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Smallholder Farmer Access to Bank Loans: A Case of Mvomero District

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Abstract: Smallholder farmers in Tanzania face a major constraint when it comes to accessing credit to invest in their farming activities. The study on which the paper is based was carried out in Mvomero District, Morogoro Region. Specifically, it aimed at determining the loan amount accessed, identifying farming activities on which loan accessed are spent on and *identifying* challenges facing smallholder farmers in accessing loans for farm investment. To address the aims a cross–sectional research design was adopted whereby data were collected only once. Purposive sampling was used to obtain 110 respondents from the selected wards. Data were collected using a structured questionnaire. Collected primary data were analyzed using a Statistical Package for Social Science (SPSS), whereby descriptive statistics such as frequencies and percentages were determined. Content analysis was used to analyze qualitative data. Generally, results show that loan acquisition among smallholder farmers varies as a few of them can benefit from being granted a greater loan while the majority receive an average to the minimal loan amounts. Further the results show that the majority of all of the smallholder farmers who participated in the study used the loan for paddy cultivation only. Lastly, the results show that the major challenges faced by smallholder farmers in their access to bank loans were high-interest rates, loan inadequacy, and high collateral demand. Therefore, the Government and financial institutions are recommended to find ways to increase smallholder farmers' access to loans, so as to enable them to raise their paddy productivity.

Keywords: Bank loan, Paddy productivity, Smallholder farmers

1. Introduction

The agricultural sector plays a vital role in the socio-economic development process of most developing countries, Tanzania included. The sector is the major source of livelihood in rural areas, contributing about 30.1% of the GDP and 30% of export value (URT, 2018). Paddy cultivation is among the major livelihood strategies as it ensures food security for people in many parts of the world. Globally, 55 percent of the area under rice cultivation is irrigated and contributes to 75 percent of the total rice production (Thiyagarajan and Gujja, 2013). Moreover, paddy is among the food crops whose demand in Sub-Saharan African (SSA) countries is increasing as a result of altered urban growth, the growing importance of the crop, and the challenges of attaining food security (Amos, 2014; Seck *et al*., 2010). Hence, the general intake of rice is predicted to rise greatly over the coming years (Kirby *et al.,* 2017).

In SSA, paddy production increased by 103% (13.7 to 27.9 MT from 2008 to 2018) in contrast with an increase of 31% from 1996 to 2007 (Arouna *et al.,* 2021). Among the different regions, the East African countries had the highest yield level but, the smallest yield increase of 5% (2.46 to 2.57 t/ ha from 2008 to 2018). In fact, the yield growth rate in Tanzania during the periods 2008–2012 and 2012–2018 has decreased from 9.19% to 3.63% respectively (Arouna *et al.*, 2021). About 90% of Tanzania's rice production is done by smallholders and production is concentrated in Mbeya, Morogoro, Shinyanga and Mwanza regions. Generally, paddy yield in Tanzania is stagnant while arable land per agricultural population is declining due to rapid population growth (Kilimo Trust, 2014). The present low yields suggest that these could be increased significantly.

Furthermore, access to credit improves the productivity, profitability, and sustainability of smallholders (Skees and Barnet, 2006). Moreover, limited access to credit is one of the main limitations facing smallholders in Africa. Additionally, formal financial institutions (FFIs') are reluctant to provide financial services to the group because of their lack of collateral such as titled land, unstable earnings, the risky nature of farming activities, and difficulties in evaluating smallholders' capacity to repay their loans (FAO, 2010).

Tanzania's rice sector is among the major sources of employment, a source of income and food security for farming households, and a reliable source of food supply for the urban population (CFC, 2012). In Tanzania, rice is the second most cultivated food and cash crop grown after maize, with a cultivated area of about 681 000 ha, which represents 18% of the cultivated land. However, productivity is generally very low (1.5-2 tons/ha.) as most paddy is grown using traditional methods. In addition, 71% of the paddy is grown under rain-fed conditions. The low yields obtained by subsistence rice growers are attributed to the combined effects of the use of low-yielding varieties, inadequate and unevenly distributed rainfall, weed infestations, the prevalence of pests and diseases, and marginal use of the country's irrigation potential (CFC, 2012; Fischler, 2020). About half of the country's rice is grown by 460 000 smallholder farmers in the regions of Tabora, Shinyanga and Morogoro (Fischler, 2020). With large amounts of suitable, unfarmed, arable land, a high rate of self-sufficiency and current low productivity, the government of Tanzania hopes to increase rice production and productivity to become a large net exporter of rice in East Africa and Africa in general.

