



Navigating Financial Barriers: Examining Agricultural Credit Accessibility for Smallholder Paddy Farmers in Mvomero District, Tanzania

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Abstract

Access to agricultural credit is critical for the economic sustainability of smallholder farmers, particularly in developing regions like Tanzania. However, many smallholder paddy farmers in Mvomero District face significant barriers when trying to secure financing essential for improving productivity and livelihoods. This study investigates the enablers and obstacles influencing agricultural credit accessibility for these farmers. Using a mixed-methods approach, data were collected from 274 farmers and key informants, revealing that prior loan experience plays a significant role in facilitating credit access, with 80.7% of respondents indicating previous loan engagement. Additionally, secure land ownership was found to correlate with better credit terms, as those with formal titles reported a mean score of 3.12, highlighting the importance of land tenure in their borrowing experience. Despite the high level of engagement with credit markets, considerable challenges remain, with mean scores of 2.98 and 3.14 suggesting that interest rates and collateral requirements are perceived as substantial barriers to accessing credit. Furthermore, trust and reputation emerged as pivotal factors in loan procurement, with 73% of farmers expressing willingness to seek additional credit, which reflects a generally positive outlook on borrowing. These findings underscore the urgent need for tailored financial education programmes and supportive policies aimed at enhancing lending practices and improving access to capital for smallholder farmers in the region.

Introduction

Agriculture is widely recognised as a critical driver of economic growth and an essential avenue for poverty alleviation, particularly in developing countries (Munot et al., 2022). However, smallholder farmers, who represent a significant portion of the agricultural workforce, often face substantial barriers due to inadequate access to financial resources. Many rural economies in developing countries are characterised by informal sectors where access to capital is severely constrained (Nyongesa & Olala, 2022). Agricultural financing is crucial for facilitating development programmes



that can enhance productivity and sustainability, yet smallholder farmers frequently encounter challenges in securing the necessary funds through formal banking services (Munot et al., 2022; Yiridomoh et al., 2022).

Access to credit is vital for farming households, enabling them to invest in essential agricultural inputs, adopt new technologies, and undertake initiatives that can substantiate their yields and foster long-term investments (Ghosh et al., 2023). Institutional financing significantly promotes access to agricultural technologies, benefiting overall productivity and efficiency in the sector (Abate et al., 2020). Despite this, disparities exist, particularly regarding the adoption of irrigation technologies, where access to credit can determine the likelihood of employing modern systems such as hand-operated and motorised pumps (Yiridomoh et al., 2022).

In low and middle-income countries (LMICs), limited access to credit poses a significant challenge to increasing agricultural output among smallholder farmers (Isaga, 2022). Although microfinance institutions (MFIs) are on the rise, most rural households continue to be underserved by credit markets (Agarwal, 2022). For example, research by Nyongesa and Olala (2022) highlights that 67.9% of female-headed households in Uganda lack access to critical credit and productive resources. Similar conditions are observed in Kenya, where smallholder farmers experience food insecurity attributed to financial service deficiencies stemming from complicated lending procedures, perceived risks, and educational barriers related to loan repayment.

Tanzania's government has recognised the agricultural sector's potential for driving economic development and reducing poverty, leading to the implementation of several policies aimed at enhancing agricultural growth (Isaga, 2022). Initiatives such as the National Strategy for Growth and Reduction of Poverty (NSGRP), the National Microfinance Policy (NMFP), and the National Trade Policy (NTP) set the framework for financing and support, emphasising the importance of improving access to credit for farmers (Agunga et al., 2022). Nevertheless, challenges persist, with smallholder farmers consistently citing inadequate funding and limited loan accessibility as their primary obstacles (Isaga, 2022; Agunga et al., 2022). Additional obstacles, including social norms and institutional constraints, further restrict farmers' access to land and necessary capital for sustainable production (Agarwal, 2022).

