     |           |            |           |
| 0 -3                      | 10        | 8.3        | 6 members |
| 4-6                       | 79        | 65.8       |           |
| 7-9                       | 29        | 24.2       |           |
| >9                        | 2         | 1.7        |           |

|                               |    |       |            |
|-------------------------------|----|-------|------------|
| <b>Religion</b>               |    |       |            |
| Christianity                  | 74 | 61.67 |            |
| Islam                         | 23 | 19.17 |            |
| Traditional                   | 3  | 2.5   |            |
| <b>Labour Source</b>          |    |       |            |
| Family                        | 55 | 45.8  |            |
| Hired                         | 65 | 54.2  |            |
| <b>Farm Size (Ha)</b>         |    |       |            |
| <10                           | 82 | 68.3  |            |
| 10 – 29                       | 25 | 20.8  | 19.9       |
| 30 – 49                       | 2  | 1.7   |            |
| 50 – 99                       | 2  | 1.7   |            |
| >100                          | 9  | 7.5   |            |
| <b>Cooperative Membership</b> |    |       |            |
| Yes                           | 86 | 71.7  |            |
| <b>Years of Experience</b>    |    |       |            |
| <10                           | 31 | 25.8  |            |
| 10-19                         | 25 | 20.8  | 16.9       |
| 20 – 29                       | 29 | 24.2  |            |
| 30 and above                  | 23 | 19.2  |            |
| <b>Annual Income</b>          |    |       |            |
| >100000                       | 9  | 9.0   | 425,161.83 |
| 100001-300000                 | 29 | 29.0  |            |
| 300001-500000                 | 41 | 41.0  |            |
| 500001-700000                 | 10 | 10.0  |            |
| 700001-900000                 | 8  | 8.0   |            |
| <900000                       | 3  | 3.0   |            |
| <b>Sources of Information</b> |    |       |            |
| Extension agent               | 24 | 20.0  |            |
| Research Institute            | 20 | 16.67 |            |
| Other Cassava Farmers         | 39 | 32.5  |            |
| Cooperative Society           | 17 | 14.17 |            |

*Field Survey, 2025*

### **Benefits of Informal Credit**

The perceived benefits of informal credit utilization are presented in Table 2. The most highly ranked benefit was improved cassava yield ( $\bar{x} = 2.72$ ), indicating that access to informal credit enabled farmers to purchase essential inputs such as improved planting materials and hire labor promptly. Asset accumulation ( $\bar{x} = 2.38$ ) and improved standard of living ( $\bar{x} = 2.36$ ) were also identified as major benefits.

Other notable benefits included enhanced value addition facilities, improved educational

opportunities for farmers' children, and farm expansion. These findings suggest that informal credit contributes not only to increased agricultural productivity but also to improved household welfare, rural livelihoods, and supports socio-economic development.

**Table 2: Distribution based on the benefits of informal credit**

| Benefits                    | Not<br>Affected<br>F (%) | Slightly<br>Affected<br>F (%) | Moderately<br>Affected<br>F (%) | Affected<br>F (%) | Strongly<br>Affected<br>F (%) | Mean |
|-----------------------------|--------------------------|-------------------------------|---------------------------------|-------------------|-------------------------------|------|
| Improved Cassava Yield      | 19 (15.8)                | 6 (5.0)                       | 31 (25.8)                       | 22 (18.3)         | 42 (35.0)                     | 2.72 |
| Gathering of More Assets    | 26 (21.7)                | 23 (19.1)                     | 21 (17.5)                       | 20 (16.7)         | 30 (25.0)                     | 2.38 |
| Improved Standard of Living | 25 (20.9)                | 16 (13.3)                     | 36 (30.0)                       | 17 (14.2)         | 26 (25.2)                     | 2.36 |
| Value Addition Facility     | 33 (27.5)                | 3 (2.5)                       | 52 (43.3)                       | 14 (11.7)         | 18 (15.0)                     | 2.33 |
| Training of Children        | 34 (28.3)                | 4 (3.3)                       | 36 (30.0)                       | 24 (20.0)         | 22 (18.3)                     | 2.25 |
| Farm Expansion              | 23 (19.1)                | 0 (0.0)                       | 58 (48.3)                       | 23 (19.1)         | 16 (13.3)                     | 2.20 |
| Debt Payment                | 34 (28.4)                | 19 (15.8)                     | 24 (20.0)                       | 14 (11.7)         | 29 (24.2)                     | 2.19 |
| Addition Labour             | 26 (21.7)                | 17 (14.2)                     | 36 (30.0)                       | 20 (16.7)         | 21 (17.5)                     | 2.10 |
| Social Ceremony             | 43 (35.8)                | 12 (10.0)                     | 27 (22.5)                       | 18 (15.0)         | 20 (16.7)                     | 2.02 |
| Feeding                     | 32 (26.7)                | 6 (5.0)                       | 47 (39.2)                       | 23 (19.2)         | 12 (10.0)                     | 1.96 |
| Access to Input             | 28 (23.3)                | 24 (20.0)                     | 35 (29.2)                       | 18 (15.0)         | 15 (12.5)                     | 1.94 |
| Access to ICT               | 42 (35.0)                | 12 (10.0)                     | 34 (28.3)                       | 22 (18.3)         | 10 (8.3)                      | 1.92 |
| Rent                        | 47 (39.1)                | 20 (16.7)                     | 23 (19.2)                       | 10 (8.3)          | 20 (21.1)                     | 1.85 |

