

**FINANCIAL INCLUSION AND SOCIO-ECONOMIC TRANSFORMATION: A CASE OF MBARALI-MBEYA, TANZANIA**

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**ABSTRACT**

The present study examines the relationship between financial inclusion and socio-economic transformation in the specific context of Mbarali-Mbeya. The study's target population comprises all participants involved in the rice-farming supply chain. Employing a correlation research design and a multistage sampling technique, a total of 210 units of inquiry were collected. Data was gathered by administering questionnaires and subsequently subjected to inferential analysis using various statistical methods such as multiple regressions, logit analysis, and multiple correlations. The analysis findings revealed that the accessibility, adequacy, affordability, safety, and sustainability of financial services and products were aligned with the latent variable of financial inclusion. Furthermore, the study identified several positive and significant determinants of financial inclusion, namely: management innovation within financial institutions, the presence of facilitating and innovative financial infrastructures, financial literacy, and formal operating mechanisms. Additionally, the study found that surplus outputs, quality produce, increased sales revenue, per capita income, and access to quality social services positively and significantly influenced socio-economic transformation. Based on these results, the study provides recommendations for achieving sustainable socio-economic transformation. It emphasizes the importance of effectively including financial users in the financial system to facilitate socio-economic progress. Furthermore, the study suggests that universal accessibility to adequate, affordable, and high-quality financial products should be prioritized to promote financial inclusion. Additionally, sustaining management innovation within financial institutions, developing robust financial infrastructures, promoting financial literacy, and formalizing businesses are all crucial in attaining the necessary conditions for financial inclusion and subsequent socio-economic transformation.

**Keywords:** Financial inclusion, management effectiveness, financial infrastructures, financial literacy, formalization of businesses, socio-economic transformation.

**1. INTRODUCTION**

Financial inclusion refers to the accessibility and availability of sound, effective, and adequate financial services and products for the growth of individuals and firms (United Nations Development Program, UNDP, 2009). It ensures that both large and small-scale firms have access to affordable financial services and products, which is particularly important for developing countries where the establishment of stable, efficient, and sound financial inclusion remains a challenge, hindering social and economic welfare improvements, especially for micro, small, and

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medium enterprises (MSMEs), households, and low-income earners (Global Financial Development Report, 2014). The presence of accessible, available, and adequate financial services and products, including credit (loans), savings, money transfer, and insurance, plays a crucial role in determining social and economic transformation. Therefore, an effective financial sector that fosters financial inclusion becomes a key determinant for increasing per capita income and enhancing social welfare.

Moreover, financial inclusion contributes to the financial stability of small and large firms and individuals, promoting business growth (United Nations, UN, 2003). It catalyzes growth in primary, secondary, and service economic sectors. Adequate financial capital, facilitated through financial inclusion, is necessary for increased production and extraction in sectors such as agriculture. Sufficient financial resources support the sustainability of manufacturing, construction, trade, and services industries, which depend on large and high-quality agricultural produce and other primary sector outputs such as forestry, fishing, and mining (Cheng & Degryse, 2010). Acquiring physical resources like raw materials (e.g., seeds, fertilizers) and capital inputs (e.g., machinery) necessitates accumulating financial resources at an affordable price, emphasizing the importance of a well-functioning and comprehensive banking and non-banking financial sector.

In Malawi, proceedings deposited into committed savings accounts (withdrawals allowed an accomplishment of a self-specified goal) prompted farmers to spend 13% more money on equipment and grow the value of crop output by 21%, consequently earning good margins (Brune *et al.*, 2015). In Niger, social safety net payments done through mobile devices rather than cash basis lessened travel and wait times by 75%, and the saved time and costs were comparable to cash sufficient to feed a household house of five individuals for a day in Nigeria (Aker *et al.*, 2014). In Zambia, credit products such as short-term and group loans to farmers have proven to shore –up investments and expenditures, consequently increasing agricultural output and revenue by 10% (Fink *et al.*, 2014).

The study by REPOA (2015) accessed on how innovation with financial Institutions is to be adopted to ensure efficient and stable access to financial services by Micro-enterprises, in which this study does not focus on innovation but the study has dictated on contribution effects o financial literacy, formal operating mechanisms of FI's and users of financial services, facilitating financial infrastructures and strong enforcement of rules and regulations governing the operation of financial market and financial institutions to b attained to affordable, adequate and sound financial services. Indeed the focus group of this study was not only micro-enterprises but all involvers in the supply chain, including i) large, medium, small and micro-enterprises ii) the households and firms, iii) the urban population and remote rural population-users iv) the formal and informal users v) the financially literate and ignorant users.