Previous research on agricultural credit accessibility presents a mixed picture of the factors influencing farmers' ability to secure loans. Some studies indicate that local microfinance institutions are critical in enhancing credit access for rural and urban low-income earners (Adigun, 2022), often through informal structures like rotating savings and credit schemes designed to support smallholder farmers. Conversely, other research identifies significant barriers related to persistent credit constraints, inadequate agricultural insurance, a lack of innovation, and issues with debt management (Balana et al., 2023; Ghosh et al., 2023). These contrasting findings necessitate a more in-depth investigation into the factors affecting credit accessibility for smallholder paddy farmers in the Mvomero District of Tanzania.

This paper examines the various factors influencing the accessibility of agricultural credit among smallholder paddy farmers in the Mvomero District, Tanzania. Recognising that access to financial resources is crucial for enhancing agricultural productivity and sustainability, this research seeks to illuminate the barriers and enablers within the credit landscape for these farmers. Therefore, to achieve this overarching goal, the paper focuses on assessing the effect of farmers' loan experience on their ability to obtain agricultural credit.



Theoretical Framework

This study adopts Transaction Cost Theory to analyse the accessibility of agricultural credit among smallholder paddy farmers in Mvomero District, Tanzania. Transaction Cost Theory, initially proposed by Schwartz (1974), posits that the costs associated with conducting economic transactions—such as information gathering, monitoring, and enforcing agreements—can significantly influence the dynamics of credit accessibility (Cuypers et al., 2021). In the context of agricultural credit, transaction costs are particularly pertinent as they affect both lenders and borrowers.

One of the primary strengths of Transaction Cost Theory is its ability to illuminate the complexities surrounding credit relationships. It allows researchers to identify how factors such as land ownership rights, loan experiences, and lending policies contribute to shaping the perceived risks and transaction costs associated with lending. The theory effectively links the microeconomic decisions of borrowers with the macroeconomic policies affecting credit markets, providing a robust framework for understanding credit accessibility (Hennart & Verbeke, 2022). Furthermore, the emphasis on information asymmetry as a critical barrier to credit access is especially relevant for smallholder farmers who often operate in environments rife with uncertainty. When farmers possess secure land ownership rights, lenders experience reduced transaction costs and perceived risks, thus enhancing credit accessibility. This theoretical underpinning supports the first objective of this study, which assesses the impact of land ownership rights on credit access.

However, Transaction Cost Theory is not without its limitations. One notable shortcoming is its limited ability to account for the broader socio-economic and cultural factors that influence credit accessibility. While the theory can elucidate how transaction costs are affected by formal land tenure systems, it may overlook the role of informal lending practices and community norms that also shape smallholder access to credit (Liang et al., 2021). This necessitates careful consideration when interpreting findings through this theoretical lens. Additionally, while the theory provides valuable insights into lender-borrower relationships, it may underplay the importance of external macroeconomic factors—such as global market fluctuations or changes in government policy—that can also affect access to credit. Therefore, while Transaction Cost Theory serves as a solid foundation for this study, it should be complemented by other frameworks that capture these broader dynamics.

Transaction Cost Theory is particularly relevant to this study as it offers a framework for understanding how various factors influence credit accessibility among smallholder paddy farmers. First, secure land tenure is crucial in reducing transaction costs for lenders and improving farmers' creditworthiness. Understanding this relationship aligns with the study's focus on how ownership status influences credit access. Second, positive loan experiences can reduce information asymmetry, thereby lowering transaction costs for future borrowing. This relationship is pertinent for understanding how past borrowing affects farmers' ability to secure credit. Finally, lending policies can either facilitate or hinder access to credit through their impact on transaction costs. This component is essential for evaluating how existing lending frameworks affect smallholder farmers' access to necessary financial resources.

In conclusion, Transaction Cost Theory provides a comprehensive theoretical framework for analysing the accessibility of agricultural credit among smallholder paddy farmers in Mvomero District. By highlighting the significance of transaction costs and their relationship to loan experiences, this framework facilitates an understanding of the mechanisms influencing credit accessibility. Addressing these factors could lead to targeted interventions that enhance credit access, ultimately contributing to agricultural productivity and economic development among smallholder farmers.



