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The Dual Role of Microcredit: Extent, Drivers, and Livelihood Implications of Loan Diversion Among Smallholder Farmers in Morogoro Region, Tanzania

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Abstract
Microcredit serves as a vital financial instrument for promoting smallholder agricultural development across sub-Saharan Africa. However, the frequent diversion of loans from their intended agricultural purposes to non-farm uses, commonly referred to as microcredit diversion, raises critical questions about its effectiveness. This study investigates the extent, patterns, and behavioural drivers of microcredit diversion among smallholder farmers in the Morogoro Region of Tanzania. Using a cross-sectional, mixed-methods design, primary data were collected from 240 randomly selected smallholder farmers. Descriptive statistics, microcredit diversion metrics and thematic analysis of qualitative responses were employed to examine utilisation patterns and the motivations underlying loan diversion. The results indicate that while microcredit remains a crucial source of financing for farm investment, covering 49.72% of average farm expenditures, an average of 35.36% of borrowed funds was diverted to non-agricultural purposes, including household consumption, education, and healthcare. This dual role of microcredit highlights its function as both a productive investment and a consumption-smoothing mechanism within resource-constrained households. Through the Rational Choice Theory, our study interprets microcredit diversion as a rational strategy by smallholder farmers to optimise overall household welfare under scarcity and competing priorities. Thus, policy implications include the need to align microcredit disbursement with agricultural cycles, integrate financial literacy and extension services, and strengthen monitoring mechanisms to minimise diversion and maximise agricultural productivity. These findings contribute to the literature on rural finance and provide actionable insights for designing microcredit programmes that better support agricultural development in Tanzania.

Introduction
Agriculture remains the mainstay of Tanzania's economy, contributing about 26.2% to the national GDP and employing more than two-thirds of the labour force (URT, 2023a). The sector sustains the livelihoods of rural households, provides raw materials for industry, and contributes substantially to food security (Mwonge & Naho, 2024). However, despite its pivotal role, smallholder farmers, who

dominate agricultural production, continue to face persistent constraints, including inadequate access to modern inputs, poor infrastructure, and limited access to formal financial services (URT, 2021; Mwonge & Naho, 2021, 2022).

In response to these challenges, microcredit has emerged as a critical policy and development tool that bridges financing gaps by extending small-scale loans to underserved populations without requiring traditional collateral (Tundui & Tundui, 2020). Yet, empirical evidence reveals that the expected benefits of microcredit are not always realised in the agricultural sector. One major reason for this shortfall is microcredit diversion, the practice of using part or all of a loan for purposes other than those intended initially (Tundui & Tundui, 2024). While diversion may serve as a coping mechanism for liquidity-constrained households, it undermines agricultural productivity by reducing investment in inputs and in the adoption of technology (Zeller & Sharma, 2000; Hussain & Thapa, 2016). In rural Tanzania, where financial markets are segmented and informal lending dominates, such diversion poses both economic and institutional challenges (Mwonge et al., 2025a). Understanding this phenomenon is thus crucial for designing effective, context-sensitive interventions that strengthen the developmental role of microcredit.

The evolution of Tanzania's financial system since the 1990s liberalisation period has led to a remarkable expansion of the microfinance sector. Institutions such as the National Microfinance Bank (NMB), CRDB Bank, Savings and Credit Cooperative Societies (SACCOS), and Village Community Banks (VICOBA) now provide vital financial services to rural communities (URT, 2017). The Microfinance Act of 2018 further established a tiered regulatory framework to enhance access and oversight under the Bank of Tanzania (BoT, 2023). Despite these reforms, agriculture continues to receive less than 10% of total credit disbursed (BoT, 2023). High interest rates, stringent collateral requirements, and seasonally misaligned repayment schedules remain critical constraints for smallholder borrowers (Mwonge & Naho, 2021).

Within this financial and institutional context, the Morogoro Region provides a particularly relevant and policy-significant study area. Although the region is among Tanzania's top four food-producing zones, contributing substantially to the national supply of maize and paddy (URT, 2023b), it continues to experience wide yield gaps resulting from underinvestment in agricultural inputs and irrigation infrastructure (URT, 2022). At the same time, Morogoro hosts a vibrant microfinance network, yet anecdotal evidence suggests that many smallholder farmers divert loans to non-farm activities, household consumption, or social obligations. What remains empirically unclear, however, is the magnitude of this diversion and the socio-economic, institutional, and behavioural factors driving it. These knowledge gaps hinder the effective design of rural credit programmes aimed at promoting agricultural productivity.