The study by Baregu (2017) focused on access to finance by Agri-firms, different from this study in which agriculture was not the only sector of which economic transformation entails. The study by Mpango (2013) of Tanzania becoming a middle-income state by 2025 by unlocking potentials in which eight (8) issues or commandments were dictated. Still, this study specifically looks at the impacts of financial inclusion towards socio-economic transformation. It was revealed that financial capital accumulation is to be brought through the promotion of financial inclusion. But

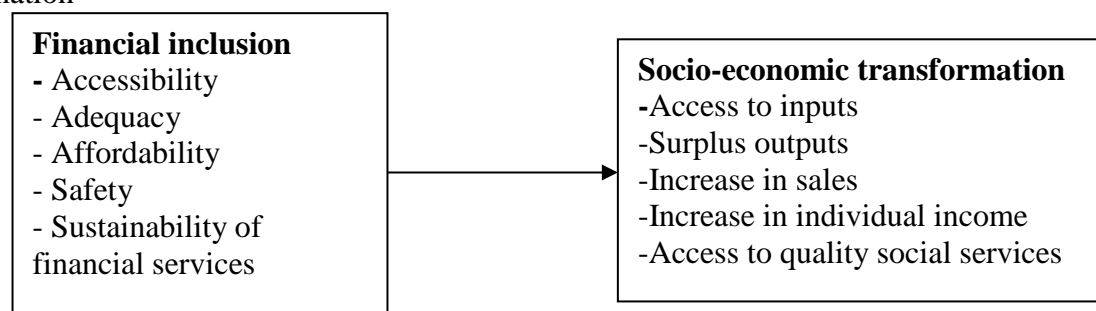
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financial does not only imply being accessed and used to financial services and products rather, to be attained to financial inclusion/deepening is the accessibility to affordable, adequate, quality, safe and sustainable financial services and products.

44% to 55% of SMEs in Tanzania operate in the informal sector (NBS, 2011). In the same line, it has been revealed that most financial Institutions with micro finances, microcredits and savings Associations that operate formally include Kuleana and UPATU. Family members and friends are the main producers and financial service providers to small holders' farmers, processors, households, and the majority of informal micro-enterprises. Less users have access to these services in rural areas than in towns, where the majority of the facilitating financial infrastructures are located. Other areas of difficulty include SMEs, collateral, capacity, and assurances for these informal business customers. Only 17% of formal credit is given to the private sector, only 10% is accessed, and 14% of consumers have bank accounts. Unsustainable financial capital mobilisation is the cause of the dynamics or flotation of return from security markets like the DSE.

Stability, sound and efficient financial sector is still not experienced as 71% of banking financial Institutions provide short-term finance. 61% of cash transactions are conducted outside the banking financial system, showing that most users lack banking behavior. 40% is for systemic intermediation, and Non- Banking Financial Institutions provide 26%. Credits losses, non-performing loans, lack of capacity, aggregation, inflation and the sharp rise in interest rates cause accessibility to be insufficient, adequate and sound for achieving socio-economic transformation. This study adopted three theories/models, which were the Traditional economic theory (Ball & Mankiw, 2011); The Business Correspondent Model (Prabha, 2010) and; the Modern Development Theory (Galor & Zeira, 1993). Three objectives governing the study were i) to examine the predictors of financial inclusion, ii) to explore factors contributing to financial inclusion and iii) to determine the indicators of the social and economic transformation to be achieved through sound and efficient financial inclusion. More about the operationalization of variables was shown in the conceptual framework in figure 1 below

**Figure1:** Conceptual framework of impacts of financial inclusion on socio-economic transformation



**Source:** Arp (2018); Lewis (1954); and Wuytz (2014)

## 2. METHODOLOGY

The study used a quantitative research approach. Also, the study employed a correlation research

design while the study was conducted in Mbarali-Mbeya. The areas such as Igurusi, Chimala and Mlangali were surveyed. The area was chosen as it is popular in growing rice, but to find the majority of users of financial services i.e. small, holders farmers found to face the problem of not being accessed to adequate, affordable and sound financial services/products. The unit of inquiry included all participants in the rice farming supply chain. Indeed the study used a stratified-multistage sampling technique in which 210 respondents of at least 70 were chosen from each street /village, ward or area. Indeed the size of the unit of inquiry was computed by employing a level of confidence = 99%, the maximum error of estimate (E) = 13% and p- value = 0.50 from the formula  $n=p.q(Z\alpha/2/E)^2$ . The study involved financial inclusion (accessibility, adequacy, affordability, safety and sustainability) and socio-economic transformation(defined by access to business inputs, surplus outputs, increase in sales, increase in individual income and access to quality social services). These variables were measured using mixed questionnaires, and the level of measurement used was ordinals. But using the proposals by Knapp (1990), the ordinal scales were then treated as interval scales. That means the study applied questionnaires and review of secondary sources such as Journals, past research theses and dissertations. The collected, edited and cleaned data were analyzed inferentially using the F-test, multiple regression, logit regression and multiple correlation analysis tests with the aid of SPSS version 21.