Moreover, agricultural productivity statistics play a significant role in determining the sources of economic growth while also showing technical variations and justification for any price changes. Therefore, there is a knowledge gap as to the contribution or association of smallholder farmers' access to credit from banks and paddy productivity, which the current study aimed to fill. Specifically, the study aimed to determine the socio-economic factors associated with smallholder farmers' paddy productivity and the challenges that smallholder farmers encounter in accessing loans.

The study findings provide an understanding of the role of loans in smallholder farmers' productivity, in particular, that of paddy. Furthermore, the study findings are useful to Tanzania's efforts to raise smallholder paddy productivity, to promote industrial development, and meet the second goal among the 17 Sustainable Development Goals, which is to end hunger, achieve food security, improve nutrition and promote sustainable agriculture (UNDP, 2015). In addition, the findings of this study provide insights into resolving

issues encountered by farmers and financial institutions when accessing and granting credit to small-scale farmers, thus the potential for improving farmers' livelihoods.

2. Theoretical Framework

The study concentrates on the information asymmetry theory, which states that faulty information leads to an information dilemma (Vitor, 2018). However, based on the theme of the current study, which deals with socio-economic factors associated with bank loan access for paddy productivity among smallholder farmers, the theory is used to show the link between financial institutions (lenders) and borrowers. The effects of an information problem in a financial sector are classified by Hoff and Stiglitz (1990) into three main concerns: determining the extent of the default risk (screening problem), the cost of ensuring credit contracts are honoured (incentives problem), and the cost of monitoring credit beneficiaries to ensure loan repayment (enforcement problem). When lenders and borrowers do not share the same information about potential risks and rewards, there is information asymmetry in the credit market (Werner, 2016).

3. Conceptual Framework

The study's conceptual framework (Figure 1) shows household head characteristics in line with household farming characteristics, access to bank loans and paddy productivity. Figure 1 further shows access to bank loans is expected to improve household farming characteristics as this enables to afford the purchase of inputs, labour, farm equipment and investments in the modern farming technologies, which are more likely to improve their productivity. In addition, the study's conceptual framework considers factors such as access to extension services and farmers' paddy production. For example, the availability of extension services is assumed to influence farmers' access to information about the availability of agricultural inputs and new technologies (Makingi and Urassa, 2017). Furthermore, Figure 1, shows that policies which guide the formal financial institutions specifically banks on the provision of loans to farmers for agricultural purposes can in one way or the other influence farmers' access to credit hence their productivity. Nonetheless, the current study mainly concentrated on the formal financial institution as these have larger capital which could be accessed by many requiring huge capital investment. Other factors that might influence a household's paddy productivity include infrastructure, price of inputs, topographical and climate change (Tsusaka *et al*., 2021).

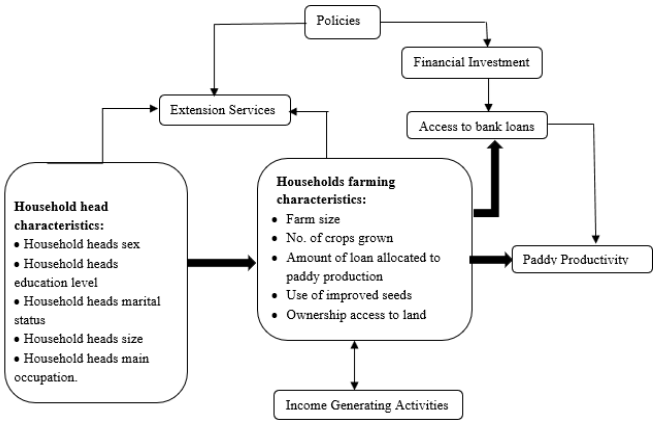

Figure 1: Conceptual Framework for the study on smallholder farmers access to bank loans

cited. Do not put footnotes in the reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors' names; do not use "et al.". Papers that have not been published, even if they have been submitted for publication, should be cited as "unpublished" [4-8]. Papers that have been accepted for publication should be cited as "in press" [9-12]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

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4. Research Methodology

4.1 Description of the study area

The study was conducted in Mvomero District, Morogoro Region, Tanzania. Mvomero District was purposively selected for the study due to the availability of smallholder farmers constituting the majority of the population in the district and the availability of financial institutions, specifically banks that give out loans to smallholder farmers in the study area. Furthermore, the study area has favourable agro-ecological conditions that support paddy cultivation (URT, 2017).

