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The Effect of Credit Accessibility on Profitability of Non-Farm Enterprises in Tanzania

Mercy Mathew Kirama¹, Ramadhani Nuhu Semvua^{2*}

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ABSTRACT

Non-farm activities are vital for poverty reduction, economic growth, and diversification in developing countries like Tanzania. However, non-farm enterprises have limited financial support, leading to a shortage of capital, increased vulnerability to economic downturns, and limited access to resources. This study aimed to explore the relationship between credit access and profitability outcomes among non-farm enterprises in Tanzania. Data from the Extended Tanzania National Panel Survey (INPS) waves 4 and 5 revealed that only 18 percent of all non-farm enterprises had access to credit. Factors influencing credit accessibility include rural residence, working experience, and start-up capital source. However, the study found that profitability in non-farm enterprises is influenced by factors such as Tanzania Revenue Authority (TRA) registration, marital status, education level, location, working experience, and capital source. The study advocates for the implementation of policies that not only enhance credit access through targeted financial products but also support non-farm enterprises with training programs in business management and operational skills, and encourage formal registration with the Tanzania Revenue Authority to increase their profitability and resource accessibility.

INTRODUCTION

Non-farm activities play a crucial role in boosting the economy and alleviating poverty in rural Tanzania by offering income-generating opportunities for various groups, including women, the elderly, and individuals with disabilities who may be unable to work on farms (Bayrak *et al.*, 2022). These activities also employ young people who might otherwise struggle to find jobs in the agricultural sector, thus easing the pressure on farming and curbing rural-urban migration. Despite the clear advantages of non-farm enterprises, their growth is significantly impacted by the availability of credit, which is essential for investment and expansion. Access to credit is a major determinant of the success and profitability of non-farm enterprises, enabling these businesses to achieve sustainable growth over time (Nguyen, 2022).

However, despite the significant participation in non-farm activities, a large proportion of the rural population in emerging nations like Tanzania remains impoverished. The shift from farming to non-farm employment, particularly among the youth, has not been matched by adequate government support or financial backing for these enterprises (Katega, 2014). The limited assistance from the government, donors, and NGOs has hindered the accessibility of credit, which is vital for the profitability and sustainability of non-farm enterprises (Loening & Lane, 2007). Given the importance of non-farm activities in rural income generation and poverty reduction, it is essential to explore the impact of credit availability on the profitability of these enterprises in Tanzania.

Despite the growing importance of non-farm activities, they have traditionally been overlooked in policy discussions, often being seen as secondary to farm income

(World Bank, 2016). This has resulted in a lack of support and resources for non-farm enterprises, even though they play a crucial role in the socio-economic development of both rural and urban households. Research shows that non-farm enterprises in rural Africa are often informal, seasonal, and low in productivity, primarily serving as a survival strategy rather than a means for substantial economic growth (*ibid.*). These enterprises are particularly vulnerable to shocks and lack of resources, with women and youth being the most affected (Scharf & Rahut, 2014).

In Tanzania, non-farm activities have gained increased importance as sources of livelihood, especially following the implementation of Structural Adjustment Programs (SAPs) in 1986, which led to the expansion of the informal sector (Mpehongwa, 2005). Despite the growing participation in non-farm activities, these activities face numerous challenges, including insufficient capital, lack of entrepreneurship skills, and inadequate government support (URT, 2015). Addressing these challenges requires deliberate efforts to transform non-farm activities into sustainable sources of livelihood. This transformation necessitates better policy support and funding to enhance the contribution of non-farm enterprises to rural economic development and poverty alleviation (Katega, 2014; URT, 2017). Therefore, exploring the impact of credit accessibility on the profitability of these enterprises is crucial to ensure that non-farm activities fulfill their potential in improving rural livelihoods in Tanzania.

This research is designed to address this critical gap by pursuing two specific objectives: to assess the factors influencing credit accessibility among non-farm enterprises and to examine the impact of credit access

¹ Tanzania Bureau of Standards, P. O. Box 9524, Dar es Salaam, Tanzania

² University of Dar es Salaam, School of Economics, P. O. Box 35045, Dar es Salaam, Tanzania

* Corresponding author's e-mail: ramadhani.semvua@udsm.ac.tz

on the profitability of these enterprises in Tanzania. The study is structured around the following research questions: What are the factors influencing credit accessibility among non-farm enterprises? What is the impact of credit accessibility on the profitability of non-farm enterprises? Notably, previous studies have not specifically explored the relationship between credit access and enterprise profitability using panel data, which provides a more comprehensive analysis over time. By filling this literature gap, the study offers insights into how credit access influences the financial performance of non-farm enterprises, contributing to a deeper understanding of rural economic development dynamics.