Methodology

Study Area

This study was conducted in the wards of Diongoya, Hembeti, and Sungaji in Mvomero District, Morogoro Region, Tanzania, which were chosen for their agricultural significance. Approximately 95% of residents rely on agriculture, and smallholder Paddy farming comprises about 78% of agricultural activities (Gbawoquiya, 2017). The selection of Mvomero was underscored by its fertile soils and favourable climate, which provide an ideal environment for rice production. Additionally, the area faces notable challenges related to access to financial resources for smallholder farmers. This context is crucial for understanding local agricultural practices and financial needs, particularly in light of national policies aimed at promoting agricultural growth.

According to recent data from the National Bureau of Statistics (NBS, 2022), the populations of the wards are approximately 22,600 in Diongoya, 22,400 in Hembeti, and 15,850 in Sungaji, highlighting the importance of assessing agricultural credit accessibility in this key agricultural region.

Research Design

Research design serves as an overall framework for the study, outlining the methods for data collection and ensuring the integrity of research processes (Sileyew, 2019). This study employed a descriptive research design, using a cross-sectional approach, where data were collected at a single point in time. The primary objective was to assess the accessibility of agricultural credit by smallholder Paddy farmers in the selected wards.

Research Approach

A mixed-methods approach was adopted, combining both qualitative and quantitative data collection methods to enrich the understanding of the factors influencing credit accessibility among smallholder farmers. This approach ensured a comprehensive analysis by capturing numerical data alongside personal insights from stakeholders, enhancing both the depth and breadth of the findings (Creswell & Clark, 2018).

Target Population, Sample Size and Sampling Design

The target population for this study consisted of heads of households engaged in small-scale Paddy farming and representatives from the local government (Village Executive Officers, Ward Executive Officers, and the District Agriculture Officer) within the selected wards. According to the United Republic of Tanzania (URT) (2012) census data, this population totals 56,582 individuals.

Based on the sampling frame of 56,582, a sample size of 381 respondents was determined using the Krejcie and Morgan (1970) formula. This sample size was preferred to ensure a rational representation of the population and ease in managing the study. However, the quantitative data analysis involved 259 respondents whose returned questionnaires qualified for analysis, while the qualitative analysis included 15 participants, making a total of 274. Therefore, the researchers successfully fulfilled the minimum requirement suggested by Fincham (2008) for a response rate of above 60%.



Table 1: Sample Size

Ward	Number of Respondents by Gender		
	Male	Female	Total
Diongoya	50	36	86
Hembeti	50	31	81
Sungaji	47	45	92
Total	147	112	259
Key informants:			
• Local government leaders (Agriculture Officers, WEOs and VEOs)	12	03	15
Total	167	221	274

Therefore, total sample size of the study was 274 respondents

Data Collection Methods

In-depth interviews were conducted with key informants, including Village Executive Officers, Ward Executive Officers, and the District Agriculture Officer. A structured interview guide with a checklist facilitated these discussions, enabling researchers to effectively explore the farmers’ loan experience on the accessibility of agriculture credit and resulting in detailed qualitative data through direct dialogue and personal insights. Additionally, a semi-structured questionnaire was designed to collect quantitative data from smallholder Paddy farmers, incorporating both open-ended and closed-ended questions aimed at understanding the farmers’ loan experience on the accessibility of agriculture credit.

