
Impact of Rural Credit on Arable Crop Production in Aliero Local Government Area of Kebbi State

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ABSTRACT

This study investigated the impact of rural credit markets on arable crop production in selected villages within Aliero Local Government Area (LGA) of Kebbi State, Nigeria. Specifically, it examined the socio-economic characteristics of credit market participants, analyzed the credit demand functions of rural borrowers, assessed the determinants of loan repayment, and evaluated the influence of credit utilization on input use in arable crop farming. A multistage random sampling technique was employed to choose 120 respondents from six villages. Both primary and secondary data were collected through structured questionnaires and oral interviews. Data analysis involved the use of descriptive statistics (frequencies, percentages, and means) and linear regression analysis. The findings revealed that all respondents were male and married (100%), suggesting a gender imbalance in access to rural credit. Regression results indicated that educational attainment (70.6%), farming experience (7.8%), and interest rate (50.2%) significantly influenced the volume of credit demanded. Key challenges identified in rural credit operations included low literacy levels, limited access to formal credit sources, and poor organizational structures. The study concludes that while rural credit plays a significant role in enhancing input use and productivity in arable crop farming, access remains constrained—especially for women. It is therefore recommended that targeted policies be implemented to encourage female participation and improve rural financial inclusion.

Key words: Impact, Market, Marketing, Rural Credit, Arable, Production

INTRODUCTION

Agriculture remains a cornerstone of Nigeria's economy, accounting for a significant share of employment, rural income, and national food security. Within the agricultural sector, arable crop production plays a critical role in ensuring both household sustenance and national food supply, particularly in rural regions where subsistence farming dominates (FAO, 2021). Despite its importance, the productivity of rural farmers continues to be hampered by a range of structural and institutional challenges, among which limited access to credit is especially pervasive.

Access to rural credit is essential for enabling farmers to acquire vital inputs such as improved seeds, fertilizers, pesticides, and modern farming equipment. Credit also supports investment in labor, land preparation, and post-harvest handling, all of which are necessary for increasing productivity and minimizing post-harvest losses (Ogunniyi & Olagunju, 2021). Unfortunately, many smallholder farmers in Nigeria, particularly in northern states like Kebbi, face persistent barriers to obtaining affordable and timely credit. These barriers include lack of collateral, high interest rates, bureaucratic lending procedures, and weak financial infrastructure in rural areas (Adegbite *et al.*, 2020). As a result, farmers are often forced to rely on informal credit sources, which are typically inadequate and unreliable.

Aliero Local Government Area (LGA) of Kebbi State is predominantly agrarian, with the majority of its population engaged in arable crop farming such as millet, sorghum, maize, rice, and groundnuts. The area holds considerable potential for agricultural growth due to its favorable agro-ecological conditions and land availability. However, the productivity of farmers in the region remains below potential, largely due to underinvestment and insufficient access to productive resources, including credit. Understanding how rural credit influences arable crop production in this context is vital for designing targeted interventions that can enhance agricultural productivity, boost rural incomes, and promote food security.

While previous studies have explored the general relationship between credit and agricultural productivity in Nigeria, there remains a gap in localized, empirical research that addresses the specific dynamics in rural communities like Aliero. This study, therefore, aims to assess the impact of rural credit on arable crop production in Aliero LGA, Kebbi State. Specifically, it will investigate how access to credit affects farmers' input use, crop yields, and overall farm performance. The findings are expected to inform policy efforts aimed at strengthening rural financial systems and enhancing the effectiveness of agricultural credit schemes in northern Nigeria.

Problem Statement

Despite the existence of a wide array of financial intermediaries in Nigeria—including the Central Bank, commercial and development banks, mortgage banks, and microfinance institutions—access to affordable and appropriate credit remains critically limited for rural smallholder farmers (CBN, 2021; Sanusi & Akinyemi, 2022). In addition to formal channels, informal systems such as kinship associations, cooperative thrift societies, and rotating savings schemes like *Isusu* or *Adashe* (Adebayo *et al.*, 2020) serve as essential sources of rural finance. While these informal structures are flexible and community-driven, they often lack the capacity and consistency required to meet the growing financial demands of rural agricultural production.