### 3. RESULTS AND DISCUSSION

#### 3.1 F-test Results Analysis

Under this subtitle, the study aimed to reveal the determination effects of financial inclusion indicators. Financial inclusion is not only about being accessible to financial services but accessibility to adequate, quality and sound financial products that meet the need and objectives of the user. Financial inclusion is a financial deepening that promotes universal access to affordable, adequate, quality, sound and efficient financial products, which is the focus of this study. Contrarily to what was said by Fin Scope (2017), financial inclusion being treated the same as accessibility is not enough to achieve socio-economic transformation (See Table 3 and 4) or simply improvement in social and economic welfare, as shown in Table 3. Table 1 below shows the facts for accessibility, adequacy, low cost, sound and sustainable financial products as indicators of financial inclusion.

**Table 1: F-Test analysis**

Wald test				
Null hypothesis $H_0: FI = A; FI = AD ; FI = AF ; FI= Sa ; FI=S$				
Statistics tests		Value	d.f	p-value
F-tests	A	2.410	(1,209)	0.051
	AD	1.210	(1,209)	0.045
	AF	0.970	(1,209)	0.052
	Sa	0.924	(3,207)	0.047
	Su	1.020	(2,208)	0.050

Sum of Squared Residual  $RSS_A = 1940.564$

Sum of Squared Residual  $RSS_{AD} = 2001.420$

Sum of Squared Residual  $RSS_{AF} = 1861.721$

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Sum of Squared Residual  $RSS_{Sa} = 1765.450$

Sum of Squared Residual  $RSS_{Su} = 1964.740$

A = Accessibility

AD = Adequacy

AF = Affordability

Sa = Safety

**Note:** From  $H_0: d \neq FI$  but because  $H_a \geq 1$  then this is the same as saying  $H_a: d = FI$  for alternative hypothesis ( $H_a$ ) to be accepted where  $H_0$  = null hypothesis; FI=financial inclusion; d= predictors (A, AD,AF, Sa and Su)

The analysis of Table 1 indicates that the accessibility of financial services, as represented by  $F=2.410$ , does not pose a significant challenge, particularly for urban populations in cities and towns. This is due to various financial infrastructures such as corporate banks, bank branches, agent banks, and ATMs in these areas. These findings align with the model proposed by Prabha and Bhist (2010) which emphasizes the role of correspondents in improving financial accessibility. However, the remaining value of  $F=7.59$  highlights a discrepancy addressed in this study.

The value of  $F=2.410$  suggests that access to financial products (A) is primarily concentrated among urban populations, constituting only 32% of the Tanzanian population. On the other hand, the remaining  $F=7.59$  represents the small and disadvantaged user groups, accounting for over 70% of the population. These rural populations face challenges in accessing financial services due to the lack of technological infrastructure. The absence of reliable electricity, telecommunication networks, and internet connectivity hinders the adoption of Mobile Banking and e-banking, including using SIM accounts and mobile applications. The researched area of Mlangali exemplifies these limitations.

Informal operating mechanisms, such as relying on family and friends for financial resources (credits, savings) and informal financial groups like 'Kuleana', contribute to the infeasibility of achieving universal financial accessibility with an  $F$  value =10. These findings are consistent with the report by Brown et al. (2015), which suggests that approximately 51% of micro-finances operate informally. However, it is important to note that an  $F$  value of 2.41, indicating accessibility as a prerequisite for financial inclusion, does not sufficiently define the adequacy, safety, and sustainability of financial services and products needed for social and economic transformation.

The value of financial adequacy ( $AD$ ) = 1.21 indicates that while access to financial services exists, it is insufficient to adequately meet user groups' needs. Achieving adequacy largely depends on effective management practices that differentiate or categorize users based on their needs, capabilities, characteristics, income levels, and collateral. This approach enables the equitable provision of services vertically and horizontally, as Man Kiw and Ball (2011) proposed in traditional economic theory. The theory suggests that the "principle of netting" can be applied when providing financial credits to households (who are both savers and users) and firms (who are only users), allowing households to receive more funds for consumption and investment expenses. Most households do not experience growth due to inadequate access to financial credits. Similarly, smallholders face limitations in acquiring innovative technologies, sufficient capital machinery

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inputs, quality seeds for improved productivity, and agricultural surplus from inadequate access to financial services and credits.

The disparity in the amount of credit accessed by households compared to firms can be attributed to the fact that household businesses are not insured or guaranteed for credit repayment, unlike large formal firms that are financially literate and can monitor credit performance. Informal operating mechanisms and financial illiteracy among smallholder farmers contribute to financial institutions offering high-cost credits to mitigate the expected risks.

