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THE SIGNIFICANCE OF FINANCIAL LITERACY FOR MICROCREDIT ACCESS IN RURAL TANZANIA: A FINSCOPE HOUSEHOLD SURVEY-BASED ASSESSMENT

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Abstract: Microcredit is essential for providing small loans to rural households in Tanzania, but financial inclusion problems and the structure of the rural credit market make it difficult for these households to access microcredit. This study examines the influence of financial literacy on microcredit accessibility in rural Tanzania using a large dataset from the Finscope household survey. A binary logit estimation technique and descriptive analysis were employed to determine the effects of financial literacy on the credit accessing decisions of rural households. The findings reveal that financial literacy has a negative and significant impact on microcredit accessibility, while education level has a positive and significant influence. The study recommends establishing financial literacy programs in rural areas to educate citizens on the benefits and proper uses of borrowed money. Policymakers and microcredit institutions can use the results to improve microcredit accessibility in rural Tanzania. The study's originality lies in the use of actual surveyed data from Tanzanians in all regions, with robust results that account for different household categories and control variables.

Keywords: financial literacy, microcredit, rural finance, accessibility, Tanzania, Finscope household survey

Introduction

Since gaining her independence in 1961, Tanzania has experienced an increase in population. At the end of 2020, estimates made by the World Bank suggested that 64.77% of Tanzanians were living in rural areas (World Bank, 2020). The World Bank data also estimated Tanzania's national poverty as of 2021 to be 27% (World Bank, 2022). With more than 60% of individuals living in rural areas, it is fair to say that most poor citizens come from rural areas. When stricken with poverty, saving becomes hard as no leftover money exists (Yuda, 2016). In such circumstances, there are always limited options to obtain financial products to cope with the economic shock. Hence, access to microcredit is vital to transforming the livelihood of the rural poor (Green, 2014).

Access to microcredit and financial inclusion go hand in hand. Government organs in Tanzania have promoted financial inclusion, especially the central bank of Tanzania. Financial inclusion in the economic development agenda, is considered a priority factor that will foster industrialization strategies and enterprise transformation by 2025. According to Intermedia's Financial Inclusion Insight (2018), 56% of Tanzanians are financially included, meaning they access and use various financial services. Moreover, the percentage of informal

services usage has narrowed from 29% to 7% in the last decade. It is also pointed out by Demirgüç-Kunt *et al.* (2018) that more than 75% of adults in Africa use financial services, and they have literacy on how to use these services. The only question is at what rate those figures touch the individuals residing in rural areas. Are 75% of rural households accessing financial services such as microcredits?

Microcredits will remain critical to rural households over a long period as they provide small loans to the needy, making it an essential aspect of rural finance. Due to the rural credit market's structure, rural households often have trouble accessing microcredit. Rural folks face two challenges when borrowing from commercial banks. First, they lack collateral, and second, microcredits are too costly for banks to provide. Microcredit access to rural poor becomes a strategic agenda in the battle against poverty (Khoi *et al.*, 2013). Even though access to microcredit services can be viewed as a strategic agenda, problems arise when individuals cannot use the microcredit service in its specialized and scattered complexity due to a lack of financial literacy education that can expand their understanding of credit and finance matters (Ndungu, 2013).

A person can be said to be financially literate if such person understands financial concepts and can make sound financial decisions that benefit an individual's economic well-being in all aspects (Remund, 2010). Financial literacy (FL) is a mix of awareness, information, skill, attitude, and conduct required to make wise financial decisions and ultimately attain individual economic well-being (Srithirath & Sukcharoensin, 2022).