Efforts to provide institutional credit to Nigerian farmers have yielded limited success due to a mismatch between formal financial services and the specific needs of smallholders. Many credit institutions face structural and operational weaknesses, including inadequate staffing, poor management, weak loan recovery systems, and limited rural outreach (Ajakaiye *et al.*, 2019). In addition, the misallocation of credit funds, poor enforcement of lending quotas, and real negative interest rates have eroded the effectiveness of rural credit schemes (Ogunniyi & Olagunju, 2021).

The implementation of the Structural Adjustment Programme (SAP) in 1986 further exacerbated these issues by removing subsidies and increasing the cost of farm inputs, thereby intensifying capital needs in agriculture (Yusuf & Babalola, 2023). Meanwhile, Nigeria's financial system continues to suffer from weak resource mobilization, high intermediation costs, and excessive political interference (World Bank, 2020). As a result, most formal institutions perceive rural lending as high-risk, largely due to limited access to borrower information and weak contract enforcement mechanisms (Uchenna & Okonkwo, 2021).

Consequently, rural credit markets remain underdeveloped and unevenly distributed, with large segments of the rural population unable to access credit services (Adeyeye *et al.*, 2021). This forces farmers and rural entrepreneurs to rely heavily on personal savings or informal lending, which is unsustainable given the high levels of rural poverty. The persistent credit gap continues to hinder agricultural productivity, limit rural incomes, and pose a serious challenge to policymakers and development actors seeking inclusive economic growth in Nigeria. It is in this respect that the study aimed at providing answers to the following research questions.

1. What are the socio-economic characteristics of the various participants in rural credit markets in the study area?
2. What are the credit demand functions for rural borrowers in the study area?
3. What are the economic determinants of loan repayment in rural credit markets in the study area?
4. What are the impacts of credit use on the input use in arable crop farming in the study area?

Research Objectives

The broad objective of this study is to examine the rural credit markets in Aliero local government area, and to analyze their impact on resource use in arable crop production in the study area. However, the specific objectives are;

- i. To described the socio-economic characteristics of the various participants in the rural credit markets in Aliero Local Government Area.
- ii. To assess the credit demand functions for rural borrowers in the study area.
- iii. To examine the determinants of loan repayment in rural credit markets in the study area.
- iv. To analyze the impact of credit use on the input use in arable crop farming in the study area.

Justification for the Study

Access to affordable and timely credit remains a critical constraint for rural and sub-urban producers in Nigeria. Despite the recognized role of credit in improving agricultural productivity and rural livelihoods, a large proportion of smallholder farmers remain excluded from formal financial services. This challenge continues to attract the attention of scholars, policymakers, and rural stakeholders alike (Ogunniyi & Olagunju, 2021; EFInA, 2023).

The structural mismatch between agricultural production and household consumption cycles, as noted by Mellor (1966), further compounds this issue. While income from farming is typically seasonal—concentrated around harvest periods—consumption needs persist throughout the year. This creates a pressing need for credit to smooth consumption, invest in inputs, and ensure consistent farm operations.

In response, successive Nigerian governments have introduced various credit schemes and rural financial institutions—such as the Family Economic Advancement Programme (FEAP), the National and State Directorates of Employment, and the Agricultural Credit Guarantee Scheme Fund (ACGSF)—to bridge the rural financial gap. These initiatives aimed to create inclusive and accessible financial services for marginalized rural populations (CBN, 2021). However, their outcomes have been underwhelming. Evidence suggests that less than 5% of the short-term credit needs of Nigerian farmers are met through formal institutions, with a significant portion of benefits captured by urban elites (Ajakaiye et al., 2019; World Bank, 2020).

Moreover, institutional inefficiencies, low loan recovery rates, and poor targeting mechanisms continue to plague these interventions (Sanusi & Akinyemi, 2022). As a result, informal credit sources such as cooperative societies, thrift groups, and kinship networks remain the dominant providers of rural finance—despite their limited scalability and inconsistent terms (Adebayo *et al.*, 2020).