*Field Survey, 2025*

### Determinants of Informal Credit Usage

The probit regression results indicate that gender, interest rate, and repayment period significantly influenced informal credit utilization among cassava farmers. Gender was positively significant at the 10% level, suggesting that male farmers were more likely to utilize informal credit, possibly due to greater control over productive resources.

Interest rate exhibited a negative and significant relationship with informal credit utilization at the 5% level, implying that higher interest rates discourage farmers from accessing informal loans. Conversely, the repayment period was positively significant at the 1% level, indicating that longer repayment durations increase the likelihood of credit utilization by reducing repayment pressure on farmers.

Other variables such as age, household size, education, and farming experience showed

positive but statistically insignificant relationships with informal credit usage. These results are consistent with Anang *et al.* (2015), who observed that credit terms and repayment flexibility play a critical role in farmers' borrowing decisions.

**Table 3: Regression analysis showing the factors determining the usage of informal credit among cassava farmers in the study area**

| Model                                      | Unstandardized<br>B           | Coefficients<br>Std Error | T                                 | Sig   |
|--------------------------------------------|-------------------------------|---------------------------|-----------------------------------|-------|
| Constant                                   | 0.550                         | 0.5417                    | 1.031                             | 0.310 |
| Age (X <sub>1</sub> )                      | 0.001                         | 0.0035                    | 0.026                             | 0.872 |
| Gender (X <sub>2</sub> )                   | 0.179                         | 0.1022                    | 3.083*                            | 0.079 |
| Household Size (X <sub>3</sub> )           | 0.007                         | 0.0241                    | 0.095                             | 0.757 |
| Marital Status (X <sub>4</sub> )           | -0.176                        | 0.1321                    | 1.764                             | 0.184 |
| Educational Status (X <sub>5</sub> )       | 0.127                         | 0.0918                    | 1.926                             | 0.165 |
| Years of Experience (X <sub>6</sub> )      | 0.004                         | 0.0042                    | 0.832                             | 0.362 |
| Major occupation (X <sub>7</sub> )         | -0.105                        | 0.3496                    | 0.089                             | 0.765 |
| Interest Rate (X <sub>8</sub> )            | -0.007                        | 0.0034                    | 4.342**                           | 0.037 |
| Repayment Period (Month) (X <sub>9</sub> ) | 0.014                         | 0.0042                    | 10.207***                         | 0.001 |
| <b>Number of observations<br/>(120)</b>    | <b>Chi square<br/>(4.013)</b> |                           | <b>Log likelihood<br/>(77.81)</b> |       |

\*\*\* Significant at 1%

\*\* Significant at 5%

\*Significant at 10%

### Constraints to Informal Credit Usage

The results in Table 4 reveal that although none of the identified constraints were classified as extremely severe, several factors limited effective utilization of informal credit. The most prominent constraint was inadequate credit amount ( $\bar{x} = 1.92$ ), followed by lack of collateral ( $\bar{x} = 1.71$ ) and untimely loan disbursement ( $\bar{x} = 1.69$ ).

Other constraints included limited sources of informal credit, high interest rates, fear of indebtedness, and difficult repayment policies. These findings suggest that while informal credit is relatively accessible, its effectiveness is undermined by insufficient loan sizes and unfavourable lending conditions. This partially contrasts with Adebayo (2018), who identified collateral requirements as the primary barrier to credit access.

**Table 4: Constraints Associated with usage of Informal Credit**

| Constraints                 | Not Serious | Serious   | Very Serious | Mean |
|-----------------------------|-------------|-----------|--------------|------|
| Inadequate Credit           | 10 (8.4)    | 13 (10.8) | 97 (80.8)    | 1.91 |
| Lack of Collateral          | 17 (14.2)   | 14 (11.7) | 89 (74.2)    | 1.71 |
| Loan not timely             | 12 (10.0)   | 27 (22.5) | 81 (67.5)    | 1.69 |
| Limited Credit Source       | 18 (15.0)   | 26 (21.7) | 76 (63.3)    | 1.62 |
| High Level of Interest rate | 30 (25.0)   | 19 (15.8) | 71 (59.2)    | 1.49 |
| Fear of Indebtedness        | 42 (35.0)   | 22 (18.3) | 56 (46.7)    | 1.46 |
| Difficult repayment policy  | 33 (27.5)   | 25 (20.8) | 62 (51.7)    | 1.41 |
| Cumbersome Process          | 28 (23.4)   | 41 (34.2) | 51 (42.5)    | 1.28 |
| Poor record keeping         | 51 (42.5)   | 29 (24.2) | 40 (33.3)    | 0.99 |
| Illiteracy                  | 56 (46.6)   | 20 (16.7) | 44 (36.7)    | 0.98 |
| Inadequate Information      | 49 (40.9)   | 43 (35.8) | 28 (23.3)    | 0.88 |
| Gender Bias                 | 61 (50.8)   | 29 (24.2) | 30 (25.0)    | 0.81 |

