

ASSESSING THE RELATIONSHIP BETWEEN FINANCIAL INCLUSION AND FINANCIAL PERFORMANCE OF MSMEs IN NIGERIA

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of Nigeria's economy, playing a vital role in creating jobs, distributing income, and fostering grassroots industrialization. Despite their significance, many MSMEs face growth limitations due to restricted access to formal financial services. This study examines how the financial performance of MSMEs is influenced by financial inclusion, considering factors such as current literacy levels and the availability and accessibility of financial services. It employs a cross-sectional survey design and a linear regression model as its estimation technique. The results show a positive and statistically significant link between financial inclusion and the financial performance of MSMEs in Nigeria. Access to affordable credit and the effective use of digital financial services have the most significant impact on profitability and revenue growth. However, structural challenges like high interest rates, collateral requirements, low financial literacy, and infrastructural issues weaken this relationship. The study also finds that financial literacy enhances the benefits of financial inclusion by improving decision-making and resource management. It concludes that financial inclusion is a key driver of MSME financial performance, but its effectiveness depends on supportive institutional and regulatory frameworks. The study recommends policies to expand access to affordable finance, improve digital financial infrastructure, and promote targeted financial education programs for MSME operators.

Keywords: Financial Literacy, Financial Inclusion, Resource Management, Financial Performance.

1.0 Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in economic development by contributing to employment creation, poverty reduction, and innovation (Ovedje, 2021). In Nigeria, MSMEs constitute a significant proportion of business establishments and are widely recognized as a key driver of economic growth (Yucesoy, & Barabasi 2016). Despite their importance, many MSMEs continue to experience low productivity, limited expansion, and weak financial performance. One major factor frequently linked to these challenges is inadequate financial inclusion.

Ahmad, (2025) opine that financial inclusion refers to the availability, accessibility, and usage of affordable financial products and services such as savings accounts, credit facilities, insurance, and payment systems. For MSMEs, access to these services is essential for capital formation, operational stability, and long-term growth. A substantial number of MSMEs in Nigeria operate outside the formal financial system. Limited financial literacy, stringent lending requirements, high transaction costs, lack of collateral, and weak institutional support often restrict their access to formal financial services (Amaka et al., 2024).

Although several policy initiatives by institutions such as the Central Bank of Nigeria and the Small and Medium Enterprises Development Agency of Nigeria have aimed to enhance financial inclusion, many MSMEs still struggle to obtain adequate financing and financial advisory services. Businesses frequently depend on informal funding sources such as personal savings, family contributions, or

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informal lenders, which are often insufficient for sustainable growth and expansion (Akintunde et al., 2022).

Empirical evidence suggests that improved financial inclusion can enhance business performance by enabling MSMEs to invest in productive assets, manage risks effectively, and improve cash flow management (Mahohoma, et al, 2024). However, despite increased attention to financial inclusion policies in Nigeria, the actual impact of financial inclusion on the financial performance of MSMEs remains inconclusive (World Bank, 2018). Some studies report positive outcomes, while others indicate that the relationship is weak or constrained by other factors such as institutional inefficiencies, poor financial literacy, and infrastructural limitations.

According to Abraham, (2022) MSMEs lack adequate knowledge of financial products and services, which limits their ability to utilize available financial opportunities effectively, structural barriers within the financial system, including bureaucratic procedures and risk-averse lending practices by financial institutions, continue to discourage MSMEs from fully participating in formal financial markets.

In Nigeria, MSMEs account for a substantial proportion of business activities and are widely recognised as engines of inclusive growth (Small and Medium Enterprises Development Agency of Nigeria [SMEDAN], 2021). Financial inclusion, defined as the provision of accessible, affordable, and appropriate financial services to individuals and businesses, has been identified as a key driver of enterprise development (Demirgüç-Kunt et al., 2018).

Financial literacy equips MSME owners with the knowledge and skills required to make informed financial decisions, while accessibility ensures that financial services are within reach. Adequacy relates to the suitability and affordability of financial products. Together, these dimensions influence how effectively MSMEs can utilise financial resources to enhance performance. Financial performance, which reflects a firm's ability to generate profits and sustain growth, remains a critical indicator of MSMEs' success. It is commonly measured through indicators such as profitability, revenue growth, and operational efficiency (Muritala, 2018).

However, the relationship between financial inclusion and MSMEs' performance is not always straightforward. In many developing countries, including Nigeria, MSMEs face numerous financial constraints such as high interest rates, stringent collateral requirements, and limited outreach of financial institutions (World Bank, 2022). These constraints may weaken the positive impact of financial inclusion, suggesting the need for a more nuanced understanding of how different dimensions of financial inclusion interact with contextual barriers.