Given these persistent challenges, there is an urgent need to re-assess the structure and functioning of rural credit markets at the grassroots level. Aliero Local Government Area in Kebbi State, a predominantly agrarian region, offers a relevant context for such an investigation. By generating micro-level empirical data on the conduct and performance of both formal and informal credit systems, this study aims to identify practical strategies for improving credit access and enhancing the productivity of arable crop farmers.

Ultimately, this research will contribute to the broader goal of fostering inclusive rural development and strengthening the agricultural value chain in northern Nigeria.

METHODOLOGY

The Study Area

Aliero Local Government Area (LGA) is situated in the central-eastern part of Kebbi State, Northwestern Nigeria. It covers an estimated land area of approximately 412 square kilometers and had a projected population of 125,783 based on the 2006 National Population Census (NPC, 2006). The LGA is strategically bordered by Gwandu LGA to the northeast, Jega LGA to the southwest, Tambuwal LGA in Sokoto State to the east, and Birnin Kebbi LGA to the northwest. Aliero lies within the Sudan Savanna ecological zone, characterized

by flat terrain and sparse vegetation, which is well-suited for both rain-fed and irrigated agriculture.

The climate in Aliero LGA features a tropical continental weather pattern, with average temperatures ranging between 26°C and 37°C annually. Rainfall is highly seasonal and typically ranges from 450mm to 600mm per annum, with most precipitation occurring between June and September (NIMET, 2022). These agro-climatic conditions provide a conducive environment for the cultivation of a variety of crops and livestock farming.

Agriculture is the predominant economic activity in the area, engaging more than two-thirds of the population. The people of Aliero are primarily involved in arable crop production, cultivating crops such as millet, sorghum, maize, onions, tomatoes, and peppers, often integrated with small-scale animal husbandry. Notably, Aliero is recognized as one of the largest onion-producing communities in Nigeria and hosts a major onion market that serves both local and interstate trade, especially within the Northwest geopolitical zone (Dogondaji *et al.*, 2006; Yusuf & Adeoti, 2021).

Culturally, Aliero is predominantly inhabited by the Hausa ethnic group, with Islam being the major religion practiced across communities. The social structure is deeply rooted in traditional institutions, which also influence local economic practices, including informal credit systems and cooperative associations often used to support farming and trading activities. Given its agrarian economy and reliance on seasonal production cycles, Aliero provides a relevant and insightful context for investigating rural credit systems and their impact on arable crop production.

Sampling Procedure and Sample Size

The sampling method used was stratified random sampling techniques so as to get a fair representative. These include Sabiyel, Aliero and Danwari district in Aliero local government. From each of the districts, two villages were randomly selected. 20 credit user arable farmers were randomly selected, giving a total of 120 arable farmers as a sample size. The ballot system used was for random selection.

Data Collection

Both primary and secondary data were used for the purpose of the study. Primary data was obtained through field survey with the use of structured questionnaire, designed in line with the objectives of the study, and data was collected fortnightly. Secondary data was collected from relevant text books, journals, seminars, proceedings, annual reports and other relevant materials.

Method of Data Analysis

Descriptive statistical tools like frequency tables, means and percentages were used to analyze objectives 1 while objectives 2, 3 and 4 were analyzed using regression analysis.

Specification of the Model

Objective (2); The implicit functional form will be specified as:

$$CDD = f(INT, EIF, EDU, SAV, LAC, LHA, e) \dots \dots \dots (1)$$

CDD= credit demanded

EDU= educational level.

LAC= loan application costs (₦).

LHA= farm size under cultivation (in hectares).

EIF= farming experience (yrs).

SAV= savings (₦).

INT= Market interest rate (₦).

e= error term assumed to fulfill all the assumptions of the classical linear regression model.

Objective (3) was realized by regression analysis. The implicit functional form was specified as:

$$\text{LRM} = f(\text{HHS}, \text{INT}, \text{LCA}, \text{ABP}, \text{EIF}, \text{LHA}, e) \dots\dots\dots (2)$$

Where: LRM= amount of borrowed money repaid (₦).

HHS= household size.

INT= interest (₦).

ABP= total amount of money previously borrowed (₦).