LITERATURE REVIEW

Theoretical Review

The Neoclassical Growth Theory, proposed by Solow and Swan (1956), explains the role of labor, capital, and technology in driving economic growth. It emphasizes that capital accumulation and its effective application within the economy are critical for long-term economic progress. The theory suggests that the interaction between capital and labor significantly impacts output, with the marginal productivity of capital being a key driver of growth. This theory suggests that increased access to credit enables better capital accumulation and investment in non-farm enterprises, thereby enhancing their productivity and profitability. On the other hand, the Pecking Order Theory, introduced by Stewart Myers in 1984, focuses on corporate finance, proposing that companies should prioritize funding through retained earnings, followed by debt, and lastly, equity. This theory is particularly relevant to small and medium-sized enterprises (SMEs), which often follow a hierarchical approach to financing, starting with internal funds before seeking external debt. The Pecking Order Theory highlights the importance of credit assistance for business growth, especially for firms that cannot self-finance.

The Welfarist Theory, rooted in the ideas of Adam Smith, emphasizes the role of self-interested investors in achieving an optimal distribution of capital, leading to societal well-being. This theory promotes the support of microfinance institutions (MFIs) as a means to reduce poverty by providing microcredit, micro-savings, and micro-insurance. Welfarists argue that subsidizing MFIs helps lower operational costs, making these institutions effective tools for poverty eradication and sustainable living. The theory of Credit Rationing and Constraint, developed by Stiglitz and Weiss (1981), explores how credit limitations, driven by factors such as interest rates and collateral requirements, can restrict access to loans, particularly for low-income businesses. This theory suggests that credit constraints can significantly hinder firms' ability to invest and maximize profits, disproportionately affecting underprivileged entrepreneurs. The observable characteristics of borrowers, such as their wealth, experience, and credit history, as well as the collateral offered, play crucial roles in a bank's decision to extend credit. These theoretical

perspectives collectively provide a foundation for analyzing the impact of credit accessibility on the profitability of non-farm enterprises, highlighting the need for targeted financial support to foster sustainable economic growth in rural areas.

Empirical Review

Empirical studies on the factors affecting credit accessibility among non-farm enterprises explain several key challenges across different countries. Eboh and Ndako (2015) found that in Nigeria, factors such as a lack of collateral, low levels of education, income, and business experience significantly hindered credit accessibility for non-farm enterprises. Asare and Amissah (2017) identified financial constraints such as lack of collateral, limited access to credit information, and weak credit histories as major barriers to credit for SMEs in Ghana. They concluded that improving access to credit would require addressing these constraints through systemic improvements, such as better collateral registry systems and credit information services. In South Africa, Balogun *et al.* (2018) found that credit accessibility for small and medium contractors in the construction industry is significantly influenced by factors such as financial performance and the strength of relationships with financial institutions. Improving these aspects can enhance the ability of SMEs to secure funding.

Moreover, empirical studies on the effect of credit accessibility on the profitability of non-farm enterprises reveal consistent challenges and opportunities. Ojonta and Ogbuabor, (2021) investigated the impact of credit access on non-farm household enterprises in Nigeria, finding that while credit availability positively influences the performance of these enterprises, access remains limited, particularly for rural businesses. The study highlights that urban non-farm enterprises have better access to credit, which significantly enhances their profitability. Similarly, in Bangladesh, Ahmed *et al.* (2011) found that access to microcredit through institutions like Grameen Bank and BRAC plays a crucial role in improving productivity and reducing poverty among non-farm enterprises, particularly those operated by women.

In East Africa, Mbughuni, (2018) and Njenga, (2017) also found that in Tanzania and Kenya, respectively, limited access to credit information, lack of collateral, and poor credit histories were significant obstacles to credit accessibility. Additionally, research in Tanzania by Mpehongwa, (2005) and Katega and Lifuliro, (2014) emphasized the role of local government initiatives and microfinance institutions in supporting non-farm enterprises. However, these studies also highlighted the persistent challenges of limited credit availability, insufficient entrepreneurial education, and inadequate infrastructure, which hinder the profitability and sustainability of non-farm enterprises. Collectively, these findings suggest that while credit access is a critical factor for the profitability of non-farm enterprises, significant barriers remain that require comprehensive policy and institutional support to be effectively addressed.