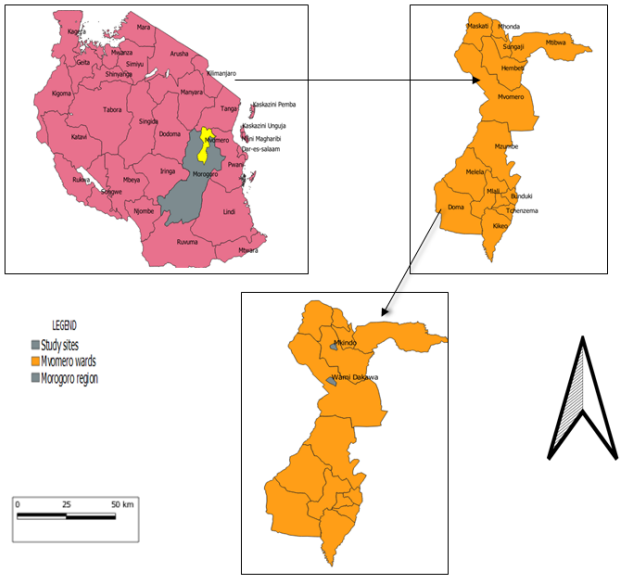

Figure 2.1: Map showing Mvomero District
Source: Author's Construct

4.2 Research design

The study adopted a cross-sectional research design. The design was thought to be suitable for the current study because the design permits one to obtain data concerning past and current experiences to identify any cause-and-effect relationships (Matthew and Ross, 2010). Furthermore, the choice of this method is due to its ability to meet the study objectives as it is relatively quick, inexpensive to conduct, not costly to perform, and does not require a lot of time. It also helps to determine associations between variables.

4.3 Sampling techniques and sample

A total of 110 smallholder paddy farming households in Mvomero District were selected to participate in the study. Respondents were selected based on the farmer borrower registers obtained from NMB and CRDB branches in Morogoro. The selection criteria for this population were purposive; that is, smallholder farmers who are loan beneficiaries were the target. The sample size was determined according to Boyd *et al.* (1981), with an intensity of 25% for every sampling frame. The reason for using 25% intensity was due to the low availability of the number of smallholder farmers who have accessed loans in the study area. Table 1 shows the sampling frames and samples.

Table 1: Sampling frame and samples

Ward	Bank Name	No of Loan Beneficiaries	Sample Size
Dakawa	CRDB	240	60
Mkindo	NMB	200	50
Total			110

4.4 Data collection

Primary data were collected from respondents using a pre-structured questionnaire with both open and closed-ended questions (Appendix 1). The questions mainly focused on collecting data on smallholder farmers who accessed loans from different financial institutions. In addition, data were collected through KIIs. A total of 4 KIIs were conducted, consisting of village executive leaders and loan officers from the respective banks. Through the KIIs (Appendix 3), in-depth qualitative data were obtained to verify the information gathered through the questionnaire. Further, four FGDs were conducted using an FGD guide (Appendix 2) with members of village executive leaders and smallholder farmers. The FGDs involved 6 to 8 participants and a total of 28 participants were involved in the discussions. To ensure validity and reliability of the collected data, the data gathering tools were pre-tested in the study area, before the actual data collection to guarantee familiarity and clarity. Collected data were not included in the study's final analysis.

4.5 Data Analysis

Quantitative data collected through the questionnaire were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20, whereby both descriptive (frequencies and percentages) statistics were determined. Qualitative data were analyzed using content analysis.

5.0 Findings and Discussions

5.1 Respondent's demographic and socio-economic characteristics

According to the study findings, the demographic and socio-economic characteristics of the respondents show that the majority of the respondents (61.8%) were males (Table 2). The study's observation may be because in most of the households in the study area, men were believed to be

household heads, thus empowering them to control family assets such as land and houses. On the contrary, women fail to acquire loans from financial institutions due to a lack of collateral that is in the power of their husbands, whose main occupation is not farming. The argument above conforms to what was said by one of the key informants that:

> *There are a lot of women who are in need of agricultural loans, but the problem comes with collateral. Generally, their husbands or partners, who are the heads of the family, do not allow them to use the title deeds to them so as to acquire loans from banks.* (A 33-year-old Female Key Informant, CRDB BANK, 08th September, 2021).