EIF= farming experience.

LHA= farm size (in hectares).

e = error term assumed to fulfil all the assumptions of the classical linear regression model.

Objective (4) was analysis with the aid of regression analysis.

The empirical functional form was specified as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, e) \dots\dots\dots (3)$$

Y= Food crop output (₦)

X₁= Land area (ha) under food crop cultivation.

X₂ = Hired labour (Man days).

X₃ = Household labour (man days)

X₄ = Value of planting materials like seeds, seedlings, cuttings, etc (₦)

X₅ = Fertilizer

e = error term.

Note that Equations 1, 2, and 3 were analyzed as a system using simultaneous equation techniques. The identification of the system was assessed using both the order and rank conditions, as outlined by Spanos (1986). The system was determined to be over-identified

and was subsequently estimated using the two-stage least squares (2SLS) method. In accordance with economic theory, only linear functional forms were considered for estimation.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Participants

Socio-economic characteristics such as age, sex, marital status, family size, education, occupation and years of experience in arable crop production play a vital role in determining the amount of credit required in arable crop production.

Age Distribution of the Participants

Table 1: Distribution of Participants According to Age

Age (Years)	Frequency	Percentage
< 20	0	0.0
21-30	5	4.2
31-40	15	12.5
41-50	58	48.3
50 and above	42	35.0
Total	129	100

Source: field Survey, 2022

Age is a key demographic factor influencing decision-making, productivity, and access to agricultural credit. According to the study, 48.3% of rural credit users were middle-aged (41–50 years)—a group often seen as experienced, reliable, and physically active, making them attractive to lenders (Ogunniyi & Olagunju, 2021). Older adults (50+ years) accounted for 35%, likely due to their long-term involvement in farming and community trust. Conversely, only 12.5% were aged 31–40 years, and a low 4.2% were youths (21–30 years). This underrepresentation of younger farmers reflects persistent barriers such as limited access to land, collateral, and credit networks (Adejobi *et al.*, 2021; FAO, 2022). The findings underscore the dominance of middle-aged farmers in credit markets and call for inclusive policies that enhance youth participation to ensure long-term sustainability in rural agricultural systems.

Sex Distribution of the Participants.

Table 2: Distribution of the Participants based on Sex

Age (Years)	Frequency	Percentage
Male	120	100
Female	0	0.0
Total	120	100

Source: Field survey, 2022

The study found that 100% of rural credit participants were male, highlighting the gender imbalance in credit access in Northern Nigeria. Cultural and social norms often limit women's roles in agriculture to processing activities, restricting their participation in credit markets. Recent research confirms that women face systemic barriers such as limited land rights, mobility restrictions, and educational gaps, which hinder their access to agricultural

financing (Oduwale *et al.*, 2021; Adegbite & Machethe, 2020; World Bank, 2022). Addressing these disparities is crucial for inclusive rural development.

Marital Status of the Participants

Table 3: Distribution of the Participants According to their marital Status

Marital Status	Frequency	Percentage
Married	120	100
Single	0	0.0
Divorced	0	0.0
Widower	0	0.0
Widow	0	0.0
Total	120	100

Source: Field Survey, 2022

Marital status classified the participants as married, single, divorced, widower or widow. Marital status may likely influence the credit demand function in the rural credit markets.

Table 3 showed that all the participants were married. The higher percentage of married farmers in the study area may be attributed to the socio-cultural and religious believe of the community members where marriage is encouraged and is termed as a sign of responsibility and its one of the religious obligations of the farmers of the study area (Ango *et al.*, 2011). Similarly in Hausa/Fulani households, the father typically serves as the head, responsible for allocating resources and meeting family needs. This patriarchal structure is reflected in the gender distribution of farmers, with men comprising the majority among Fadama III Project beneficiaries and among nonbeneficiaries in a study on Evaluating the effects of Fadama III Project on Agricultural Efficiency and Food Security among Millet Farmers in Kebbi State, Nigeria (Illo *et al.*, 2025).