MATERIALS AND METHODS

Data

This study used the extended version of the last two waves namely: the extended fourth wave (2014-2015) having a sample size of 3,352 households, and the extended fifth wave (2019-2020) having a sample size of 1,184 households. The research only utilized the extended version of the last two waves of data because the first three waves (Wave 1, 2, and 3) are outdated and have a higher probability of involving different participants compared to the two final waves (Wave 4 and 5). The data utilized in this study was obtained from the National Bureau of Statistics (NBS) through the Household and Individual Questionnaire for the years 2014/2015 and 2019/2020.

Sampling Techniques

The Tanzania National Panel Survey (TNPS) used a multi-stage stratified sampling design to select a sample of individuals from Enumeration Areas (EAs) and households within each EA. The study categorized individuals into two groups based on their income generation activities: on-farm and off-farm activities. The study aimed to investigate the accessibility of credit and profitability of non-farm enterprises. The sample size for the credit accessibility and profitability models was 1,027 observations. However, the study did not obtain balanced panel data due to unequal distribution across different waves of data collection. As a result, the analysis of credit accessibility and profitability was conducted using an unbalanced panel dataset, as creating a balanced dataset would require discarding over 56 percent of the data.

Estimation Techniques

Theoretical Framework

In empirical economic studies, unbalanced panels are common due to variations in data recording periods among different entities, such as countries, states, or firms. These panels can be called “unbalanced” or “incomplete” panels, as they may be influenced by market dropouts or new entrants within the sample period. When dealing with unbalanced panel data, the study emphasizes the Maximum Likelihood (ML) random-effects regression estimator more than the standard random-effect model. The ML estimator takes a different approach by fully maximizing the likelihood of the random-effects model, assuming a specific distribution for the individual-specific effects. This estimator estimates the variance components for the individual-specific effects and the error term through maximum likelihood estimation, which can be computationally intensive but provides more precise estimates compared to the Generalized Methods of Moment (GMM) estimator. Therefore, the model is specified as follows;

$$y_{it} = X_{it}'\beta + u_i + \mu_{it} \quad i=1, \dots, N \quad \text{and } t=1, \dots, T_i \quad (1)$$

where, y_{it} represents the output of the i -th firm during the t -th period, while X_{it} represents a vector of k non-stochastic inputs. The available data is incomplete

because it pertains to N firms that have been observed over different periods of varying lengths, denoted as T_i for $i = 1$ to N . The disturbance term in equation (1) is determined by

$$\mu_{it} = \mu_i + v_{it} \quad i=1, \dots, N \quad \text{and } t=1, \dots, T_i \quad (2)$$

Furthermore μ_i represents the unobservable firm-specific effect for the i -th firm, assumed to follow $(0, \sigma_\mu^2)$. On the other hand, v_{it} represents the residual disturbance term, assumed to follow $\text{IID}(0, \sigma_v^2)$. Both sets of parameters, v_{it} and μ_i , are assumed to be independent of each other and independent within their own sets.

Model Specification

Factors Affecting Credit Accessibility among Non-Farm Enterprises

Credit accessibility is the outcome variable in the first model which is treated as a qualitative response, where the owner of non-farm enterprises can either access credit or not access credit. Since the outcome variable is a binary variable and the dataset is a panel, the Panel Probit models estimation technique will be used for analysis rather than logit models. The study adopted the panel probit model since, with a small sample size and valid distributional assumptions, the panel probit model offers accuracy and precision in analysis compared to logit models.

$$\Pr(\text{Credit accessibility} = 1) = \beta_0 + \beta_1 \text{Age}_{it} + \beta_2 \text{Sex}_{it} + \beta_3 \text{Residence}_{it} + \beta_4 \text{Experience}_{it} + \beta_5 \text{TRA Registration}_{it} + \beta_6 \text{Marital status}_{it} + \beta_7 \text{Education level}_{it} + \beta_8 \text{Location}_{it} + \beta_9 \text{Source of capital}_{it} + \epsilon_{it} \quad (3)$$

Whereby credit accessibility = 0 and 1, $i=1, 2, \dots, 1,027$ and $t=1$ and 2

Factors Affecting the Profitability of Non-Farm Enterprises in Tanzania

In the second model, profitability is the continuous outcome variable that is quantified by net profit margin (NPM). The independent variables included in the panel models are age, sex, place of residence, experience, marital status, education, location of the non-farm enterprise owner, TRA registration status, source of capital, and credit accessibility which is the key independent variable.