According to Mukasa *et al.* (2015), the vast majority of land in African countries is owned by men. Nigeria leads the way in unequal distribution, with only 17.1 percent of plots owned by women, compared to 28.5 percent in Uganda and 34.9 percent in Tanzania. The results in Table 2 show that the mean age of the respondents was 42.3 years. The study revealed that more than half (55.5%) of respondents were adults aged between 36 and 60 years, followed by youth aged between 18 and 35 years (36.4%). Finally, a few (8.2%) were over 60 years old. As a result, because the majority of the respondents' paddy farmers were likely to be of productive economic age, they were more likely than the elderly group to apply for bank loans for paddy production-related activities. Thus, the study's findings agree with those of Mwidege and Katambara (2020), who argued that age affects the adoption behaviour of paddy farmers. Table 2 also shows that over three-quarters of the respondents (78.2%) were married, 15.5% were single, 5.5%) were widows, and (0.9%) were separated.

In addition, the study's findings in Table 2 show that more than three-quarters (80.9%) had attained primary school education, over a tenth (13.6%) had no formal education at all, and only a few (5%) had attained secondary school education. Concerning farm size, the average farm size in the study area was 2.4 ha. More than a half (66%) of the respondents possessed 0.4–1.6 ha, followed by over a third (35.5%) having 1.6–2.8 ha, and a few (1.8%) had greater than 2.7 ha.

Furthermore, all (100%) of the respondents depend on crop production as their main source of income (Table 2). This suggests that agriculture is the pillar of the majority of rural people's economies. This is further supported by a research conducted by URT (2012), which found that Tanzania's agricultural sector is a crucial driver of the country's social and economic growth. Slightly more than two-fifths (43.6%) indicated having more than 15 years of paddy farming experience, slightly more than one-third (35.5%) who had the farming experience of 0 to 5 years, and about one-fifth (20.9%) had the farming experience of 5 to 15 years.

Table 2.2: Demographic and socio-economic characteristics (n = 110)

Characteristic		Mean	Frequency	Percentage
Sex	Male		52	61.8
	Female		58	38.2
Age	18 – 35 years		40	36.4
	36 – 60 years	41.5	61	55.5
	> 60 years		9	8.2
Marital Status	Single		17	15.5
	Married		86	78.2
	Separated		1	0.9
	Widowed/widow		6	5.5
Education Level	No formal education		15	13.6
	Primary		89	80.9
	Secondary		6	5.5
Farm Size (in ha)	< 0.4		3	2.7
	0.4 – 1.6	2.4	66	60
	1.6 – 2.8		39	35.5
	> 2.8		2	1.8
Major source of income	Farming		110	100
Farming experience (in years)	0 – 5		39	35.5
	5 – 15		23	20.9
	>15		48	43.6

5.2 Determining the loan amount accessed

The study findings as presented in Table 2.3 provide a summary of the loan acquisition of the smallholder farmers in the study area during the cropping season. Table 2.3 shows that 41.8% of the paddy farmers received a loan of between Tshs. 2 000 000 and 5 000 000 whereas 31.8% received a loan between Tshs. 0 to 1 000 000 while 21.8% received between Tshs. 1 000 000/= to 2 000 000/= and 4.5% of the farmers received a loan amount greater than Tshs. 5 000 000 as observed in Table 3.

Table 3: Loan amount categories (n = 110)

Loan size limit	Frequency	Percentage
0 – 1 000 000	35	31.8
1 000 000 – 2 000 000	24	21.8
2 000 000 – 5 000 000	46	41.8
➢ 5 000 000	5	4.5

The study's results (Table 3) imply that only (4.5%) of the farmers' group had applied for a greater loan amount (>5 000 000/=) compared to others. In light of these results, it is observed that only a small number of farmers are eligible to apply for a larger loan amount. Weber and Musshoff (2012) and Baele *et al.* (2010) demonstrated that farmers who request bigger loan amounts have a reduced chance of receiving a loan, but once the credit is granted, larger loans are substantially less rationed in volume. Ruete (2015) reported that for the agriculture sector to grow, it needs access to capital, hence the transition from subsistence to commercial agriculture necessitates funds. Further, Rabson (2019) reported in the literature that if agriculture loans are raised then farmers will be able to improve their agricultural yields or output even more.