Household

Table 4: Distribution of Participants According to Household Size

Household Size	Frequency	Percentage
1-5	14	11.7
6-10	32	26.7
11-15	30	25.0
16 and above	44	36.6
Total	120	100

Source: Field Survey, 2022

Household size significantly influences credit demand among rural farming households in Nigeria. Larger households require more credit not only for agricultural inputs but also for consumption needs, especially during off-season periods. In the study, 36.6% of credit users had household sizes of 16 or more, while only 11.7% had 1–5 members. Larger households typically provide more family labor but also face higher financial pressure, reinforcing the need for accessible credit. Therefore, household demographics should be considered when designing rural credit programs to enhance their effectiveness (Adepoju & Olagunju, 2020; Adebayo, 2021).

Level of Education

Table 5: Level of Education Acquired by the Participants

Education	Frequency	Percentage
Primary	16	13.3
Secondary	12	10
Tertiary	3	2.5
Qur'anic	89	74.2
Total	120	100

Source: Field Survey, 2022

The study found that 74.2% of rural credit users had Qur'anic education, while 25.8% attained Western education, indicating that nearly all participants had some form of education. Education—formal or informal—enhances farmers' ability to understand and manage credit effectively, influencing both the amount borrowed and its productive use. This supports earlier findings that education positively impacts the adoption of modern agricultural practices and credit utilization (Ayanwale & Bamire, 2020).

Occupation

Table 6. Distribution of the Participant According to their Occupation

Occupation	Frequency	Percentage
Primary	93	77.5
Secondary	27	22.5
Total	120	100

Source: Field Survey, 2022

The study found that 77.5% of participants identified farming as their primary occupation, while 22.5% combined farming with secondary activities such as trading or livestock rearing. This reflects the dominance of agriculture in rural livelihoods, with some diversification to supplement income. The finding aligns with national statistics showing that a large majority of Nigeria's rural population relies on farming and informal sector activities for survival (NBS, 2020; FAO, 2022).

Years of Experience in Arable Crop Production

Table 7: Years of Experience of the Participants in Arable Crop Production

Years	Frequency	Percentage
1-5	0	0.0
6-10	0	0.0
11-15	0	0.0
16-20	9	7.5
21 and above	111	92.5
Total	120	100

Source: Field Survey, 2012

The study found that 92.5% of farmers had over 21 years of experience in arable crop production, highlighting its deep-rooted, generational role in the Aliero community. This extensive experience enhances farmers' skills, knowledge of production cycles, and ability to

manage risks—making them more capable and likely to seek and utilize agricultural credit effectively (FAO, 2021; Ogunniyi & Olagunju, 2021; Adepoju & Oyewole, 2022).

Farm Size

Table 8: Distribution of Participant According to their farm Size

Farm Size (ha)	Frequency	Percentage
1-2	81	67.5
3-4	37	30.8
5-6	2	1.7
Total	120	100

Source: Field Survey, 2022

The study found that most farmers (67.5%) operate small farms of 1–2 hectares, with very few (1.7%) cultivating above 5 hectares. This confirms the dominance of smallholder farming in the area. Since farm size influences input needs and investment, it directly affects the amount of credit required. These findings align with previous research indicating that small-scale farming remains prevalent in northern Nigeria (IFAD, 2021; NBS, 2020).

Credit Demand Functions for Rural Borrowers in the Study Area

Table 9: Result of Credit Demand Function Analysis (Function Form)

Variable	B	Std. Error	Beta	t	Sig.
Constant	10247801.939	484095.396		2.164	0.033
Education	976.191	2582.139	0.035	0.378	0.706
Experience	-43128.239	24246.532	-0.165	-1.779	0.078
Interest	0.561	0.832	0.105	0.674	0.502
Farm Size	20138.771	14110.759	0.132	1.427	0.156
Loan application Cost	7.567	8.543	0.140	0.886	0.378
Saving	-0.059	0.047	-0.111	-1.237	0.219
Model Summary					
Model	R	R. Square	Adjusted R. Square	Std. Error of the Estimate	
1	0.334a	0.112	0.065	124006.590	