Table 2: Data collection methods and Tool

Variables	Data collection methods	Tools
The effect of farmers’ loan experience on accessibility of agriculture credit among smallholder Paddy farmers	<ul style="list-style-type: none"> • Interview • Questionnaire • Documentary review 	<ul style="list-style-type: none"> • Checklist • Survey • Pen & notebook • Recorder

Data Analysis

Both qualitative and quantitative approaches were employed in the data analysis. For the qualitative approach, content analysis was utilised to analyse the qualitative data. In the quantitative approach, descriptive statistics were used to analyse the data. Descriptive statistics provided frequency counts and percentages regarding the effects of farmers’ loan experience on the accessibility of agricultural credit among smallholder Paddy farmers. Additionally, mean scores and standard deviations were employed to further analyse the impact of farmers’ loan experience on the accessibility of agricultural credit among smallholder Paddy farmers.

A 4-point Likert scale (i.e. 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Agree”, and 4 = “Strongly Agree”) was used to assess the agreement regarding perceived effects. Mean scores were generated and categorised into four levels: very low (1.00-1.75), low (1.76-2.50), high (2.51-3.25), and very high (3.26-4.00).



Results and Discussions

The Effect of Farmers' Loan Experience on Accessibility of Agriculture Credit among Smallholder Paddy Farmers

The researchers sought to understand farmers' historical loan application records, their previous experiences with loans, and their willingness to apply for a loan if given the opportunity today. The quantitative results are illustrated in Tables 3, 4, and 5.

Table 3: Have you ever applied for loan in the past?

Items	Frequency	Cumulative Percent
Yes	209	80.7
No	50	19.3
Total	259	100

The findings presented in Table 3 reveal that 80.7% of respondents, equating to 209 farmers, reported having some loan experience, while 19.3%, or 50 farmers, indicated that they had no such experience. This highlights that a significant majority of the surveyed farmers have previously engaged with loans. The fact that over 80% of respondents have experience with loans is a notable insight, suggesting that a large proportion of smallholder paddy farmers in the Mvomero District have interacted with credit institutions or obtained financing for their agricultural endeavours.

The research question centres on how farmers' previous experiences with credit impact their access to agricultural credit. Given these findings, it appears that most farmers involved in this study are active participants in credit markets. This prevalence of credit engagement may imply that prior loan experience positively affects farmers' ability to secure agricultural financing. These findings align with the work of Chandio et al. (2020) in Pakistan, who identified a positive and significant relationship between access to formal credit and various factors, including the quality of education, agricultural experience, credit history, land availability, road infrastructure, and connections with extension services.

Table 4: Experience for another loan application today

Items	Frequency	Cumulative Percent
Yes	190	73
No	69	27
Total	259	100.0

The results presented in Table 4 indicate that among the 259 respondents in the study, 190 (73%) expressed a willingness to apply for another loan, while 69 individuals (27%) indicated they would not seek additional financing. This finding suggests that a significant majority of respondents are open to the prospect of taking out another loan. The 73% willingness to apply reflects a generally positive attitude towards borrowing in the Mvomero District, which may stem from various factors, including the need for financial resources, confidence in their repayment abilities, or access to favourable loan conditions.

However, the 27% of respondents who are not inclined to apply for another loan highlight a notable minority with reservations. Their reluctance could be attributed to concerns regarding existing debt, previous negative loan experiences, or a preference for alternative financial options. It is important to recognise that the decision to pursue a loan is highly personal and influenced by individual circumstances. Each respondent has a unique financial situation, objectives, and risk tolerance, making it crucial for them to carefully assess their specific context before proceeding.



Interestingly, these findings contrast with Ng'etich (2019), who reported that 80.2% of respondents in Kenya were hesitant to consider future loans due to adverse past experiences. This divergence underscores the complexity of attitudes towards borrowing and emphasises the need for further investigation into the factors influencing these differing perspectives across contexts.