$$\text{Profitability}_{it} = \alpha_0 + \alpha_1 \text{Credit accessibility}_{it} + \alpha_2 \text{Age}_{it} + \alpha_3 \text{Sex}_{it} + \alpha_4 \text{Residence}_{it} + \alpha_5 \text{Experience}_{it} + \alpha_6 \text{TRA Registration}_{it} + \alpha_7 \text{Marital status}_{it} + \alpha_8 \text{Education level}_{it} + \alpha_9 \text{Location}_{it} + \alpha_{10} \text{Source of capital}_{it} + \epsilon_{it} \quad (4)$$

Where, $i=1, 2, \dots, 1,027$ and $t=1$ and 2

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 below shows the summary statistics of the data used in this study. The table is divided into two categories: the first describes the enterprises' characteristics and the second describes individual characteristics. From the first section, the study discovered that only 18.3 percent of all non-farm enterprises can obtain a loan. This implies that most Tanzanian Non-Farm Enterprises could not obtain credit. The study reveals that only 18.3 percent of Tanzanian non-farm enterprises can obtain a loan,

indicating that the majority are unable to obtain credit. However, the profit margin for these enterprises is approximately 50 percent, indicating a healthy profit margin and low overhead costs. Most non-farm enterprises in Tanzania obtain capital from their sources (55.5 percent) and others inherit or obtain capital from family sources (35 percent). In terms of enterprise location, 32.3 percent of non-farm enterprises are permanently located near their homes, 26.6 percent are far from their homes, and 42.1 percent are mobile without a permanent address.

The study also finds that 18.3 percent of non-farm enterprises have less than one year of experience, indicating a high level of redundancy in the business sector. This could indicate a difficult business environment with high competition, limited access to capital and resources, or difficulties in maintaining operations. The majority of non-farm enterprises in Tanzania (49.1 percent) have more than one year and less than 5 years of business experience, while the remaining 32.6 percent have more than 5 years of experience.

Table 1: Descriptive Statistics

Variable	Obs.	Overall		Wave Four (2014)		Wave Five (2019)	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Enterprises Characteristics							
Credit accessibility	1027	.183	.387	.198	.399	.167	.374
Profitability (NPM)	1027	50.514	28.291	49.66	28.186	51.408	28.4
Source Capital							
Loan	1027	.095	.294	.126	.332	.064	.245
Money from different own sources	1027	.555	.497	.537	.499	.574	.495
Inherited/other	1027	.35	.477	.337	.473	.363	.481
Location							
Permanent around home	1027	.323	.468	.335	.473	.311	.463
Permanent far from home	1027	.256	.437	.232	.423	.281	.45
No fixed Location	1027	.421	.494	.432	.496	.408	.492
Experience (Years of operation)							
Less than one year	1027	.183	.387	.181	.385	.185	.389
Between 1 to 5 years	1027	.491	.5	.495	.5	.486	.5
Between 5 to 10 years	1027	.158	.365	.143	.35	.173	.379
Between 10 to 20 years	1027	.168	.374	.181	.385	.155	.363
TRA registration (Yes)	1027	.131	.338	.084	.277	.181	.386
Individual characteristics							
Residence (rural)	1027	.485	.5	.482	.5	.488	.5
Education level							
None	1027	.092	.289	.112	.316	.07	.255
Primary education level	1027	.622	.485	.625	.485	.62	.486
Secondary education level	1027	.266	.442	.246	.431	.287	.453
Tertiary education level	1027	.02	.142	.017	.13	.024	.153
Marital status							
Single/never married	1027	.106	.308	.095	.294	.118	.322
Married/living together	1027	.703	.457	.71	.454	.695	.461
Separated/Divorced/widow(er)	1027	.191	.393	.194	.396	.187	.391
Age	1027	38.5	12.944	38.17	13.258	38.847	12.611
Sex	1027	.515	.5	.522	.5	.508	.5

Source: Author's construction using STATA 17 from NPS data of 2014 to 2019

Considering individual characteristics, only 13.1 percent of the 1,027 non-farm enterprises examined are registered as taxpayers with TRA. The study found that 48.5 percent of non-farm enterprise owners live in rural areas, with an overall mean age of 38 years with an equal male-

female ratio. The majority of non-farm business owners have primary education, with a small percentage not having any education. Out of 1,027 observations, non-farm enterprises were based on different types, including constructors (7.9 percent), food vendors (13.8 percent),

traders (46.7 percent), local alcohol sellers (3.4 percent), tailors/hairdressers/barbers (9.5 percent), drivers (bus/