Statement of the problem

Despite the strategic importance of microcredits in the fight against poverty, their accessibility amongst rural households is questionable (Khoi *et al.*, 2013). Financial literacy can be considered a complimenting factor in rural household microcredit accessibility. It might be regarded as a plausible argument to state that when rural households are equipped with financial knowledge, there is a possibility that they can make better financial decisions. Such decisions might include taking a loan and putting it into effective use to enhance their economic conditions. There is a chance of improving sustainable economic living if a focus is placed on rural households' financial literacy and credit access. However, in real world what looks necessary and critical may not provide the intended outcomes. Financial literacy might lead a household to opt not to seek micro credit since they have enough knowledge to handle and control their finances. Apart from that financial literacy will be of interest to scholars worldwide owing to variations in culture, individualism, time, and experience. Financially literate families in Japan or Argentina may see micro credit differently from those in Tanzania or Kuwait, therefore discrepancies are likely and additional study of its influence on microcredit accessibility is desired.

Some scholars, including Li *et al.* (2011) in China, Khoa (2018) in Vietnam and Abasilim *et al.*, (2019) in Nigeria tried to establish a connection between credit accessibility and financial literacy; however as pointed out before, they were conducted in ecosystems that were different from that of Tanzania, restricting their application. The studies conducted in Tanzania, such as Isaga (2018), limit itself to loan accessibility to farmers only. On top of that, it only concentrated on loans from banks and left other microfinance institutions apart, hence failing to focus directly on rural household financial literacy and microloan accessibility. Srithirath & Sukcharoensin (2022) dismissed the notion that consumers with fluid credit would likewise be financially literate as they failed to establish a significant relationship between credit status and financial literacy. Lubanga (2016) showed a significant association between having a good understanding of finances and having access to credit.

Different ecosystems and conclusions reached on the link between financial literacy and credit accessibility present a dilemma that must be pursued by the researcher's nature and circumstances, as no conclusions can be carried over and regarded as universal outcomes. Another problem stems from the fact that financial

literacy is a qualitative characteristic whose measurement will always be biased. Myriad ways of measuring financial literacy might always lead to different results. With that inconclusive situation, as well as limited research in Tanzania covering rural household financial literacy and microcredit accessibility; we strongly argue that there is a gap that needs filling and this study marched forth to fill that gap by assessing the influence of financial literacy on microcredit accessibility of rural households in Singida, Mtwara and Rukwa regions. These regions were selected as they were stated to be the most financially excluded areas in Tanzania (Finscope, 2017). While filling the literature gap in household finance, the primary objective of this research was to determine the Influence of Financial Literacy on Micro-Credit Accessibility among Tanzanian Rural Households.

Literature Review self-efficacy theory

This study is rooted in self-efficacy theory. The theory was put forth by Albert bandura in 1977, and it posits that the strength of belief in one's capacity is a good predictor of motivational behaviour and action. Self-efficacy beliefs can be enhanced

through performance mastery, modelling, reinterpretation of physiological symptoms, and social persuasion (Ritter & Lorig, 2014). Enhanced self-efficacy improves behaviour, motivation, thinking patterns, and emotional well-being. Selfefficacy is task-specific, unlike self-esteem or self-confidence, which may be more global (Ritter & Lorig, 2014). Self-efficacy combines cognitive, social, and emotional capacities. From a financial literacy perspective, this idea relates to how people manage their capacity to grasp dynamic and fluctuating financial items/products (Ghasarma *et al.*, 2017). From this theoretical perspective, we can argue that a person with financial self-efficacy is more likely to comprehend microcredit and use it properly. From that viewpoint, we sought to examine the influence of financial literacy on microcredit accessibility amongst rural households in Tanzania.