Addressing these issues is particularly timely given the implementation of the Third National Financial Inclusion Framework (NFIF3) for 2023–2028, which emphasises flexibility, collaboration, and evidence-based policymaking to enhance inclusive and sustainable financial access (BoT, 2023). By providing empirical evidence on the patterns and determinants of microcredit diversion, this study offers critical insights for refining NFIF3 strategies and promoting financial systems that better align with the realities of smallholder farmers.

Conceptually, microcredit diversion refers to the use of borrowed funds for purposes other than those stated in loan agreements. While some level of diversion may be inevitable in multi-purpose household economies, excessive diversion reduces the intended productivity-enhancing effects of credit (Enimu et al., 2017; Darfor et al., 2021; Mwonge et al., 2025b). Among smallholder farmers, diversion manifests in three main forms: (i) complete diversion, where the entire loan is used for non-

agricultural activities; (ii) partial diversion, where only a portion supports farm production while the rest meets household or non-farm needs; and (iii) intended use, where the whole loan is invested in agriculture. Accordingly, this study investigates both the extent and determinants of microcredit diversion among smallholder farmers in the Morogoro Region. By analysing how and why farmers reallocate agricultural loans, this analysis contributes to a broader understanding of rural financial behaviour. It provides actionable evidence for strengthening the design, monitoring, and productive utilisation of microcredit in Tanzania's agricultural sector.

Theoretical lens: rational choice theory and microcredit diversion

The Rational Choice Theory (RCT), developed by Cornish and Clarke (1986), underpins this study. Within the context of this study, an RCT provides an essential behavioural framework for understanding how smallholder farmers allocate borrowed funds between agricultural and non-agricultural uses (Zey, 1998). Originating from classical economic thought, RCT posits that individuals act rationally by weighing the costs and benefits of available alternatives to maximise their utility, given resource constraints and available information (Becker, 1976; Coleman, 1990). In the context of microcredit, smallholder farmers face competing priorities —such as food security, education, health, and production needs —within limited financial and temporal budgets. Consequently, their decision to utilise microcredit for farming or to divert it to other uses reflects a rational response to perceived risks and returns rather than a mere act of misuse. From this perspective, microcredit diversion arises when the perceived marginal utility of allocating funds to non-farm or household consumption exceeds that of agricultural investment. Factors such as delayed agricultural returns, uncertainty due to weather shocks, or pressing social obligations may influence borrowers to reallocate credit toward immediate consumption needs (Binswanger & Rosenzweig, 1986). Thus, diversion can be interpreted as an economically rational behaviour within contexts characterised by income volatility, imperfect credit markets, and inadequate social protection systems.

Methodology

Study area

This study was conducted in the Morogoro Region of Tanzania, a major agricultural hub that provides a policy-relevant context for examining the utilisation of microcredit by smallholder farmers. The region is among Tanzania's top food-producing zones, contributing substantially to the national supply of maize and paddy (URT, 2023b). Agriculture is the main livelihood activity, positioning Morogoro as an important centre for agricultural investment and productivity-enhancement initiatives. Morogoro has diverse agro-ecological and climatic conditions, with average annual temperatures ranging from 18°C to 30°C and a moderate mean of approximately 25°C throughout the year (URT, 2022). The warm season generally occurs from July to September. Rainfall follows a bimodal pattern, with long rains between March and May and short rains from November to January. Average annual rainfall ranges between 600 mm and 1,800 mm (URT, 2022), providing suitable conditions for rain-fed agriculture. Thus, the combination of favourable agro-climatic conditions, irrigation potential, and active smallholder farming makes Morogoro an ideal setting for this investigation on microcredit diversion.

Research approach

The study adopted a mixed-methods approach, integrating quantitative survey data with qualitative insights. Quantitative data were used to measure the extent of microcredit diversion, while qualitative information was triangulated to interpret patterns and support statistical findings. This integration provided a more comprehensive understanding of the research problem.