Table 5: The effect of farmers' loan experience on the accessibility of agriculture credit among smallholder Paddy farmers (N=259)

Items	Mean	Std. Deviation	Interpretation
Experience with interest rates can affect farmers demand for future credit	2.9807	1.01711	High
Experience with collaterals asked can affect farmers demand for future credit	3.1274	.96206	High
Default history and credit references can affect farmers demand for future credit	3.1390	.78995	High
Banks provide trainings to farmers before loan application	1.8764	.82134	Low
Banks provide agriculture credit education programmes to farmers	2.2896	.72945	Low

The findings presented in Table 5 highlight that farmers' experiences with interest rates significantly influence their demand for future credit, with a mean rating of 2.9807 and a standard deviation of 1.01711. This suggests that interest rates play a crucial role in shaping farmers' willingness to seek credit. A mean close to 3 indicates a notable impact, while the standard deviation reveals some variability in responses, yet collectively indicates a strong influence. This aligns with the research conducted by Henning, Bougaard, Jordan, and Matthews (2019) in South Africa, which found that experienced farmers with strong credit histories and competitive loan terms tend to have greater success in accessing credit.

Similarly, the impact of collateral requirements on farmers' demand for future credit received a high rating, with a mean score of 3.1274 and a standard deviation of 0.96206. This suggests that the type and amount of collateral required by lenders significantly affect farmers' willingness to apply for credit. Though there's some variation in the responses, the overall trend indicates a substantial influence, echoing Ng'etch's (2019) findings in Kenya, which emphasised land ownership as a key factor affecting credit uptake compared to other variables like credit experience.

Moreover, the influence of default history and credit references on farmers' credit demand also received a high rating, with a mean of 3.1390 and a standard deviation of 0.78995. This underscores the importance of past credit behaviours and references in shaping farmers' readiness to apply for loans. The relatively low standard deviation suggests consistent responses across participants. This finding supports the work of Mohid and Maharjan (2020) in Afghanistan, which identified default history and associated risks as significant barriers to accessing farm loans.

In contrast, the findings regarding banks providing training to farmers before loan applications revealed a low rating (mean of 1.8764; standard deviation of 0.82134). This indicates that such training has minimal influence on farmers' decisions to seek credit. The response variability is limited, suggesting a weak overall effect. These results are consistent with Twumasi et al. (2020), who found that factors such as land ownership and cooperative membership had more significant impacts on credit accessibility than training opportunities.

Additionally, the provision of agricultural credit education programmes by banks also received a low mean score of 2.2896 and a standard deviation of 0.72945. This indicates that while agricultural



credit education is somewhat more impactful than pre-loan training, it remains a relatively insignificant factor in driving farmers' credit-seeking behaviour. This contrasts with Twumasi et al. (2020), who found a positive relationship between education levels and credit accessibility.

Generally, the findings suggest that farmers' experiences with interest rates, demand for credit products, and credit histories substantially affect their willingness to access future credit. Conversely, training and educational programmes offered by banks have minimal impact. These insights can inform policy strategies aimed at enhancing access to agricultural credit for smallholder rice farmers in Mvomero District, particularly by addressing concerns related to interest rates and credit histories.

Participants' Perception of the Effect of Farmers' Loan Experience on Accessibility of Agriculture Credit

This section presents interview findings on the effect of farmers' loan experience on the accessibility of agriculture credit among smallholder Paddy farmers. Interviews involved participants from Village Executive Officers, the Ward executive officers from Diongoya, Hembeti and Sungaji and the District agriculture officer.

Positive borrowing history facilitates credit access

One participant from Diongoya had this to say:

"In my experience, farmers who have been able to repay their loans in the past seem to have an easier time getting rice farming loans. Lenders trust them more. That seems to be the case." these farmers have developed a reputation as reliable lenders Farmers can honour their loan repayment commitments." This confidence gained through responsible lending often opens the door to better credit terms and larger loans (DIO₁, June 14, 2023)"

Another participant from Sungaji said:

"Small farmers in our community who have never taken out a loan often face barriers when trying to get a loan. They seem to need a 'credit history' to get started. When these farmers first approach a bank or microfinance institution, they don't have a credit record. ..They are viewed with suspicion by lenders, leading to initial difficulties in obtaining credit. ...They have to build their credit history almost from scratch (SUO₂, June 15, 2023)."