Empirical Review

Financial literacy is an issue in which there has been a tremendous increase in its attention among policymakers and other stakeholders at large. Henceforth, many relevant studies have been done to reveal the effect of financial literacy on credit accessibility (Wachira, 2015; Htew, 2019; Jonker & Kosse, 2020; Michelson, 2020). Financial literacy (FL) is a mix of awareness, information, skill, attitude, and conduct required to make wise financial decisions and ultimately attain individual financial well-being (Srithirath & Sukcharoensin, 2022). Financial literacy is pointed to be one of the economic drivers in relation to financial inclusion (Lotto, 2020). Li *et al*. (2011) concluded level of education, among other factors, significantly influenced rural China households' access to microcredit. Khoa (2018) established that education level, amongst other factors, influenced access to formal credit in the rural region of Vinh province. Abasilim *et al.* (2019) revealed that lack of knowledge on credit availability worked against credit accessibility among garri processers in Epe, Nigeria. Hasan *et al.* (2021) concluded that financial literacy positively and significantly affected rural Bangladeshis' access to financial services. Michelson *et al*. (2020) studied households in Australia and determined that financial literacy had a significant negative effect on credit card debt. Herispon (2019) Determined that financial literacy had a negative effect on the debt behaviour of the household unit in Pekanbaru City, Riau, Indonesia. Wachira *et al.* (2015) conducted a regression analysis whose findings revealed that financial literacy in Kenya had no significant effect on household access to financial services. Thus, from the above empirical reviews, the tested hypothesis is:

H_1: Financial literacy has a positive influence on microcredit accessibility in rural households

Methodology Data source

Data for this study were extracted from the Finscope Survey Tanzania in collaboration with the National Bureau of Statistics. The Finscope Survey, previously conducted in 2006, 2009, 2013 and 2017, highlighted the updated information on the use of financial services and accessibility, borrowing, saving, budgeting, spending, and financial literacy among households across the country. Finscope survey of 2017 collected data from 27,864,302 individuals in 9,459 households from 31 regions, 171 districts and 958 wards. For this study, the Finscope survey in 2017/2018 was employed to investigate the effect of financial literacy on loan acquiring decisions among rural households in Tanzania. In this regard, a sample of 1,649 households from rural areas was obtained using the key independent variables information, making a total of 2,518,735 respondents used in this study. Despite that, most of the rural areas have been reported to be less financially included (Ndanshau & Njau, 2021); this study took the rural areas in Singida, Mtwara and Rukwa regions that are mostly stated to be financially excluded and informal financial inclusion areas in Tanzania (Finscope, 2017).

Measurement of variables

Financial literacy is a multidimensional topic. It has been termed as an influencing factor when it comes to credit accessibility by a variety of researchers. In all the research, there is one area of complication, and that is how to measure financial literacy. Ouachani *et al.*, (2020) argue that Objective financial literacy assessments evaluate respondents' financial knowledge and abilities. These measurements rely on financial literacy definition and financial decisions under consideration. In that regard, we considered in this study the assessment of financial literacy based on households' knowledge of money matters, ability to budget, ability to seek financial advice, involvement in household decisions to manage money, ability to keep track of income and expenses and the level of numeracy skills possessed.

Model specification

To evaluate the levels of financial literacy possessed by rural families and its influence on microcredit accessibility the binary logit model was employed. This approach was opted since the dependent variable could be broken down into two distinct groups of rural households that is those who have access to microcredit and those who don't. The binary result represented the microcredit users and nonmicrocredit users. The generic logit model was mathematically stated as follows:

$$Y_{\ln} = \ln\left(\frac{P_i}{1-P_i}\right) = \beta 0 + \text{FLij}\beta 1 + \text{Xij}\beta 2 + \varepsilon ij \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. \ldots..(1)$$

Where $Y_{\ln}$ is a binary dependent variable where 1 = if the i^{th} respondent in the j^{th} household decides to acquire loan from a microfinance and 0 otherwise, $FLij$ is financial literacy (FL) and εij is the error term. In addition, Xij factors were involved in the model to control for the i^{th} respondents' characteristics at j^{th} household. These factors were considered because they may affect the loan acquiring decision of households. These were outlined to be education level, income, age, gender and marital status. Table 1 shows the variables that explain the influence of financial literacy on microcredit accessibility, as well as the expected sign of each variable as employed in the equation above.