Sampling and data collection methods

Using Cochran's (1977) formula, 240 smallholder farmers were selected for the study. A multi-stage sampling technique was employed to ensure representativeness across the Morogoro Region. In the first stage, two districts—Mvomero and Morogoro Rural—were purposively selected based on their high levels of agricultural activity and microcredit uptake. In the second stage, the selected districts were stratified into villages, and sixteen villages were randomly chosen to form the sampling frame. Finally, in the third stage, stratified random sampling was applied within each selected village to capture variations among farmer groups (e.g., gender, farm size, and microcredit access). Within each stratum, individual farmers were randomly selected using simple random sampling from lists obtained from local agricultural extension offices and microfinance institutions. This stratified random sampling approach ensured that different subgroups of smallholder farmers were adequately represented, thereby enhancing the accuracy and generalisability of the findings while reducing sampling bias.

Primary data were collected using a combination of structured questionnaires and semi-structured interviews. The questionnaire was designed to capture detailed information on socio-economic characteristics, access to microcredit, and utilisation patterns. Interviews were conducted to supplement quantitative data with qualitative insights into farmers' decision-making processes and constraints related to microcredit use. However, data validation involved several measures: (i) pre-testing the questionnaire to ensure clarity and relevance; (ii) cross-checking responses during data entry to identify inconsistencies; and (iii) conducting logical and range checks in SPSS to detect and correct data entry errors before analysis.

Measurement of microcredit diversion and analytical framework

The descriptive approach was essential in identifying the extent of microcredit use across the three usage categories. This level of detail helped assess whether microcredit contributed directly to input acquisition and enhanced farm productivity, as theorised by Carter's (1989) production model. Identifying these patterns allowed the study to quantify the extent of microcredit diversion, a challenge frequently highlighted in the rural finance literature (Darfor *et al*., 2021).

To quantify microcredit diversion, the study adopted the framework of Cohen (1968, 1970) as cited by Hussain and Thapa (2016), distinguishing between financial substitution and real expenditure substitution. Financial substitution occurs when smallholder farmers treat agricultural credit and other loans as pooled resources, irrespective of the intended purpose, agricultural activities in this case. In contrast, more pertinent to this study, real expenditure substitution happens when smallholder farmers divert borrowed funds, microcredit, to non-farming purposes such as education, healthcare, debt repayment, food, and social obligations.

Three key indicators were used to capture the extent of microcredit diversion and its impact on agricultural investment:

$$\mathrm{CF} = \frac{C_f}{C_t} \times 100 \qquad (1)$$

where:
CF = Microcredit diversion ratio (%)
C_f = Annual amount of microcredit used for non-agricultural purposes
C_t = Annual average amount of microcredit obtained from MFIs

This indicator provided a clear measure of how much of the borrowed funds was diverted from agricultural production, offering insight into the behavioural inefficiencies in microcredit utilisation.

In addition to the CF ratio, the study estimated the microcredit margin of farm investment (C_m), which is the portion of microcredit actually available for agricultural purposes after excluding the fungible microcredit. This was estimated as:

$$C_m = (C_t - C_f) \quad (2)$$

where:

C_m = Annual microcredit margin of farm investment

Thus, the estimated value of C_m was used to compute the microcredit dependency ratio (CDR) to assess the extent to which farm investments depended on microcredit. This was calculated using:

$$\text{CDR} = \frac{C_m}{I_f} \times 100 \quad (3)$$

where:
CDR = Microredit dependency ratio (%)
I_f = Annual average investment in farm activities

Hence, these three indicators (CF, Cm, and CDR) formed a critical part of the analysis, allowing the study to evaluate the utilisation patterns and the effectiveness and dependency of farm investment on microcredit.

Thus, integrating descriptive statistics with microcredit diversion metrics and qualitative themes, this study provides a nuanced understanding of microcredit utilisation patterns among smallholder farmers. This mixed-methods approach ensures that quantitative trends and their behavioural motivations are captured, allowing for better-informed policy recommendations to reduce microcredit diversion and improve agricultural investment outcomes.