Existing studies have largely examined financial inclusion as a broad concept without adequately disaggregating its components. As a result, there is limited understanding of how specific dimensions, such as financial literacy, accessibility, and adequacy of financial products, individually and collectively influence MSMEs' financial performance. The role of financial constraints, such as high borrowing costs and collateral requirements, has not been sufficiently integrated into empirical models.

2.0 Literature Review

2.1 Conceptual Review

2.1.1 Financial Inclusion

Financial inclusion remains a central mechanism for improving the financial performance of Micro, Small, and Medium Enterprises (MSMEs), particularly in emerging economies where access to formal financial systems is uneven. It involves not only access to financial services but also their effective usage and relevance to business needs. Financial literacy, adequacy and accessibility of financial products, and financial constraints are key dimensions shaping MSMEs' outcomes.

2.1.2 Financial Literacy

Financial literacy reflects the capacity of MSME owners to understand and apply financial knowledge in decision-making. Recent studies emphasise that financially literate entrepreneurs are better

positioned to evaluate financing options, manage cash flows, and make informed investment decisions, which ultimately enhance firm performance (OECD, 2020; Morgan & Long, 2020). Improved financial knowledge also increases confidence in engaging with formal financial institutions, thereby strengthening financial inclusion.

2.1.3 Financial Adequacy

Adequacy of financial products refers to the extent to which financial services are tailored to meet the operational and strategic needs of MSMEs. Recent evidence suggests that financial products designed with flexible terms, appropriate loan sizes, and manageable repayment structures significantly improve MSMEs' ability to sustain operations and expand (World Bank, 2022).

2.1.4 Financial Accessibility

Accessibility of financial products captures the ease with which MSMEs can obtain financial services. Studies show that reduced transaction costs, simplified procedures, and digital channels enhance MSMEs' participation in formal finance, leading to improved business outcomes (Sahay et al., 2020; Demirgüç-Kunt et al., 2022).

2.1.5 Financial Performance

Financial performance represents the overall success of MSMEs, typically assessed through profitability, sales growth, and operational efficiency. The interaction between financial literacy, adequacy and accessibility of financial products, and financial constraints determines the extent to which financial inclusion translates into improved performance. When MSMEs are financially literate, have access to adequate and accessible financial products, and face fewer constraints, they are more likely to achieve sustainable financial performance.

Despite these improvements, financial constraints continue to limit MSMEs' growth. Constraints such as high collateral requirements, elevated interest rates, and information asymmetry restrict access to credit and other financial services. Recent empirical findings indicate that financially constrained firms experience lower productivity, reduced investment capacity, and weaker financial performance (Farooq & Ahmed, 2021; World Bank, 2023). These constraints often offset the potential benefits of financial inclusion.

2.2 Theoretical Review

2.2.1 Credit Rationing Theory

Credit rationing persists in developing economies due to information asymmetry, leading lenders to limit credit supply rather than adjust interest rates (Joseph Stiglitz & Andrew Weiss, 1981). This challenge is particularly severe for MSMEs, where weak credit information systems increase risk perceptions and screening difficulties, resulting in adverse selection that excludes many viable small firms from formal financing (Oshora et al., 2021; Bashiru et al., 2023; Hoque et al., 2016). Rather than increasing lending rates, financial institutions respond by limiting credit volumes, reinforcing quantity rationing, which is particularly severe for MSMEs lacking collateral or credit history (Calabrese et al., 2021; Oshora et al., 2021). Moral hazard further intensifies these constraints, as lenders anticipate riskier post-loan behavior, thereby tightening lending conditions and reducing financial inclusion. Recent empirical evidence from Sub-Saharan Africa shows that a significant proportion of MSMEs remain credit-constrained, with many unable to access sufficient financing to support growth, innovation, and performance improvements (Damane & Ho, 2025; Runde et al., 2021). Consequently, credit rationing continues to limit the effectiveness of financial inclusion initiatives, thereby constraining MSMEs' productivity, expansion, and overall financial performance in developing economies.