The affordability of financial services (AF), as indicated by  $F\text{-value} = 0.97$ , shows a weak significance in relation to its deepening. This is due to the financial illiteracy of the large population of agricultural finance users, who are unable to conduct cost and cost-benefit analyses to choose cost-effective financial services. The study highlights the dilemma of choice and flexibility in accessing low-cost products and the marginal benefits of specific financial services and products. Financial illiteracy among smallholder farmers is evident as they may not even know the formulas used to calculate principal amounts and interest rates, whether in annuity or lump sum payments. In contrast, financially literate customers can calculate the cost of acquiring financial products such as debt ( $K_d$ ) and equity ( $K_e$ ), including shares and savings. Effective computation of financing costs enables users to make informed decisions regarding their financing sources, and the optimal cost is determined through the weighted average cost of capital (WAAC).

The cost-benefit analysis involves evaluating the trade-off between the total cost of capital (debt, equity, or WAAC) and the expected return from investments or production ( $r$ ). The expected/required rate of return is measured using metrics such as payback period, average accounting return (AAR), internal rate of return (IRR), net present value (NPV), and profitability index. Prabha et al. (2013) emphasize training users in financial management basics. However, the high cost of finances/credits may be attributed to high transaction costs resulting from the need to travel long distances in search of financial services. This was revealed by customers from Mlangali and Igurusi who had to travel to Mbeya town or Chimala. However, Chimala still lacks sufficient correspondent services as Bhist and Prabha (2010) proposed in the Business Correspondent Model for accessible and affordable financial services.

The high cost of consumer loans can be attributed to financial institutions' focus on yield to maturity, which requires investments to generate returns within a specific period. Since consumer loans have short repayment periods, they incur higher interest charges. In contrast, investment, business, or agricultural loans tend to have lower interest rates due to the smaller loan amounts. It is crucial to note that financial institutions aim to maximize profits and monitor the performance of loans, which is not accounted for in traditional economic theory. The unaffordability of financial services arises from economic changes, such as increased interest rates, inflation, and exchange rate fluctuations. During such periods, default rates rise, leading to an increase in non-performing loans. Low-income earners, smallholder farmers, and financially illiterate users often face high-cost financial credits while earning less from deposits and savings.



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In additional, the nature of business operations influences the high cost of financial services. Lenders are cautious when lending to unregistered, uninsured, non-licensed, and non-guaranteed users vulnerable to social, legal, and economic shocks. To mitigate risks, financial institutions offer credits at high costs, aiming to operate in a low-risk financial environment and achieve expected returns.

With Safety financial system(Sa) given F-value=0.94, financial inclusion is not solely about accessibility but also about safe money transfer and payment methods. Mobile banking enables electronic withdrawals, deposits, and the settlement of bills such as water bills, electricity bills, and Value Added Tax(VAT). Debit and credit cards allow customers to avoid carrying large amounts of cash. Float or e-money payments have mitigated the risks of robbery and theft associated with cash payments. Mobile banking and wire payments facilitate the storage of value in domestic currency, as holding large amounts of cash is unsafe and can lead to excessive money supply, which is detrimental to the economy. Financial institutions require customers to have bank accounts to control transactions and comply with monetary policy. To address the safety concerns in payment methods (safety over ways of payment, F=0.924), a project or campaign on “Banking Behavior for Economic Stability” should be initiated and implemented. Intelligent Automatic Teller Machines (ATMs) and e-banking innovations, such as SIM accounts and NMB click apps, play a crucial role in ensuring safe money transfers through deposits and withdrawals, as Prabha and Bhist (2010) suggested in the Business Correspondent Model. However, the model fails to address the issues observed in the field, particularly among smallholder farmers in Mlangali. Many of these farmers have not embraced digitization, are unbanked (without bank accounts), and are unfamiliar with wire payments and credit/debit cards for secure transactions. Some of these farmers take pride in holding large amounts of cash, considering it a symbol of wealth.

The sustainability of financial services (Su) with F-value =1.02 indicates unsustainability in financial inclusion. Small-scale firms face inadequate and unsound financial services due to their vulnerability to economic and ecological shocks, as they are often unregistered, unlicensed, and uninsured. Their collaterals are not easily realized or convertible, and the transfer of ownership is complicated due to non-convertible natural land deeds. Un-sustainability may also arise from non-performing credits, defaults, and credit losses. Additionally, changes in microeconomic variables such as exchange rates, inflation, interest rates, and gross domestic product can contribute to the unsustainability of financial services and products. Microfinance institutions, savings and loan associations, and informal financial groups like Kuleana are not reliable and sustainable sources of finance due to their informal operations, information asymmetry, lack of transparency, unfair treatment of users, and high transaction costs. Fluctuations in these factors affect agricultural outputs, sales, access to economic resources, and quality social services. Large-scale firms have an advantage in efficiently allocating financial products to support their businesses, leading to performing loans. Ineffective management of microfinance institutions contributes to the unsustainability of financial deepening.