Results and discussion

The study sought to determine microcredit use patterns among smallholder farmers in the Morogoro Region of Tanzania to establish a foundational understanding of how these financial services are utilised at the grassroots level. Thus, identifying the specific ways in which microcredit is used, whether exclusively for agricultural purposes, mixed uses, both farm and off-farm activities, or diverted to non-agricultural activities like household consumption, school fees, healthcare, or income-generating activities outside farming (biashara), was essential for accurately analysing its effect on agricultural productivity. Moreover, understanding these use patterns was critical for identifying behavioural and institutional factors, such as household priorities, loan conditions, repayment schedules, and extension support that influence microcredit utilisation decisions. In fact, this would contribute to improving rural finance policies and to the design of context-sensitive microcredit programmes that better align with the needs and realities of smallholder farmers.

Descriptive statistics

The study examined the patterns of microcredit utilisation among smallholder farming households to provide an empirical foundation for assessing the effectiveness and developmental relevance of microcredit interventions. By identifying and categorising the purposes for which microcredit is used, the analysis revealed differences in resource allocation decisions between male and female farmers. As shown in Table 1, about 47.1% of farmers used microcredit exclusively for agricultural activities, 28.7% for non-agricultural purposes, and 24.2% for both. Disaggregating by sex, 29.2% of male farmers and 17.9% of female farmers used microcredit primarily for agricultural activities. Similarly, 15.8% of

males and 12.9% of females used microcredit for non-agricultural purposes, while 13.3% of males and 10.8% of females allocated microcredit for both agricultural and non-agricultural needs. Overall, 52.9% of respondents, *slightly more men than women*, diverted microcredit partially or entirely from its intended agricultural purpose.

Table 1: Microcredit utilisation patterns by Sex of Smallholder Farmers

Microcredit usage category	Male farmers (n = 140)	Female farmers (n = 100)	Total farmers (N = 240)
Agricultural activities	70(29.2%)	43(17.9%)	113(47.1%)
Non-agricultural activities	38(15.8%)	31(12.9%)	69(28.7%)
Both purposes	32(13.3%)	26(10.8%)	58(24.2%)
Total	**140**(58.3%)	**100(41.7%)**	**240(100%)**

Source: Field study, 2024

From the perspective of Rational Choice Theory (RCT), these patterns reflect deliberate, utility-maximising decisions made under resource constraints. RCT posits that individuals weigh the costs and benefits of alternative actions to achieve the highest utility given their preferences and limitations (Becker, 1976). In this context, smallholder farmers face multiple competing demands—household consumption, education, health emergencies, and social obligations—alongside agricultural investment needs. Consequently, the diversion of microcredit from agricultural purposes can be interpreted as a rational survival strategy aimed at optimising household welfare rather than strict adherence to the intended purpose of the loan.

Indeed, the empirical evidence suggests a notable deviation between the intended objectives of microcredit disbursement and its actual application on the ground. The phenomenon observed in this study aligns with the existing literature, which documents similar patterns across various rural contexts. For instance, Tundui and Tundui (2018) noted that failure to control microcredit diversion risks adequately misrepresents the impact of microcredit on agricultural outcomes. This concern is echoed by Ganle *et al*. (2015), and Darfor *et al*. (2021), who collectively emphasise that in many low-income rural contexts, microcredit is rarely perceived solely as capital for productive investment. Instead, it is frequently treated as a flexible financial instrument to address a diverse range of livelihood challenges, including consumption-smoothing, emergency health expenditures, education costs, and social obligations.

Moreover, cross-country evidence further reinforces this point. Hussain and Thapa (2016), in their study in Pakistan, found that microcredit was commonly diverted to unintended uses such as debt repayment, household consumption, and unforeseen expenses. Similarly, Chandio *et al*. (2018) further show that external shocks and financial pressures frequently necessitate reallocating borrowed funds, reinforcing that microcredit utilisation decisions are embedded in broader household survival strategies. Thus, the observed diversion of microcredit should not be interpreted merely as misappropriation, but rather as an adaptive financial behaviour in resource-constrained environments.