Table 1: Variable definitions

Variable	Definitions	Expected sign
Rural	= 1 if respondent lives in rural; 0 otherwise	
Financial Literacy		
Knowledge of money matters	= 1 if have knowledge; 0 otherwise	+
Ability to seek financial advice	= 1 if is seek; 0 otherwise	+

Involvement in household decisions to manage money	= 1 if is involved; 0 otherwise	+
Ability to keep track of income and expenses	= 1 if have the ability; 0 otherwise	+
Ability to budget	= 1 if have the ability; 0 otherwise	+
Numeracy skills	= 1 if have skills; 0 otherwise	+
Household's characteristics		
Education level No education		
	=1 if respondents have never attended school	+
Primary education	=1 if respondents have primary education	+
Secondary education	=1 if respondents have secondary education	+
University/college education	=1 if respondents have a college education	+
Income	Log of net income of the households	+
Age	Household's age in years	+
Gender	= 1 if is a male; 0 if is a female	+
Marital status	= 1 if a respondent is married; 0 otherwise	+

Source: Finscope survey Tanzania, 2017

Results and Discussion Descriptive Results

Table 2 displays the descriptive statistics for individuals as categorized in the whole study sample, individuals from households in rural and urban. In terms of the entire sample, 78% were found to be living in rural areas from three selected regions. In terms of financial literacy, 77% are reported to have no knowledge of money matters. This is similar even to those living in rural and urban. The results to the rural households also show that 76%, 89% and 73% of the rural respondents had the ability to seek financial advice, involvement in financial decisions and budget skills, respectively. Numeric skills were found to be a problem for individuals in rural areas compared to those in urban. For instance, in subtraction skills, 50% in rural have no skills compared to 38% in urban, addition skills 35% in rural and 22% in urban, multiplication skills were 74% in rural and 61% in urban and in division skills were

66% and 53% in rural and urban respectively. The use of financial institution services was found to be a very serious problem even in urban areas, and the results show over 90% in both categories did not use either banks or non-bank institutions.

Table 2: Descriptive statistics

Education level

No formal education	19	20	14
Some primary	16	17	15

Primary completed	52	64	45
Post primary technical training	0	0	2
Some secondary	4	3	11

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Variables	All	Rural	Urban
	n=2,518,736	**n**=1,954,000 (In percentages)	**n**=564,736
Rural	78	100	0
Financial Literacy			
Knowledge of money matters			
Have	23	23	22
Have no	77	77	78
Ability to seek financial advice			
Seek	75	76	71
Not seek	25	24	29
Involvement in household decision to manage money	87	89	81
Respondent is involved			
Respondent not involved	13	11	19
Ability to keep track of income and expenses			
Yes	68	67	68
No	32	33	32
Ability to budget			
Have	73	73	74
Have no	27	27	26
Numeracy skills			
Addition skills Have	68	65	78
Have no	32	35	22
Subtraction skills Have	53	50	62
Have no	47	50	38
Multiplication skills Have	29	26	39
Have no	71	74	61
Division skills Have	37	34	47
Have no	63	66	53
Financial Institutions Use (FIU)			
Use of Banks			
Yes	8	5	18
No	92	95	82
Use of Non-banks			
Yes	0.6	0.4	1.4
No	99.4	99.6	98.6
Individual's characteristics			

Secondary completed	6	4	12
University/college education	2	2	3
Income (average Tsh/year)			
1,000-50,000,000	71.1	99.0	98.9
50,000,000-350,000,000	0.4	0.6	0.3
350,000,000-1,000,000,000	0.3	0.4	0.8
Age (years)			
16-45	72	70	79
46-60	18	19	12
61-100	10	10	8
Gender- Male	51	52	46
- Female	49	48	54
Marital status- Married	70	73	59
- Single	30	27	41

Note: All the figures in the table above are in percentage except indicated otherwise

Source: Author computations, 2022

Table 2 also provides information about an individual's characteristics. As one might expect, a large number of respondents in rural areas ended in primary education level (64%). This is a higher number compared to those in rural of which the percentage to other next education level is a bit higher. Demographically, about 99% of the rural population possess low income ranging from one thousand to fifty million per annum. Most of the respondents were found to be male aged between 16 years to 45 years.