### **3.2 Multiple Regression Analysis**

This section assesses the factors that enhance financial inclusion, determined by increased accessibility to adequate, low-cost products, low transaction costs, and sound financial services

and products. To achieve this, effective management, innovation, efficient infrastructure, strong enforcement of rules, regulations, and policies, financial literacy, and formal operating mechanisms for both financial service providers and users must be sustained. The findings from the field, as presented in Table 2, support these facts

**Table 2: Regression testing results**

Predictors	Un-standardized $\beta$ coefficients	Standard error	Standardized $\beta$ coefficients	t	p-value
Constant	1.198	0.210	-	0.923	0.010
Me	0.051	0.899	0.053	0.057	0.000
Fi	0.074	0.786	0.071	0.094	0.010
Fl	0.076	0.770	0.075	0.099	0.020
Fb	0.044	0.751	0.047	0.059	0.010
R <sup>2</sup>	0.210				
R <sup>2</sup> adj	0.200				
Observations	210				

**Note:** FI= Financial inclusion, Me=Financial institutions’ management effectiveness/innovation, Fi=Financial infrastructures, Fl=Financial literacy, Fb= Formalization of businesses

**Source:** Field data (2018)

From the structural equation,  $FI = 1.198 + 0.051Me + 0.074Fi + 0.076Fl + 0.04Fb$ , given  $R^2$  value=0.210, indicates a statistical significant and positive association between financial institutions’ management effectiveness/innovation (Me) and financial inclusion (FI) as also evidenced by the  $\beta$  coefficient = 0.053,  $t = 0.057$ , and  $p = 0.000$ . However, despite this positive association, the management effectiveness of financial inclusion was observed not significant from the field. Thus, lack of management effectiveness shows that most financial institutions prioritize risk-taking in maximizing profit without adequately considering customer satisfaction. Financial institutions should adopt an innovation customer-centric approach to address this issue, which involves identifying and fulfilling the diverse needs of customers at different categories. Customer-innovation model requires curbing production of homogeneous financial products through diversification, differentiation, training, and effective credit review, monitoring and administration. By offering more diversified products such as trade finance, mortgage finance, minor credits, agricultural credits, and group loans, as well as implementing differentiated programs with reduced interest rates and increased accessibility, such as wire payments, e-banking, credit cards, debit cards, and intelligent ATMs, financial institutions can create a safe and cost-effective method of transacting. These innovations enable affordable financial services to be accessible even outside of normal banking hours.

The presence of facilitating financial infrastructures (Fi) also exhibits a positive relationship with financial inclusion (FI), as indicated by  $\beta$  coefficient = 0.071,  $t = 0.094$ , and  $p = 0.010$ . That means non sustainability of financial technology infrastructures is the cause of most of remote rural areas in Tanzania such as Mlangali, Mbarali to be financially excluded. Facilitating financial



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infrastructures include bank branches, retail banks, Automatic Teller Machines(ATMs), mobile financial services, and wire payments. Moreover,unsteady availability of internet subscriptions, telecommunication networks, and electricity hampers the support for e-banking and financial transactions in these areas. Mobile banking has emerged as a solution, making financial services more customer-centered and reducing transaction costs associated with traveling long distances, often exceeding 5 kilometers, in search of banking services though in the field area this was an issue to be resolved. It was observed that most banks are concentrated in town areas such as Chimala in the same Mbarali district. But from the significant results shown in Table 2 regarding effect of financial infrastructures on financial inclusion,itshows that availability of facilitating financial services enables easy access to financial services, the facts which are consistent with that by Prabha (2013).

The online registration and account opening process, which can be facilitated through mobile devices such as smartphones and tablets, face significant challenges due to unreliable internet connectivity and telecommunication networks. Additionally, in many remote areas inadequate supply of electricity further hinders these processes because rural population predominantly rely on biomass as their primary source of energy (BoT, 2016). Disadvantageous microenterprises and the remote rural population are most affected by these blocks, as they cannot afford expensive devices like tablets and smartphones. Consequently, they cannot access mobile apps services such as internet banking and online account opening, resulting into higher level of financial exclusion. From 81% of the adult population but only 26% of agro-processors having access to financial products (FSDT, 2016) shows the problem of financial exclusion to be predominant in rural areas. The low percentage of Tanzanian population (14%) with bank accounts does explain why 71% of Tanzanians remain financially excluded (Baregu, 2017). Other factors contributing to this discrepancy include financial ignorance, weak enforcement of regulations governing financial institutions and microfinance, and the informal operating mechanisms of business users who lack insurance coverage. These factors render them vulnerable to various financial risks such as business, liquidity and default risks, further perpetuating financial exclusion.