From a policy perspective, these highlight that effective microcredit design must account for both gendered financial realities and household-level trade-offs. Programmes that impose rigid conditions on credit use may fail to achieve their intended objectives, especially when women's financial responsibilities extend beyond production. A more integrated approach, linking microcredit provision with financial literacy, gender-sensitive agricultural extension, and social protection mechanisms, would better address the livelihood complexities of rural households. Such interventions

would not only enhance the productive utilisation of microcredit but also promote equitable and sustainable development outcomes.

Microcredit diversion metrics

To complement the descriptive analysis, the study employed CF metrics to assess the extent of real expenditure substitution. According to Cohen (1968, 1970), microcredit diversion occurs as financial substitution or real expenditure substitution, with the latter involving the use of agricultural credit for non-agricultural purposes. In this study, smallholder farmers received an average loan amount of TZS 500,000, of which TZS 176,822 was diverted to non-agricultural uses (see Table 2). The CF ratio was then calculated using the formula specified in Equation (1).

$$\text{CF} = \left(\frac{176{,}822}{500{,}000}\right) \times 100 = 35.36\%$$

This indicates that, on average, 35.36% of the microcredit was diverted to non-agricultural purposes, reflecting household pressures to meet consumption and social needs. The remaining 64.64% of the borrowed funds was retained for farm use, quantified as the credit margin of farm investment (Cm) as specified in Equation 2.

$$C_m = 500{,}000 - 176{,}822 = 323{,}178$$

So, TZS 323,178 represents the average amount of microcredit available for agricultural investment per smallholder farmer. To understand the relative importance of microcredit in total farm investment, the researcher calculated the microcredit dependency ratio (CDR), using the formular specified in Equation 3, whereby I_f = TZS 650,000 (average annual farm investment).

$$\text{CDR} = \left(\frac{323{,}178}{650{,}000}\right) \times 100 = 49.72\%$$

This indicates that, on average, 49.72% of farm investment among credit recipients came from microcredit, underscoring its critical role in supporting agricultural production. Table 2 presents the summary of the study results.

Table 2: CF and microcredit margin of investment

Category	Average values/HH (TZS)					CDR (%)
	C_t	C_f	CF (%)	C_m	I_f	
Smallholder farmers	500,000	176,822	35.36	323,178(64.64)[a]	650,000	49.72

Note: The figure in brackets shows the 'microcredit margin of investment for agriculture' in percentage. In the context of this study, it was revealed that smallholder farmers spend 35.36% of borrowed funds on non-agricultural purposes; thus, the remaining 64.64% of the amount were available for agricultural investment.

Source: Field Study (2024)

Through the lens of Rational Choice Theory, the CF and CDR results, as presented in Table 2 indicate that farmers' allocation of microcredit between agricultural and non-agricultural uses reflects deliberate optimisation under scarcity and competing priorities. Although microcredit constitutes a vital input, financing nearly half of farm investment, over one-third is diverted to immediate household needs. This dual use underscores the blurred financial boundaries in smallholder households, where loans must simultaneously satisfy productive and consumptive demands. Such behaviour aligns with Roberts et al. (2017) and Hussain and Thapa (2016), who contend that

microcredit diversion is an adaptive response to systemic vulnerabilities, including irregular income, health shocks, and educational expenditures. Viewed through RCT, microcredit diversion is a rational strategy to maximise overall household welfare rather than financial indiscipline. In the context of this study, integrating descriptive statistics with CF/CDR metrics and RCT offers a coherent explanation for microcredit diversion. Smallholder farmers' choices demonstrate calculated trade-offs under resource constraints, suggesting that microcredit programmes must account for household-level rational behaviour to achieve intended agricultural productivity outcomes effectively.

Role of household headship in microcredit decisions

The study examined the influence of household headship on the utilisation patterns of microcredit among smallholder farmers in Morogoro Region. Results revealed that 59.6% of respondents acknowledged that household headship significantly shapes decisions regarding how borrowed funds are allocated and utilised. This finding underscores the centrality of intra-household power relations in determining whether microcredit is directed towards productive agricultural investments or diverted to other uses.

During data collection, one female attested that:

> "*… as the household head, I had to prioritise paying school fees and hospital bills before investing in fertilisers.*" **(FGD)**

This testimony illustrates how gender roles, caregiving responsibilities, and socio-cultural expectations shape household financial decisions, influencing the extent to which microcredit serves its intended agricultural purpose. The findings therefore suggest that household headship pressures is the critical determinants of microcredit diversion among smallholder farmers. Addressing these underlying social dynamics through gender-sensitive credit design and financial education could enhance the effective utilisation of microcredit for agricultural productivity.