In general, the descriptive findings in this part are extracted as part of an attempt to demonstrate the link between financial literacy, household characteristics and rural household access to microcredit. Furthermore, these descriptive findings are presented to see whether they corroborate the regression results in the next section while controlling for other variables.

Regression Output

Logit models were first estimated for rural area respondents who were the main area of study. The main variables of the study were initially considered, and then control variables were also regressed against the loan acquiring decision. For robust checks, additional models were estimated to assess the consistency of the independent variables results if considering respondents living in urban as well as the entire sample of the study. Table 3, 4 and 5 present the variable coefficients/ beta and Pvalues in brackets that examine the impact of financial literacy and household characteristics on the probability of acquiring a loan. The first column indicates the results for rural households, the other two columns present results for urban and total households considered as a sample for this study.

Financial literacy on Loan acquiring

Concerning the model for rural households, the results illustrate that all the constructs under financial literacy are negative and significantly influence loan acquiring decisions at a five per cent significance level. The results show that knowledge of money matters (β= -0.283, p-value=0.000); ability to seek financial advice (β= -0.629, p-value=0.000); involvement decision to manage money (β= 0.226, p-value=0.000); ability to keep track of income and expenses (β= -0.051, pvalue=0.000); ability to budget (β= -0.184, p-value=0.000) and numeracy skills (β= 0.104, p-value=0.000). These results indicate that rural households with less financial literacy are less likely to acquire micro-credit or are less motivated to

borrow money. Thus, those respondents who didn't have knowledge of money

matters, did not seek financial advice, were not involved in the financial decision, track their income and expenses were 28.3, 62.9, 22.6, and 5.1 percentage points, respectively, less likely to acquire loan. This is similar to those with no budget skills (22.6 percentage points) and numeracy skills (10.4 per cent).

Table 3: Logit regression results on financial literacy

Variables	**(1)**	**(2)**	**(3)**
	Rural	**Urban**	**All**
Knowledge of money matters	-.283**	-.154**	.272**
	(.000)	(.000)	(.000)
Ability to seek financial advice	-.629**	-.417**	.522**
	(.000)	(.000)	(.000)
Involvement decision to manage money	-.226**	-.558**	.333**
	(.000)	(.000)	(.000)
Ability to keep track of income and expenses	-.051**	-.185**	.102**
	(.000)	(.000)	(.000)
Ability to budget	-.184**	.188**	-.154**
	(.000)	(.000)	(.000)
Numeracy skills	-.104**	-.198**	-.208**
	(.000)	(.000)	(.000)
Observations Nagelkerke R^2	1,297	352	1,649
	0.170	0.175	0.107

All logits were weighted. Standard errors in parentheses ***p<0.01, **p<0.05, *p<0.1.

Source: Author computation (2022)

A comparative analysis of financial literacy constructs in rural with that of urban is slightly different. For example, the coefficient of knowledge of money matters and ability to seek financial advice is 0.154 and 0.417, which are relatively lower than 0.283 and 0.629, respectively. The remaining coefficients in urban are slightly higher than that in rural. The possible clarification for this disparity could be that households located in urban areas are more financially literate compared to those in rural areas. Nagelkerke R squared of 0.170 in rural, 0.175 in urban, and 0.107 in the entire population indicates that the models fit on overall prediction.

Our hypothesis posits that financial literacy positively influences loan acquiring decisions among rural households. The results in Table 3 showed that financial literacy negatively and significantly influences loan acquiring decisions. In this regard, we failed to reject the null hypothesis. The result by Michelson et al. (2020), who studied credit card-taking behaviour in the Australian household, demonstrates the same results of this study that financial literacy has a negative and significant effect on credit accessibility. In contrast, (Hoque et al., 2021) revealed that financial literacy positively and significantly affected access to financial services. Wachira *et al.* (2015) determined that financial literacy did not significantly affect household credit accessibility. In terms of self-efficacy theory, the results suggest that financially literate people are more likely to make excellent financial choices and enjoy a happy, prosperous life as financial self-efficacy makes them comprehend microcredit and use it properly. Samreth *et al.* (2021) argue that financially illiterate people tend to worry more about spending now or borrowing than saving and investing for the future. Often times they don't know how difficult it will be to repay their debts. It is fair to assume that at a micro level, financial literacy might lead to increased savings, better risk management, and better financial choices (Estrada-Mejia et al., 2020). From such a perspective we can argue that financially literate people are less likely to borrow

from micro-credit institutions leading to a significant negative influence of financial literacy on rural household accessibility to microcredit.