The impact of credit financing on users is significant due to financial literacy of most users of financial services ( $\beta=0.075$ ,  $t = 0.099$ ,  $p=0.020$ ). These positive and significant results shows that once credits obtained are efficiently budgeted and allocated to business-production activities would enhance performance. Despite of the significant results regarding financial literacy and financial inclusion but from the research field it was revealed that a significant portion of the credits acquired were misallocated and used for consumption purposes such as purchasing food, paying school fees, and settling bills while little invested in productive ventures. This posulates that financial literate users effectively save and appropriately budget their resources to achieve the desired returns. On the other hand, financially illiterate users tend to overlook the importance of planning for working capital and long-term fixed capital. This lack of planning and forecasting skills for potential risks exposes their businesses to variations that hinder them from achieving their targets or expected outputs. Financial ignorant users also neglect the importance of maintaining financial records, such as tracking cash inflows and outflows, which is crucial for the survival and sustainability of their businesses. To address this discrepancy, the study recommends adopting the business correspondent model (RBI, 2010), which emphasizes the importance of

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training and education by establishing financial credit and counseling centers. The RBI further suggests conducting specialized training programs for both internal customers (bankers) and external customers (users). These trainings and education initiatives, focusing on budgeting, efficient use of savings, and deposit management, should start at the grassroots level, including primary schools, to instill financial literacy and the significance of savings and fixed deposit accounts for the better future.

Formalisation of businesses account for positive and significant determinant of financial inclusion given  $\beta=0.047, t=0.059$  at  $p=0.010$ . Often registered and licensed business firms/individuals become financial include. The same fact underscores why informal small enterprises involved in food processing such as (Mamalishe), trading and services provision (such as Bodaboda) are not sound financially included. Informal and less easily identifiable users and businesses face significant barriers in accessing affordable, reliable, and adequate financial products. This is the evidence on why high levels of financial exclusion is among adult informal households (above 15 years of age) and small and medium-sized enterprises (SMEs). Mwombeki's (2017) study on the accessibility of financial services in the agricultural sector revealed that only 29% of formal credit is accessible to farmers. Financial exclusion rates stand at 81% for the adult population and 26.5% for agro-processors, while agri-firms have a slightly higher access rate of 15.9%. This trend in financial inclusion highlights the challenge of achieving socio-economic transformation. Many micro and small firms operate informally, lacking the capacity to run businesses efficiently without collateral, insurance, or guarantees.

Informal operating firms are most susceptible to various shocks and risks from environmental changes (e.g., climate change, disasters, fire outbreaks), economic fluctuations (inflation, high exchange rates, deflation, depreciation), and legal changes (Mannila, 2015). These distortions can lead to unrecoverable losses because the cost of inputs (materials) increases during inflation while the value of domestic currency decreases. These market forces can make informal businesses difficult to offer products to consumers at affordable rate due to inflation therefore reducing purchasing power (Goyal, 2014). Consequently, the expected returns ( $r$ ) are not achieved resulting into increased financial, credit, and default risks (Aizenman, Jinjark & Park, 2016). Moreover, borrowers (business users) may fail to repay their loans on time due to losses incurred in their businesses. Default and credit risks can also arise from interest rate hikes, which moreover lead into significant fluctuations in exchange rates.

### **3.3 Logit Regression**

Under this subheading, the study aimed to assess the latent effects of socio-economic transformation indicators. Socio-economic transformation refers to improving social and economic welfare, which helps individuals escape poverty. Social transformation involves increased access to better social services such as quality education, healthcare, water, transportation, and electricity. Social needs are primarily fulfilled when individuals have access to basic human necessities like food, shelter, and clothing. However, the fulfillment of these social needs is greatly enhanced when individuals are economically prosperous, characterized by increased per capita income, sales revenue, production, investments, savings, and the growth of the agro-processing (industrial) sector, known as economic transformation. The results of the logit regression analysis, which

examined the latent effects of these transformations, are presented in Table 3.