Policy and practical implications

The findings of this study underscore several critical policy and practical implications for enhancing the effectiveness of microcredit as a tool for agricultural and rural development. The high degree of diversion, where 35.36% of microcredit was diverted to non-agricultural uses, reveals the structural and behavioural realities shaping rural financial decision-making in Tanzania. These realities must be acknowledged in the formulation of inclusive and context-sensitive rural finance policies.

Policy implications

The evidence suggests that smallholder farmers view microcredit not merely as a production input but as a flexible financial instrument for managing multifaceted livelihood needs. Policymakers and financial institutions should therefore move beyond rigid credit conditionalities that prescribe exclusive agricultural use. Instead, a livelihood-based credit design should be adopted, recognising that household welfare and agricultural investment are interlinked. For example, allowing borrowers to allocate a small proportion of loans to essential household expenses while maintaining monitoring systems for the agricultural component could improve repayment rates and strengthen long-term client relationships.

A second policy priority concerns the timing of loan disbursement. Many farmers reported diverting funds to non-farm uses due to delays or mis-timed microcredit disbursements, often after the planting season had ended. Financial institutions, in collaboration with agricultural officers, should ensure that microcredit delivery is synchronised with agricultural calendars. Timely access to microcredit enables farmers to purchase inputs when needed, thereby minimising the temptation to reallocate funds toward consumption or other non-productive needs.

Practical implications

For practitioners, including microfinance managers, agricultural officers, and development partners, the results offer several operational lessons.

First, microcredit diversion should not be interpreted solely as misuse or moral hazard, but as an indicator of household vulnerability and institutional misalignment. Understanding diversion as a rational coping strategy in resource-constrained environments can help practitioners design supportive rather than coercive interventions. For instance, combining credit provision with savings products and insurance schemes can cushion borrowers against shocks that typically lead to loan diversion.

Second, bundling microcredit with technical and financial training enhances both loan performance and productivity outcomes. Practitioners should institutionalise training sessions that combine agronomic best practices with financial management principles, ensuring that farmers have the knowledge and capacity to allocate resources effectively. Integrating agricultural extension services with financial delivery models can further strengthen the productive impact of credit.

Third, continuous stakeholder dialogue among farmers, microfinance institutions (MFIs), government agencies, and non-governmental organisations (NGOs) is vital for responsive policy reform. Regular forums for feedback and consultation can help identify emerging challenges, harmonise programme objectives, and ensure that microcredit interventions reflect the socio-economic realities of smallholder farmers.

Lastly, practitioners should explore innovative lending models, such as group-based lending, in-kind credit (e.g., input vouchers), or blended finance partnerships, that directly link financial resources to agricultural production activities. These models reduce diversion risks while improving microcredit accessibility and repayment sustainability.

Conclusion

This study examined the extent of microcredit diversion among smallholder farmers in the Morogoro Region of Tanzania, providing empirical evidence on how borrowed funds are diverted towards non-agricultural uses. The results revealed that while microcredit remains a critical financial resource for smallholder farmers, accounting for nearly half of total farm investment, approximately 35.36% of the borrowed funds were diverted to non-agricultural activities such as household consumption, education, and healthcare. This finding underscores the dual role of microcredit as both a productive and a consumption-smoothing instrument within rural livelihoods. Rather than being viewed as financial indiscipline, this pattern reflects a rational response to structural constraints, seasonal income fluctuations, and inadequate social safety nets. The study concludes that microcredit diversion has significant implications for agricultural productivity and the broader effectiveness of rural finance interventions. Addressing this challenge requires policies that recognise the interdependence between household welfare and farm investment decisions. Specifically, integrating financial literacy training, aligning credit disbursements with agricultural cycles, and strengthening monitoring mechanisms can enhance the productive use of microcredit. Overall, the findings reaffirm that sustainable agricultural financing depends not only on expanding access to microcredit but also on ensuring its effective and context-appropriate utilisation.

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