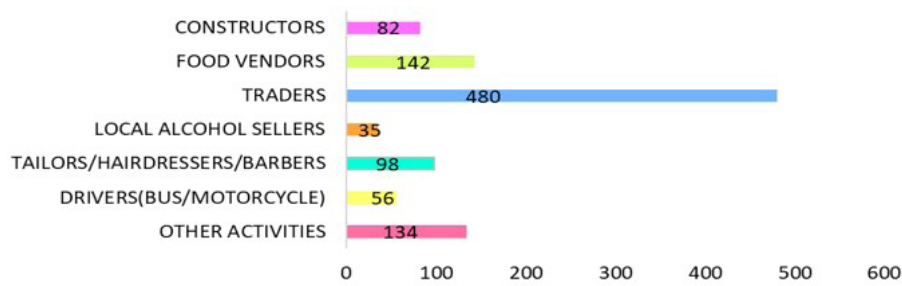


Figure 1: Types of Non-Farm Enterprises

Credit Accessibility among Non-Farm Enterprises
Credit Accessibility

Considering the study’s objective of credit distribution on non-farm enterprises, NPS data show that approximately 82 percent of all non-farm enterprises do not have access to credit, as shown in Figure 2 below. This finding supports the findings of Magembe (2017) and Kira and He (2012), who found that approximately 365 million to 445 million enterprises in emerging markets, accounting

not want, or do not qualify for it. This is due to several factors, including some SMEs not qualifying for credit due to poor business education programs provided to them, some SMEs reluctant to use credit because they believe interest rates are too high, and in some cases, since credit agreements frequently include collateral requirements and in developing economies like Tanzania, people have few high-value material possessions to tie to their credit agreements, this might limit their access to trade (ibid).

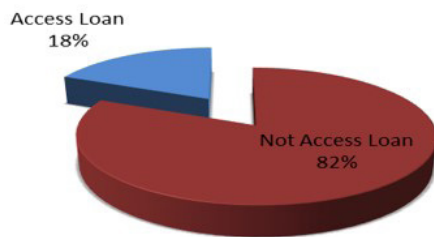


Figure 2: Credit Accessibility among Non-Farm Enterprises in Tanzania.

Source of Capital among Non-Farm Enterprises

According to the study, the majority of non-farm enterprises get start-up capital from their savings (26.1 percent), gifts from family or friends (25 percent), proceeds from farm or agriculture businesses (13.3 percent), and proceeds from other non-farm businesses (12.6 percent), as shown in figure 3 below. As shown in the figure, the study discovered that 9.5 percent of their capital is associated with loans (loans from money lenders, loans from banks or other institutions, non-agricultural credit, loans from SACCOS, and loans from family or friends). On the other hand, the study discovered that approximately 7.5 percent of all non-farm enterprises begin with no start-up costs, eliminating the need for them to obtain a loan.

for 85 percent, face credit access constraints. This means that even in Tanzania, the majority of Tanzanian SMEs have limited access to credit. Credit is difficult to obtain in Tanzania because many businesses cannot afford, do

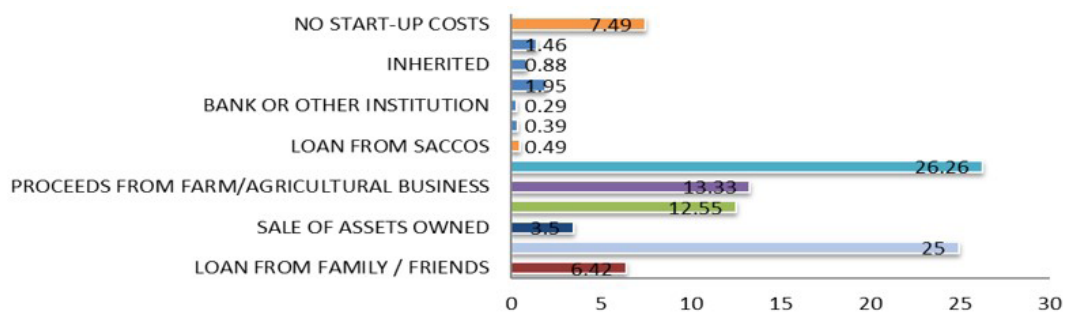


Figure 3: Source of Capital among Non-Farm Enterprises in Tanzania

Social Demographical Characteristics and Credit Accessibility

Responding to the study objective concerned with the effects of credit availability on the profitability of non-farm enterprises in Tanzania, this study employs bivariate analysis to investigate the relationship between various social demographic factors and credit accessibility.