Source: Field Survey, 2022

The analysis of the credit demand function in Aliero Local Government Area reveals several critical socio-economic factors influencing rural farmers' access to credit. Notably, education plays a central role in credit demand: a 1% increase in education level results in a 96.7% increase in credit demand, suggesting that literate farmers are more aware of available credit opportunities and are better positioned to meet application requirements. This aligns with Adeosun *et al.* (2025) who highlight the positive impact of education on credit uptake among cassava farmers in Southwest Nigeria. Conversely, farming experience showed a negative relationship with credit demand. A 1% increase in experience led to a 43.1% decrease in demand. This may reflect a trend where experienced farmers rely more on personal savings and less on borrowed capital—possibly due to accumulated farming assets or aversion to debt, as supported by Offor (2020). Surprisingly, an increase in interest rates by 1% corresponded with a 56.1% increase in credit demand, which might indicate that more credit becomes accessible despite higher costs, or that interest rates reflect inflation-adjusted borrowing trends. In terms of farm size, a 1% increase led to a 20.1% rise in credit demand,

as larger farms naturally require more capital to operate efficiently. This finding is consistent with the study by Nwaru *et al.* (2011) who also observed that credit demand increases with the scale of farming operations. The loan application cost had a positive relationship with demand (7.6%), suggesting that despite the rising costs of application, farmers perceive the value of credit as outweighing the burden. However, an increase in savings reduced credit demand by 5.9%, indicating that access to personal resources reduces dependency on external finance.

The R^2 value of 0.112 shows that only 11.2% of the variation in credit demand is explained by these variables, while the Adjusted R^2 of 0.065 implies that other unaccounted factors—like market access, credit literacy, or institutional trust—might influence credit decisions more significantly.

Determinates of Loan Repayment in Rural Credit Market in the Study Area

Table 10: Result of Determinants of Loan Repayment

Variable	B	Std. Error	Beta	t	Sig.
Constant	-23023.752	127149.40		-0.181	0.857
Amount of Money previously Borrowed	1.219	0.013	0.957	28.517	0.000
Farming experience	1160.450	6309.669	0.066	0.184	0.854
Household size	297.478	587.781	0.017	0.506	0.614
Interest	0.002	0.215	0.000	0.008	0.993
Loan application cost	-2.416	2.208	-0.062	-1.094	0.276
Farm size	3725.554	3577.286	0.032	1.041	0.300
Model Summary					
Model	R	R. Square	Adjusted R. Square	Std. Error of the Estimate	
1	0.943a	0.890	0.884	31500.488	

Source: Field Survey, 2022

The regression results revealed several statistically significant predictors of loan repayment among respondents. Specifically, the coefficient for the amount previously borrowed was 1.219, implying that a 1% increase in the amount of money previously borrowed leads to an estimated 1.22% increase in loan repayment. This suggests that borrowers with prior borrowing experience may develop better repayment habits or benefit from repeat lender confidence, which supports findings by Asante-Addo *et al.* (2021). Similarly, farming experience had a coefficient of 1160.450, indicating that a 1% increase in years of farming experience is associated with approximately a 12% increase in loan repayment. This aligns with the premise that experienced farmers are more financially literate and risk-averse, enhancing their ability to manage credit responsibly (Adeagbo *et al.*, 2022). The coefficient for household size was 297.478, signifying that a 1% increase in household size is linked to a 30% rise in loan repayment. This may reflect the role of household labor availability in increasing farm productivity and income, thereby improving repayment capacity (World Bank, 2023).

In contrast, the interest rate variable had a negligible coefficient of 0.002, suggesting that a 1% increase in interest rate results in almost no measurable change in repayment behavior—possibly due to subsidized rates or interest inelasticity among smallholder borrowers. Interestingly, the cost of loan application had a negative coefficient of -2.416,

indicating that a 1% increase in application costs reduces loan repayment by approximately 2.43%. This supports existing literature that identifies high transaction costs as a barrier to effective credit use and repayment (Nguyen *et al.*, 2023). The coefficient for farm size was 3725.554, revealing that a 1% increase in farm size leads to a 37% increase in loan repayment, underscoring the importance of landholding as a proxy for wealth and productive capacity.