*Field Survey, 2025*

## Discussion

The findings of this study provide important insights into the role of informal credit in enhancing cassava production among smallholder farmers in Akure North Local Government Area, Ondo State, Nigeria. The socio-economic characteristics of respondents indicate a predominance of middle-aged farmers, who are largely married, educated, and male, with substantial farming experience and active participation in cooperative associations. These characteristics reflect the typical structure of smallholder cassava farming systems in southwestern Nigeria, where accumulated experience, household labour, and cooperative membership often facilitate access to productive resources and improved agricultural practices (Oyotomhe *et al.*, 2025).

A key finding of the study is the positive contribution of informal credit to cassava production outcomes. Slightly more than half (52.5%) of respondents accessed informal credit, and beneficiaries reported improvements in yield, asset accumulation, and standard of living, with the highest mean perception recorded for increased cassava yield ( $\bar{x} = 2.72$ ). This suggests that informal credit plays a critical role in relaxing liquidity constraints, enabling farmers to acquire yield-enhancing inputs such as improved planting materials, fertilizers, and hired labour promptly. Consequently, rather than expanding cultivated land area, credit access appears to support productivity-enhancing intensification. The t-test results, which indicate statistically significant differences in production outcomes between credit users and non-users, are consistent with recent empirical evidence that credit access improves cassava productivity, profitability, and farm efficiency in Nigeria (Ayanwale *et al.*, 2026; Adeosun, 2023).

The probit regression results further reveal key determinants of informal credit utilization. The positive association between male farmers and credit access reflects gendered disparities in resource ownership and decision-making power within rural farming households, consistent with evidence from similar smallholder contexts in Nigeria. Interest rates exhibited a significant negative effect on credit uptake, while longer repayment periods positively influenced borrowing decisions. These findings reinforce the argument that credit conditions, particularly cost and repayment flexibility, are decisive factors shaping farmers' participation in informal credit markets (Edaba *et al.*, 2025; Bassey *et al.*, 2025).

Certain constraints, such as inadequate loan amounts and lack of collateral, were identified as the most severe limitations of informal credit sources. Although informal financial systems are often perceived as more flexible and accessible than formal credit schemes such as the Agricultural Credit Guarantee Scheme Fund (ACGSF), Commercial Agriculture Credit Scheme (CACS), and NIRSAL, their limited capital base constrains the scale of investment required for modern agricultural intensification. This persistent reliance on informal credit therefore reflects structural weaknesses in formal rural finance delivery systems.

These findings have important implications for policy and agricultural development. Supporting informal credit systems through measures such as simplified registration procedures, financial incentives, and capacity-building initiatives could improve their effectiveness and expand their reach among farmers. At the same time, promoting partnerships between farmer cooperatives and formal financial institutions could create hybrid financing models that increase access to credit, lower borrowing costs, and provide farmers with larger loan amounts. There is also a need for targeted programmes that improve women farmers' access to credit and strengthen their financial literacy, helping to reduce existing gender inequalities in credit distribution. Ultimately, expanding access to affordable and appropriately structured credit can encourage the sustainable intensification of cassava production. This, in turn, can enhance food security, improve rural livelihoods, and support broader agricultural development goals in Nigeria.

## Conclusion

This study demonstrates that informal credit plays a vital role in supporting cassava production among smallholder farmers in Akure North Local Government Area. Access to informal credit contributes to higher productivity, asset accumulation, and improved household welfare by enabling farmers to invest in essential farm inputs. However,

factors such as gender, interest rates, repayment conditions, and inadequate loan amounts influence farmers' access to and utilization of credit. Addressing these constraints is essential for enhancing the effectiveness of informal credit as a tool for agricultural development and rural livelihood improvement.

### Recommendations

Government agencies, financial institutions, farmer cooperatives, and development partners should collaborate to strengthen informal credit systems and improve linkages between informal and formal sources of agricultural finance. Efforts should focus on expanding access to affordable and flexible credit, increasing the availability of agricultural loans, and providing financial literacy and credit management training for farmers. In addition, targeted interventions should be implemented by government and non-governmental organizations to address gender disparities in credit access and promote financial inclusion among women farmers. These measures will enhance cassava productivity, improve rural livelihoods, and contribute to sustainable agricultural development and food security.

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