5.3 Activities on which the paddy farmers used the accessed loans

The study findings, as presented in Table 4 provide a summary of how farmers used the loan during the cropping season. According to Table 4, all (100%) of the smallholder farmers used the loan for paddy cultivation only. It has been shown that (94.5%) of the farmers used the amount of the loan applied in land preparation, while the remaining (5.5%) did not use the applied loan in land preparation activities due to the small amount of loan given to them, as shown in the quote below:

> *The amount of loan given is not enough to cover all expenses involved in paddy production. In other phases such as land preparation, I'm forced to prepare the farm using my own personal savings or other sources with the aim of using the loan applied in the latter phases' paddy production* (A 40-year-old male FGD participant, Mkindo, 27th August, 2021).

Nevertheless, the majority (98.2%) used the loan for tilling purposes, while very few (1.8%) did not. Again, 96.4% of the farmers reported having used the loan to purchase agricultural inputs as supported by the quote below:

> *This is among the very important stages in the use of loans. The aim of acquiring a loan is to support us to buy agriculture inputs that we could not afford on our own. Other paddy farming stages might be challenging but, we can strive to overcome them. However, the issue of purchasing inputs is a very hard challenge to overcome due to increased expenses such as transportation since some of the inputs are not available in our localities hence, requiring one to travel. Generally, the loans are required and are very helpful.* (a 56-year-old male FGD participant Mkindo 27th August 2021).

The findings of this study are in line with the findings of Ullah *et al.* (2020), who reported that enhancing smallholder farmers with loans is very useful to the group since it enables farmers to adopt improved agricultural technologies that result in the creation of opportunities for improvement in smallholder farmers and their farms through increased productivity.

The results (Table 4) show that almost all (98.2%) of the farmers used a certain amount of the applied loan for weeding, while a few (1.8%) did not. Also, the majority (94.5%) used the loan for harvesting while the remaining few (5.5%) did not. About 94.5% of the farmers used the loan for transportation, while the remaining (5.5%) did not. Finally, almost all (96.4%) of the farmers borrowed money to hire labour, while the remaining few (3.6%) did not.

Table 4: Activities for which paddy farmers used loans during the 2020/2021 cropping season

Activity	Yes	No	Rank
Paddy Production	110(100)	0	1
Land preparation	104(94.5)	6(5.5)	2
Tilling	108(98.2)	2(1.8)	3
Purchasing Inputs	106(96.4)	4(3.6)	4
Weeding	107(98.2)	3(1.8)	5
Harvesting	104(64.5)	6(5.5)	6
Transportation	104(94.5)	6(5.5)	7

Hire labour	106(96.4)	4(3.6)

NB: Numbers in brackets indicate percentage.

5.4 Challenges faced by smallholder paddy farmers in accessing bank loans

The first challenge that was common for the majority of the smallholder farmers who participated in the study was the high-interest rate from the respective financial institutions. The study's finding is in line with what has been reported in the literature (Konlambigue, 2015; Njuguna and Nairo, 2015; Mershal and Ayenew, 2018; Onwunali, 2018), where it is argued that the high-interest rate on loans is among the biggest challenges that smallholder farmers come across in accessing credit from banks because it has the potential to significantly reduce anticipated profits they are anticipated to make. The argument is supported by what was said by one of the key informants, that:

> *"Interest rates are a major problem facing smallholder farmers. The rate is too high for farmers. They literally gain very little or no profit. Sometimes, among them, they even fail to repay their loans in full, which results in one's collateral being sold. This kind of situation happens time to time. With high-interest rates, bank loans are of no use. They benefit a few but, it's a tragedy for many. "(*Key Informant, Dakawa, 10th September 2021).

Table 5 also shows that collateral demand was another major challenge whereby financial institutions demanded high-value collateral before they can grant a loan. The findings conform to what has been reported in literature (Nyairo, 2015; Isaga, 2018; Mbuga, 2019) that agribusiness entrepreneurs lack credit histories and accounting information that banks can use to determine their credit worthiness, thus the need for collateral. The demand for collateral in some ways puts off many smallholder farmers from applying for credit from banks. The statement below supports the above:

> "*Banks that give out loans require high-valued assets as collateral, and the amount of loan that is given to us does not even match the value of the collateral that you have put up. Later, if you are unable to repay your loan on time, they will either sell your asset at the price they desire to repay them your money, or they will sell your asset for a very low amount that you obtained as a loan. This is a problem for us; at the very least, the loan amount should correspond to the asset we put up as collateral" (*a 47 years male FGD participant, MKINDO, 26th August 2021).