Household's characteristics

For individual characteristics, except for the education level construct, all the control variables in rural and urban respondents indicate negative and statistically significant. Income level, age, gender, and marital status was 2.1, 1.0, 48.0, 22.8 and 52.4 percentage points, respectively, less likely to acquire loan, while education level is 14.2 per cent more likely to acquire loan. This signifies those individual characteristics outlined in Table 5 have a negative influence on the decision whether to acquire a loan or not. This means that an additional income level and year of households will not influence them to acquire loan by indicated betas. Moreover, married individuals have less probability (22.8 percentage points) to acquire loan than single individuals (52.4 percentage points).

Table 4: Logit regression results on Individual's characteristics

Variables	**(1)**	**(2)**	**(3)**
	Rural	**Urban**	**All**
Education level	.142**	.491**	.200**
	(.000)	(.000)	(.000)
Income (average Tsh/year)	-.021**	-.021**	-.017**
	(.000)	(.000)	(.000)
Age (years)	-.010**	-.009**	-.009**
	(.000)	(.000)	(.000)
Gender	-.480**	-.364**	.437**
	(.000)	(.000)	(.000)
Married	-.228**	-1.665**	.605**
	(.000)	(.000)	(.000)
Single	-.524**	-.726**	.172**
	(.000)	(.000)	(.025)
Observations Nagelkerke R^2	1,297	352	1,649
	0.150	0.186	0.160

All logits were weighted. Standard errors in parentheses ***p<0.01, **p<0.05, *p<0.1. Omitted categories includes: Worried not to be able to refund loan, Worried about high interest rates

Source: Author computation (2022)

The results above indicate that not only financial literacy is of significant influence on microcredit accessibility but also Education level, Income (average Tsh/year), Age (years), Gender and Marital status. Only education level had a significant positive influence on microcredit accessibility indicating that individuals with higher levels of education are more likely to borrow from microcredit institutions. These results are in line with those of (Lotto, 2018), who concluded that education significantly affected access to microcredit while increment in age and income negatively affected the choice to engage with borrowing from microcredit institutions amongst rural households.

Conclusion

The study concludes that financial literacy has a negative effect on rural households' access to microcredit. Specifically, it implies that enhancement in financial literacy doesn't enhance rural household access to microcredit. Low microcredit accessibility among financially literate rural households might suggest that microcredits might not be fulfilling the expected ambitions of financially literate individuals who are expected to make sound financial decisions. Despite the results showing that financial literacy negatively influences

the acquisition of microcredit, it is still agreed globally that it is a vital factor for enhancing rural households' participation in the modern financial system. We are of the view that microcredit is of great use to the rural poor, but we are inclined to ponder that the smaller loans they offer might not suffice for the financially literate households who are looking to accomplish greater things. We suggest that future researchers try to establish where the financially literate in rural areas usually borrow or whether they have low to no borrowing tendencies.

Recommendations

Several suggestions arise from this study's results. Firstly, we recommend that microfinance institutions devise the most cost-effective way of serving rural households as we believe that financially literate individuals might be shying away from microcredit due to the high cost of borrowing. Secondly, we recommend that the microfinance services extend an easy reach into the rural areas by collaborating with mobile service providers to bring micro-loans to the fingertips of rural households. Thirdly, we recommend that the Tanzanian government to subsidize the microfinance sector so as to enable the offering of microcredits at the lowest rates possible. Lastly, we still insist that financial literacy is key to sound decision-making and will always remain key in all poverty-related battles; hence we suggest curricula should be designed to include elements of personal finance from the early levels of education.

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