**Table 3: Logit analysis**

N=210	Value	df	P-value
Likelihood ratio	1.301	1	0.42
Pearson X <sup>2</sup>	0.910	1	0.51

**Multinomial:**  $SET = \delta_0 + \delta_1Qty + \delta_2Q + \delta_3So + \delta_4Y + \delta_5Ss + \delta_6Sa + \delta_7C$

$\delta_0$ = Constant

Qty = Surplus outputs

Q = Inputs acquired

So= Increase in sales revenue

Y= Increase in per head income

Ss= improvement in social services

Sa = Domestic savings increase

C= Consumption growth

**Source:** Field data (2018)

Based on the results presented in Table 3, the maximum likelihood value is 1.301 at  $p = 0.42$ , and the Pearson Chi-square is 0.910 at  $p = 0.51$ , indicating a need for test-retest reliability. This finding suggests that the majority of smallholder farmers lack access to financial services, with only a few large-scale farmers, such as Kapunga Farming Company Limited and Raphael Processing Company Limited, having access. Even for those small farmers, processors, and rice traders who do have access, it is insufficient and unaffordable for them to achieve social and economic transformation. The limited access to financial services reveals a clear disparity in marginal physical productivity, surplus agricultural products, sales, and access to quality social services. Higher-income earners, larger farmers, and formally operating and financially literate firms, who have easy access to adequate and sustainable financial services, were able to acquire land measuring 1 acre before and 3.5 acres after continuous access. The amount of fertilizer used per hectare also increased from 1-2 bags of 200kg to 3-4 bags of 200kg.

Prior to accessing adequate financial credit, the yield ranged between 6-10 bags of 250kg. However, after gaining access to adequate, affordable, and sound financial services, the firm was able to harvest 35-45 bags of 250kg per hectare. This demonstrates that if firms, users, households, and smallholder farmers have access to sufficient and low-cost financial credit, their businesses can grow from micro and small to medium and large. Without such access, smallholder farmers will continue to operate at a subsistence level, unable to escape the 48% poverty rate among the rural agricultural population (NBS, 2016).

The logit analysis test revealed a clear distinction. Before using quality seeds, fertilizers, and good agronomic services, with a cost of Tshs80,000 per bag for 6-10 bags, the sales were small, ranging between Tshs.480,000 and Tshs.800,000 per year. This translated to a per capita income of Tshs1,315 to Tshs2,192 per day, which is less than 1 USD (based on an average exchange rate of 1 USD = Tshs2,300 in 2018). However, following access to adequate and sound financial services,

the yield increased to 35-45 bags, resulting in agricultural sales of Tshs2,800,000 to Tshs3,600,000, almost five times the agricultural surplus or sales based on  $\beta$  coefficient experiment 1 and t-test experiment 2. This improvement in sales was also reflected in the per capita income, which increased from Tshs7,671 to Tshs9,863 per day. Additionally, small-scale farmers and processors with at least some access to finances could have 2-3 meals per day (breakfast, lunch, and dinner), whereas before, they could only afford one meal. These discrepancies are further elaborated in Table 4 below

**Table 4: Multiple Correlation of financial inclusion against socio-economic transformation**

<b>Financial inclusion</b>	Pearson correlation	0.08	<b>Socio-economic transformation</b>
	Sig.	0.01	
	N	210	

Based on the findings presented in Table 4, the results obtained from the structural equation given as socio-economic transformation,  $SET = f(A, AD, AF, Sa, Su)$ , indicate a weak association between financial inclusion and socio-economic transformation, as evidenced by Pearson's correlation coefficient of  $r = 0.08$  at  $p = 0.01$ . This study highlights the ongoing challenge of achieving access to adequate, high-quality financial products that are safe and sustainable, which is crucial for socio-economic transformation. The unsatisfactory product-moment coefficient of 0.08, particularly among disadvantaged low-income earners, households, and micro, small, and medium enterprises (MSMEs) can be attributed to the fact that a significant portion of these customer segments operate informally and lack financial literacy, hindering their access to appropriate and reliable financial products. The limited availability of affordable financial products and inefficient financial services further exacerbate the problem, leading to inefficient allocation of resources for business performance. Additionally, various factors contribute to absolute financial exclusion, such as the absence of efficient financial infrastructure, unreliable internet access, electricity shortages, and inadequate telecommunication networks, as reported by FSDT (2016). The non-utilization of e-banking, wire payment, and mobile banking services also plays a role. Furthermore, weak enforcement of rules and regulations governing financial institutions and microfinance institutions contributes to financial exclusion, although this is not the main focus of this study. Given that many micro-enterprises rely on informal micro-credits, loans, and savings associations, the accessibility of long-term, adequate, affordable, and efficient financial services becomes uncertain. Consequently, MSMEs, households, and financially illiterate individuals resort to informal and insufficient savings options and expensive borrowing methods, impeding their ability to achieve socio-economic transformation. This sentiment was echoed by a smallholder farmer who expressed concern over the high-interest rates (ranging from 21% to 27%) associated with the provided credits, making them unaffordable for most smallholder farmers

#### 4. CONCLUSION AND RECOMMENDATIONS

Financial inclusion encompasses the accessibility, adequacy, affordability, and sustainability of financial services. The study identified several factors contributing to financial inclusion, including the innovative management of financial institutions, financial literacy, formal operating mechanisms for businesses, and facilitating financial infrastructures. However, it was found that a significant portion of the Tanzanian adult population, approximately 71%, remains financially

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excluded. This discrepancy can be attributed to the inadequacy, high cost, inappropriateness, and ineffectiveness of the financial products available to users, particularly micro-enterprises, households, and disadvantaged populations in remote rural areas. In light of these findings, the study recommends the implementation of the following measures by all stakeholders involved in the financial sector, including financial institutions, the Central Bank, and policymakers, to address this situation.