Another challenge was the loan repayment period, which was a challenge for some of the paddy farmers. Generally, the repayment period is in the form of installments, which complicates payment as some farmers depend on the farm harvest to pay their loans. Failure to timely pay the loan results in an increase in its interest rate. The study's findings are in line with the findings of Lemesa and Gemechu (2016) and Mershal and Ayenew (2018), who reported that banks' lending terms and conditions, such as payback periods, hinders small farmers from obtaining finance. Therefore, probabilities in favour of accessing formal credit utilization diminish, implying that the payback period is advantageous for farmers if it coincides with the harvesting season or when the farmers receive revenue to repay their loan.

Another challenge was loan inadequacy, which was mentioned by some of the farmers, whereby the complaint concerning the amount of loan applied was too small to satisfy their paddy farming needs. Echoing this, one of the FGD participants said,

> *"The amount of loan given to us is quite small compared to the one we requested, for example, the total expense cost of cultivating to harvesting one acre within our locality is approximately nearly Tshs. 1 250 000/= but unluckily for my case I have applied for a bank loan of Tshs. 2 500 000/= but I was given Tshs. 584 000/= which is not enough to compensate for my farming expenses*
>
> (a 36 years male FGD participant, MKINDO 27TH August 2021).

The study's finding is in line with what has been reported in the literature by Duy *et al.* (2012) and Anang, *et al.* (2015) that financial institutions contract loans of small amounts to

farmers to support them, which does not allow them to invest enough in their farm activities to increase their productivity. Generally, the acquisition of larger loans makes it possible for farmers to apply adequate inputs required for production, hence raising productivity.

Table 5: Challenges facing smallholder farmers in accessing Bank loans

Challenge experienced	Frequency	Percentage
High-interest rate	60	37
Collateral demand	36	22.2
Loan repayment period	17	10.5
Loan inadequacy	39	24.1
Poor business plans	10	6.2

The last major challenge was a poor business plan. Smallholder farmers lacked a proper plan in their loan application hence, making them ineligible to acquire loans from banks. The observation is supported by the quote below:

> "*Among the things we consider in loan application procedures is business plans. Therefore, some of the smallholder farmers who come to our bank to acquire a loan have no proper business plan. Hence, it is very difficult for us to process a loan for that individual. Sometimes the majority of them are not even farmers. Due to mob pressure, they are pressured to apply for a loan which they end up using for non-farming activities such as betting, which is not beneficial for them. The result is us attempting or even selling the collateral at stake.*
> (Key Informant, CRDB, 11TH September 2021)

The study's findings are in line with what has been reported in the literature (Madafu, 2015; Dzadze *et al.*, 2012) that a lack of business plan is among the biggest difficulties that hinder most smallholder farmers in accessing bank loans and this is one of the key reasons for farm credit application rejection.

6.0 Conclusions and Recommendations

6.1 Conclusions

The study aimed at determining the relationship or association between smallholder paddy producers' farmers and their access to credit from banks. It is concluded that loan acquisition among smallholder farmers varies as a few of them can benefit from being granted a greater loan while the majority receive an average to the minimum loan amounts. It is further concluded that the provision of bank agricultural loan services to smallholder farmers in the Mvomero District was affected by several factors, with the high-interest rate factor being the most mentioned by the majority of the respondents, showing that it was the major problem that affected the smallholder farmers in accessing loans. Lastly, it is concluded that the majority of all of the smallholder farmers who participated in the study used the loan for paddy cultivation only.

6.2 Recommendations

Based on the study findings and the conclusions, the following are recommended:
Tanzania's government should create a conducive environment for commercial banks to be able to promote the development of the agriculture sector. Further, the expansion of state-owned financial institutions, particularly the Tanzania Agriculture Development Bank, should also be encouraged for them to be able to carry out agriculture-friendly policies. Financial institutions should lower interest rates, through the use of a participatory method involving income calendars to prepare repayment schedules, improve lending requirements to reflect the environment of smallholder farmers, and consider the amount of loans provided to smallholder farmers. And lastly, smallholder paddy farmers should learn how to prepare business plans to enable them to access bank loans to enhance their productivity and maximize their profit.

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