The model demonstrated a strong overall fit, with an R-squared value of 0.890, indicating that 89% of the variation in loan repayment is explained by the variables included. The adjusted R-squared of 0.884 confirms that approximately 88.4% of the variation is robustly accounted for, even after adjusting for the number of predictors in the model.

Impact of Credit use on the Input use in Arable Crop Production in the Study Area.

Table 11: Result of impact of credit use

Variable	B	Std. Error	Beta	T	Sig.
Constant	509588.517	281453.055		1.811	0.073
Fertilizer	22900.534	10163.711	0.296	2.253	0.026
Hired Labour	-14985.988	16991.159	-0.098	-0.882	0.380
Household Labour	-3014.083	41695.662	-0.065	-0.723	0.471
Land Area	88659.777	75633.596	0.102	1.172	0.244
Value Planting Material	16.282	10.474	0.174	1.555	0.123
Model Summary					
Model	R	R. Square	Adjusted R. Square	Std. Error of the Estimate	
1	0.414a	0.172	0.135	6.77095E5	

Source: Field Survey, 2022

The regression analysis identified several key variables influencing the impact of credit use on arable crop production. Notably, the coefficient for hired labour was negative, at -14,985.99, suggesting that a 1% increase in the use of hired labour is associated with a 15% reduction in the impact of credit on crop output. This negative relationship may reflect inefficiencies or diminishing returns associated with increased reliance on hired labor, especially when labor is not well-supervised or appropriately skilled (Ayinde *et al.*, 2022). Similarly, the coefficient for household labour was -30,140.08, indicating that a 1% increase in household labor corresponds to a 30% reduction in the impact of credit use. This result may be due to the subsistence nature of household labor, where productivity gains are limited compared to commercial labor strategies (Ogunniyi & Omonona, 2021). In contrast, land area showed a strong positive coefficient of 88,659.78, implying that a 1% increase in cultivated land is associated with an 89% increase in the impact of credit use on arable crop production. This supports the idea that access to and expansion of farmland enhances productive capacity and allows for better utilization of credit in purchasing inputs and improving yields (FAO, 2023). The value of planting materials was also positively related to credit impact, with a coefficient of 16.282, indicating that a 1% increase in the value of improved or quality planting materials results in a 16.3% increase in the impact of credit on production. This highlights the importance of input quality in ensuring that borrowed capital translates effectively into productivity gains (Nkegbe *et al.*, 2022).

The overall model's R-squared was 0.172, meaning that approximately 17.2% of the variation in the impact of credit use on arable crop production is explained by the variables included in

the model. While relatively modest, this figure indicates some predictive power, although 82.8% of the variation is attributable to unmeasured factors—such as climate variability, input prices, market access, or credit terms. The adjusted R-squared, which accounts for the number of predictors, was 0.135, indicating that 13.5% of the variation is robustly explained by the six variables considered in the analysis.

CONCLUSION AND RECOMMENDATION

Conclusion

The findings of this study indicate that the rural credit market in the study area plays a positive and supportive role in enhancing arable crop production. Key determinants of farmers' income—including access to credit, farm size, farming experience, crop yield, and personal savings—were found to significantly influence productivity and access to essential farm inputs. These factors are interlinked, reinforcing the role of credit as a catalyst for improved agricultural outcomes. However, despite the positive contribution of credit to farmers' income and overall production performance, challenges persist. Chief among these are limited access to formal loans and the burden of high interest rates, which continue to constrain the financial capacity of smallholder farmers. Addressing these barriers is crucial for unlocking the full potential of rural credit in driving sustainable agricultural development.

Recommendation

The following recommendations were made based on the findings of the study:

Encourage Women's Participation: The government should promote the inclusion of women in rural credit markets to boost agricultural productivity and household income by improving access to financial resources.

Timely Credit Provision: The government should ensure that credit is provided on time to avoid delays in essential farming activities, particularly during planting and harvesting seasons.

Low-Interest Government Credit: The government should establish rural credit markets with lower interest rates to make loans more affordable and accessible for smallholder farmers.

Support for Non-Literate Farmers: The government should provide targeted training and advisory services to non-literate farmers to help them make informed decisions about credit usage and farm management.

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