The strong enforcement of the Banking and Financial Institutions Act 2006 and its accompanying regulations of 2005 (amended in 2011 and 2010 respectively) is crucial for ensuring the banking and financial sector's stability, integrity, and soundness. This act serves as the primary legislation governing banks and financial institutions, setting out the legal framework for their establishment, operation, and supervision; promoting the Financial Inclusion Policy of 2013 is crucial for enhancing access to financial services for all individuals, especially those who are underserved or excluded from the formal financial system. This policy aims to provide affordable and appropriate financial products and services to promote economic growth and reduce poverty. By implementing this policy, governments can create an enabling environment that encourages financial institutions to reach out to marginalized populations, such as smallholder farmers and low-income households, and offer them various financial services tailored to their needs.

The strong enforcement of the Microfinance Policy framework of 2000 is essential for ensuring the effective functioning of microfinance institutions (MFIs) and safeguarding the interests of both clients and providers. This framework sets out guidelines and regulations for establishing, operating, and supervising MFIs, ensuring transparency, accountability, and responsible lending practices. By enforcing this policy, governments can promote the growth and stability of the microfinance sector, vital in providing financial services to unbanked and underserved populations.

Diversification of financial products is crucial for meeting the diverse needs of individuals and businesses. By offering a wide range of financial products, such as savings accounts, loans, insurance, and investment options, financial institutions can cater to different customer segments and provide them with suitable solutions. Diversification also helps mitigate risks and promotes financial stability by reducing the dependence on a single product or market.

Differentiation of financial programs/products involves tailoring financial services to meet the specific requirements of different customer segments. This approach recognizes that individuals and businesses have varying financial needs, risk profiles, and preferences. By designing and offering specialized financial programs and products, such as agricultural loans for farmers or microloans for small businesses, financial institutions can better serve their target customers and contribute to their financial well-being.

The use of innovative and safe technologies, such as mobile banking, credit cards, and wire payments, is crucial for expanding financial access and improving convenience for customers. These technologies enable individuals to conduct financial transactions securely and efficiently, even in remote areas. Mobile banking, for example, allows individuals to access banking services through their mobile phones, reducing the need for physical bank branches. By embracing such

technologies, financial institutions can reach a wider customer base and provide convenient and cost-effective financial services.

Registering and licensing businesses is an important regulatory measure to ensure the legitimacy and accountability of financial service providers. By requiring businesses to register and obtain licenses, governments can establish a regulatory framework that promotes fair competition, consumer protection, and financial stability. This process helps weed out unscrupulous operators and enhances trust in the financial system, encouraging individuals and businesses to engage in formal financial transactions.

Training on the efficient use of financial products is crucial for empowering individuals and businesses to make informed financial decisions. By providing training programs on budgeting, saving, borrowing, and investment, financial institutions can enhance financial literacy and improve the financial capabilities of their customers. This, in turn, promotes responsible financial behavior and reduces the risk of financial mismanagement.

The provision of financial management education and training goes beyond the efficient use of financial products and focuses on building broader financial skills and knowledge. By offering education and training programs on financial planning, risk management, and entrepreneurship, governments and financial institutions can equip individuals and businesses with the necessary tools to navigate the financial landscape successfully. This can improve financial resilience, wealth creation, and overall economic development.

The government should ensure a steady environment of financial facilitating infrastructures, such as internet connectivity, telecommunication networks, roads, and electricity, in both rural and urban areas. These infrastructures are essential for enabling the delivery of financial services, especially in remote and underserved areas. By investing in developing and maintaining these infrastructures, governments can bridge the digital divide, promote financial inclusion, and support economic growth.

Inventions in agent banking and opening bank branches are important strategies for expanding the reach of financial services. Agent banking involves using authorized agents, such as local shops or post offices, to provide basic financial services on behalf of banks. This approach allows financial institutions to extend their services to areas where establishing physical bank branches may not be feasible. By leveraging agent banking and strategically opening bank branches, financial institutions can enhance their presence and accessibility, particularly in underserved areas.

Enforcement and control of security markets operations are crucial for maintaining the integrity and stability of financial markets. By enforcing regulations and monitoring the activities of market participants, governments can prevent fraudulent practices, insider trading, and other forms of market manipulation. This ensures fair and transparent market operations, protects investors' interests, and fosters confidence in the financial system. Effective enforcement and control mechanisms contribute to the overall stability and development of the financial sector.



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