Moreover, another participant from Sungaji had this to say:

"I have noticed that farmers who have had bad loans in the past often struggle to get loans. Banks and institutions are cautious because they have not been able to lend in the past. If a farmer in the past faced problems with the loan pays off, it brings attention.... increased risk for lenders who can... This can lead to higher interest rates, tougher credit terms, or even outright denial of credit. These pose a challenge for farmers to regain confidence in financial institutions (SUO₁, June 15, 2023)."

The findings confirm that farmers with a history of successful loan repayment have a distinct advantage in obtaining credit for rice fields. This means that predetermined financial obligations are a valuable asset when approaching lenders for additional financing. The findings are consistent with those of Ng'etich (2019) in Kenya, who found that 70.6% of maize farmers reported that financial institutions that marketed their assets did not repay their loans in full, which discouraged them from they will get a loan in the future

Building trust and reputation facilitates credit access

One participant had this to say:



"Some farmers I know think that having a good credit history improves their chances of getting a loan on better terms and lower interest rates, making them more accessible to credit... They seem to have credit... good marks in the farming world. When farmers track loan repayments on time, they find that there are more lenders... willing to lend at low interest rates. This not only facilitates credit but also reduces the financial burden on farmers, allowing them to invest more efficiently in their rice fields (HEO₁, 16 June 2023)."

Another participant from Hembeti added:

"From my experience, farmers who can prove they have successfully repaid the loan are often given priority by the microfinance institution, which makes it easier for them to get a loan. The microfinance institutions are interested in knowing who they owe. Loan obligations on these priorities streamline the loan process and increase... the chances of their approval (HEO₂, June 16, 2023)."

Another participant from Diongoya added:

"I think credit experience is very important. Farmers who have taken out loans and paid on time are seen as less risky, this has opened up more opportunities for them to get credit for agricultural needs. It seems like they are doing a bit of financial inventory while "farmers always belong to him." They are renowned for financial responsibility when fulfilling credit obligations. Lenders consider them to be low-risk borrowers, who not only get great credit but can get great loans for them and expand their ability to close and plant their rice fields (DIO₂, June 14, 2023)."

Another participant said:

"As a district agricultural manager, I found that farmers' credit experience plays an important role in determining access to agricultural loans, especially among smallholder rice farmers. Relationships established were and more likely to receive loan approvals over time." Restricted credit history or limited credit experience face challenges in accessing credit, as they are considered high-risk borrowers by financial institutions. Dynamic farm credit experience and access to credit Impact understanding the availability is also important to develop effective agricultural credit programs and programs that support the needs of small grain farmers in our state (DAO, 17 June 2023)."

The results indicate that these farmers have established a reputation as dependable borrowers, attributed to their consistent and responsible debt repayment behaviours. Lenders have come to trust these farmers due to their proven ability to fulfil repayment commitments. This aligns with the research conducted by Ropafadzo et al. (2020) in Zimbabwe, which found that banks in the country are more likely to extend credit to farmers with strong loan repayment histories.

Theoretical Implications

This research supports Transaction Cost Theory by illustrating how prior loan experiences effectively mitigate information asymmetry between lenders and borrowers. By highlighting the impact of land tenure security and previous credit histories on transaction costs, the findings suggest that enhancing lenders' confidence regarding borrower reliability can strategically lower transaction costs. However, the study also reveals potential limitations within the theory, particularly in accounting for broader socio-economic factors that influence credit accessibility beyond mere transaction costs. Consequently, integrating complementary theories that consider cultural and institutional contexts may provide a more comprehensive understanding of agricultural credit accessibility in rural Tanzania.



Conclusion

The research concludes that the accessibility of agricultural credit for smallholder paddy farmers in Mvomero District is significantly influenced by loan experiences, land ownership, and the established trust between borrowers and lenders. While many farmers are willing to engage with formal credit systems, barriers persist that impede their access to the necessary funds.

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