Relationship between Education Level and Credit Accessibility

Considering the enterprise owner’s education level and credit accessibility, this research study discovered that there is no relationship between education level difference and loan accessibility. This is illustrated in Table 2 below;

Table 2: Associations between Education Level and Credit Accessibility

Education Level	Credit Accessibility		
	Not Access Loan	Access Loan	Total
None	78	16	94
	9.30	8.51	9.15
Primary education level	523	116	639
	62.34	61.70	62.22
Secondary education level	221	52	273
	26.34	27.66	26.58
Tertiary education level	17	4	21
	2.03	2.13	2.04
Total	839	188	1027
	100.00	100.00	100.00
Pearson Chi2 = 0.22 Prob = 0.9740			

The first row has frequencies and the second row has column percentages

Relationship between Residence and Credit Accessibility

Considering the correlation between residence and credit accessibility, the investigation ascertained a noteworthy dissimilarity in credit accessibility among non-agricultural

business proprietors who reside in urban and rural localities. As indicated by the results illustrated in Figure 4, 62.03 percent of loan beneficiaries belong to urban communities, whereas individuals from rural areas constitute the majority of loan inaccessibility (37.97 percent).

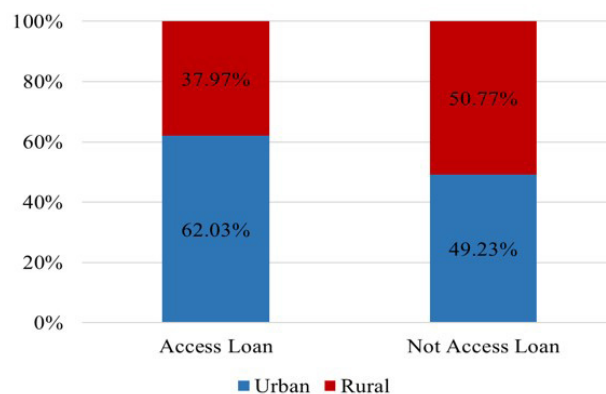


Figure 4: Relationship between residence and Credit Accessibility

Relationship between Business Location and Credit Accessibility

This study found that there is no relationship between those who are located on Permanent buildings around home

residence, Permanent buildings far from home residence, and those who have No Fixed Location/Mobile and loan accessibility likelihood in terms of non-farm business location and credit accessibility. As shown in Table 3 below.

Table 3: Relationships between businesses location and Credit accessibility

Location of Enterprises	Credit Accessibility		
	Not Access Loan	Access Loan	Total
Permanent building around the home residence	266	66	332
	31.70	35.11	32.33
Permanent building away from home residence	213	50	263
	25.39	26.60	25.61
No fixed Location/Mobile	360	72	432
	42.91	38.30	42.06
Total	839	188	1027
	100.00	100.00	100.00
Pearson Chi2 = 1.41 Prob = 0.4932			

The first row has frequencies and the second row has column percentages

Relationship between Experience and Credit Accessibility

In terms of the relationship between non-farm business experience and credit accessibility, this research study

discovered that there is no significant difference between experienced and newer non-farm business owners in terms of loan accessibility. This is illustrated in Table 4 below;

Table 4: Associations between Experience and Credit Accessibility

Years of experience	Credit Accessibility		
	Not Access Loan	Access Loan	Total
None	156	32	188
	18.59	17.02	18.31
Less than 5 years	414	90	504
	49.34	47.87	49.07
Between 5 to 10 years	136	26	162
	16.21	13.83	15.77
More than 10 years	133	40	173
	15.85	21.28	16.85
Total	839	188	1027
	100.00	100.00	100.00

Pearson Chi2 = 3.51 Prob = 0.3195

The first row has frequencies and the second row has column percentages

Factors Affecting Credit Accessibility among Non-Farm Enterprises in Tanzania

The factors influencing credit accessibility are examined using the random-effects (RE) probit model in this study. This is because the RE probit model was designed

for cases where the outcome of interest is a series of correlated binary responses, which is the nature of the dependent variable (credit accessibility) in this study. The results are shown in Table 5 below:

Table 5: Marginal Effects of a Panel Probit Regression Model

	dy/dx	Std. Err.	Z	P>z
Age	0.001	0.001	1.060	0.287
Sex	-0.025	0.021	-1.190	0.233
Residence (rural)	-0.045**	0.019	-2.360	0.018
Experience	0.002**	0.001	2.050	0.041
TRA registration	-0.005	0.029	-0.170	0.863
Marital status				
Married/living together	0.023	0.028	0.840	0.403
Separated/Divorced/widow(er)	0.053	0.037	1.420	0.156
Education level				
Primary education level	0.044	0.027	1.600	0.110
Secondary education level	0.056	0.033	1.720	0.085
Tertiary education level	0.057	0.076	0.750	0.451
Location				
Permanent building away from home residence	-0.023	0.025	-0.920	0.359
No fixed Location/Mobile	-0.028	0.022	-1.240	0.215
Source Capital				
Own money from other sources	-0.848***	0.025	-34.240	0.000
Inherited/other	-0.864***	0.026	-33.880	0.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The study findings show the significant challenges faced by rural residents in accessing credit, emphasizing a nearly 4.5 percentage point disadvantage compared

to their urban counterparts. This disparity is largely attributed to the concentration of financial institutions in urban areas, where residents typically possess better

collateral and more established financial histories, making them more attractive to lenders. The findings resonate with previous research by Berger and Udell (2006) and Gilbert (2008), which suggest that proximity to lending institutions enhances credit accessibility. The study also reveals a positive relationship between a non-farm enterprise's years of operation and its ability to access loans. Enterprises with at least one year of experience increase their likelihood of securing credit by 0.2 percentage points, as experience reduces perceived risks and enhances the creditworthiness of the borrower. These results align with Chandler's (2009) findings, which associate a firm's longevity with its resilience and credibility in the eyes of lenders. Furthermore, younger firms often face significant hurdles in obtaining bank financing, relying more on informal sources due to the information asymmetry explained by (Klapper, 2010). Considering the source of startup capital, the study finds

that non-farm enterprise owners who initially funded their businesses through loans are significantly more likely to access future loans compared to those who relied on personal or family wealth. This is consistent with the findings of Ojonta *et al.* (2021), which indicate that the primary source of startup capital plays a critical role in determining a business's ongoing credit access. Conversely, factors such as TRA registration, location, and sex were found to have an insignificant impact on credit accessibility, a conclusion that mirrors the mixed results in the literature regarding the influence of age, education level, and other demographic factors on loan acquisition.

Factors Affecting the Profitability of Non-Farm Enterprises in Tanzania

The results of the model, which aimed to examine the influence of various variables on the profitability (NPM) of non-farm enterprises, are presented in Table 6 below:

Table 6: Random-Effects ML Regression Model Results

Profit Margin	Coef.	St.Err.	t-value	p-value
Credit accessibility (Yes)	.927	2.753	0.34	.736
TRA registration (Yes)	-9.48***	2.562	-3.70	0
Marital status (single)				
Married/living together	-6.453**	2.918	-2.21	.027
Separated/Divorced/widow(er)	-4.816	3.584	-1.34	.179
Age	.035	.083	0.42	.675
Sex (Male)	9.981***	2.053	4.86	0
Residence (rural)	1.026	1.814	0.57	.572
Education level (None)				
Primary education level	-5.243*	3.16	-1.66	.097
Secondary education level	-8.146**	3.542	-2.30	.021
Tertiary education level	-12.408*	7.06	-1.76	.079
Location (Permanent around from home residence)				
Permanent away from home residence	-5.874**	2.291	-2.56	.01
No fixed Location/Mobile	.552	2.029	0.27	.786
Experience (Less than 1 year)				
Less than 5 years	4.211*	2.287	1.84	.066
Between 5 to 10 years	7.149**	2.959	2.42	.016
more than 10 years	9.244***	3.122	2.96	.003
Source of capital (Loan)				
Money from different own source	-.223	3.708	-0.06	.952
Inherited/other	8.648**	3.796	2.28	.023
Constant	49.989***	6.54	7.64	0
Constant	17.708	1.259	.b	.b
Constant	20.21	.939	.b	.b
Mean dependent var	50.792	SD dependent var	28.412	28.412
Pseudo r-squared	0.011	Number of obs	1027	1027
Chi-square	106.358	Prob > chi2	0.000	0.000
Akaike crit. (AIC)	9658.265	Bayesian crit. (BIC)	9756.934	9756.934

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The study reveals that various factors, including the location of enterprises, education level of the owner, source of capital, marital status, TRA registration, experience, and gender, significantly influence the profitability of non-farm enterprises in Tanzania. Notably, gender, TRA registration, and extensive experience (over ten years) show a strong relationship with profitability at a 1% significance level. Additionally, factors like marital status, secondary education, enterprise location, and experience between five to ten years also play crucial roles, albeit at a 5% significance level. Experience under five years and higher education levels influence profitability at a 10% significance level. However, the study finds that credit availability and the age of the owner do not significantly impact the profitability of non-farm enterprises, suggesting that other factors such as management efficiency, market conditions, and competition may have a more substantial effect on profitability.

The research aligns with studies like Itonga *et al.* (2016) in Kenya, which also found that credit access does not significantly affect the financial performance of small enterprises, especially those owned by women. This is because many women successfully operate their businesses using personal savings rather than credit. On the other hand, the findings contradict studies such as Magembe (2017), which argue that credit is crucial for business growth, particularly when invested in productive assets. These mixed results indicate that while credit is vital for expansion, it might not be the primary determinant of profitability, necessitating further research to understand the role of credit and other factors better.

Gender disparities in profitability are also evident, with male-owned non-farm enterprises tending to be more profitable than those owned by females. The study suggests that this disparity might be due to differences in access to resources, social norms, and cultural expectations, with male owners often having more time and focus on their businesses. Additionally, the study finds that non-farm enterprises owned by single individuals are generally more profitable than those owned by married individuals. This could be because single owners might have greater flexibility, faster decision-making processes, and more time to dedicate to their businesses, contributing to higher profitability.

Surprisingly, the study discovers that enterprises owned by individuals with higher education levels tend to be less profitable than those owned by individuals with no education. This could be due to higher education owners being more risk-averse or focusing more on theoretical knowledge rather than practical business skills. The study also emphasizes the importance of experience, with more experienced owners typically achieving higher profitability. Lastly, the findings highlight that TRA registration and the distance of the business from the owner's residence negatively impact profitability, possibly due to additional costs and logistical challenges associated with these factors.

CONCLUSION

The study examined credit accessibility and source of capital among non-farm enterprises in Tanzania. The results showed that approximately 82% of non-farm enterprises do not have access to credit, which is consistent with previous studies on credit access constraints faced by SMEs in emerging markets. This is due to several factors such as poor business education programs, high interest rates, and collateral requirements. The majority of non-farm enterprises obtain start-up capital from their savings and gifts from family or friends, while a small percentage obtain loans from money lenders, banks, or other institutions.

The results of the panel probit RE model; indicate that age, sex, TRA registration, marital status, education level, and location are not significant predictors of credit accessibility. On the other hand, residence (rural), experience, and source capital (own money from other sources and inherited/other) have significant negative effects on credit accessibility. These findings suggest that living in a rural area, having less experience, and relying on own money or inheritance negatively impact access to credit for non-farm enterprises.

Following the identification of the factors influencing credit accessibility, the study examines the impact of credit accessibility on profitability outcomes in non-farm enterprises. The results of the panel RE model indicate that sex, experience, TRA registration, education level, location, and source of capital are significant predictors of profitability. Specifically, being male, having more experience, not being registered with TRA, having less education level, and having a permanent near location from home residence are positively associated with profitability. Conversely, having a single or separated/divorced/widowed marital status, having primary or tertiary education level, and inheriting/other sources of capital are negatively associated with profitability. Credit accessibility, age, and source of capital (loan or own money from different sources) are not significant predictors of profitability.

Policy Implications

The findings of this study have several policy implications for the government, policymakers, stakeholders, and non-farm researchers. For Government and Policymakers: The study's findings on the factors influencing credit accessibility among non-farm enterprises explain the importance of developing policies that address the underlying constraints that these businesses are facing. Also, the findings suggest that policies aimed at improving non-farm enterprises' experience and operations may positively impact their profitability. The government should consider offering training and support programs to non-farm enterprise owners to improve their skills and knowledge, which could lead to increased profitability. Also, the study's findings suggest that stakeholders in the non-farm enterprise sector can help improve the

profitability of these businesses. For example, stakeholders such as lenders and investors could consider supporting non-farm enterprises that have a proven track record and are located in areas far from home. This could help improve these businesses' financial stability and growth, potentially leading to higher long-term profitability. Furthermore, even though the study provides valuable insights into the factors influencing credit accessibility and profitability among non-farm enterprises, there is still room for further research in this field. More research, for example, could be conducted to examine the specific challenges faced by non-farm enterprises in different regions, to develop more targeted solutions to these challenges. It would also be interesting to investigate the role of other factors, such as technology adoption, in influencing the growth and profitability of non-farm enterprises.

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