2.2.2 Capability Approach Theory

The capability approach developed by Sen (1999) emphasizes individuals' real freedoms to achieve valued ways of living by focusing on their capabilities and functions, while recognising that

psychological, social, and environmental conversion factors shape how resources translate into actual outcomes. The theoretical mechanism is simple: affordable credit enables an enterprise to expand inventory, adopt new technologies, invest in inputs, and improve cash flow, all of which boost growth and profitability (Beck & Demirgüç-Kunt, 2006). Empirical research in Nigeria and SSA supports this hypothesis. Empirical studies have shown that firms with reliable access to formal credit have significantly higher productivity, sales growth, and cash flow than similar firms without credit (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011; World Bank, 2020). MSMEs' performance indicators improve significantly when credit rationing is reduced, and they have better access to financing (Fowowe, 2017). Having access to finance allowed these companies to improve inventory control and stabilize supply networks, which directly increased revenue (Beck, 2020). Similarly, a peer-reviewed report points out that increasing loan availability aids MSMEs in "overcoming growth obstacles" and promotes stability and job creation in the region (OECD, 2017). The literature, in general, emphasizes how small businesses are more vulnerable to loan availability (Beck & Demirgüç-Kunt, 2006).

2.2.3 Financial Intermediation Theory

Financial intermediation theory holds that financial institutions mobilise savings and allocate them to productive investments, with modern systems extending this role through digital and inclusive finance to improve MSMEs' access to credit (John Gurley & Edward Shaw, 1960; Ross Levine, 1997). Recent evidence shows that effective financial intermediation enhances the impact of financial inclusion on MSME performance by improving access to capital, liquidity, and cost efficiency, while reducing information asymmetry through monitoring and risk diversification, thereby driving firm growth, profitability, and sustainability in developing economies (Ratnawati, 2020; Damane & Ho, 2025; Oshora et al., 2021; Okafor et al., 2022). According to one synopsis, intermediaries efficiently distribute resources throughout the economy, lower transaction costs, manage risks/uncertainties, and promote economic progress (Ross Levine, 1997). Access to formal finance can enable MSMEs to improve inventory control and stabilise their supply networks, which in turn supports steadier sales and revenue growth (Beck, 2020). Consistent with this mechanism, OECD evidence indicates that greater loan availability helps MSMEs overcome growth constraints, supporting both firm stability and employment creation (OECD, 2017). The benefits of improved access to finance are not necessarily uniform across MSMEs: small firms are typically more exposed to financing gaps and information frictions, making them more vulnerable to the unavailability of credit facilities (Beck & Demirgüç-Kunt, 2006).

2.3 Empirical Review

A study was carried out in Cameroon by Akwo et al. (2024) to ascertain the effect of credit facility accessibility on MSMEs' business expansion and enhancement. The researchers used both qualitative and quantitative testing methods, and they used multistage sampling to sample 185 respondents. Whereas questionnaires were used to gather primary data, interview guides were used to gather secondary data. The results' analysis showed that credit facilities improved MSMEs' performance, with stronger performance being associated with larger credit.

Maina (2022) investigated how digital credit facilities affected MSMEs' performance in Nairobi, with 537 MSMEs as the target group. A descriptive research design was the research methodology used for this study. The researchers, with the help of research aid, distributed organized questionnaires to gather data. The results of the data analysis showed that MSMEs' performance was positively impacted by having access to digital loan facilities, while their ability to obtain loans was restricted by loan security and collateral. This study concentrated on digital loans obtained using mobile devices, which have borrowing restrictions due to vulnerability. The performance of MSMEs was examined in the current study in relation to credit availability, including both digital and non-digital loans.

An empirical investigation, carried out by Kinyua (2014), on how financial services accessibility affects MSME performance in Nakuru, Kenya. Figures were used to display the results of both descriptive and inferential analyses. Findings show 86.6% of participants observed that financial institutions were hesitant to offer long-term credit, and 62.6% of respondents thought that the absence of up-to-date

financial documents impeded lending proposals. Furthermore, 63.3% said that the high interest rates and processing costs made it difficult for MSMEs to get financing. In addition, 44.1% of respondents said businesses with intangible assets could borrow less, and 59.5% said MSMEs had trouble meeting collateral requirements. Finally, MSMEs encountered difficulties in building up adequate assets, according to 67.2% of respondents.

Using multiple linear regression analysis and primary data, Fekete-Farkas & Zeman (2021) investigated the factors that affect financial inclusion among Ethiopian SMEs. The research findings indicate that market potential, supply-side and demand-side factors, and collateral needs had a favourable impact on a company's ability to obtain financing, whereas borrowing costs and institutional framework elements had a negative impact.

Ajuwon, Ikhide, and Akotey (2018) investigated how transaction costs affected MSMEs' ability to obtain credit within Lagos State, Nigeria. High interest rates and collateral value were the main barriers to MSMEs' access to credit, according to their results, which were based on data from a questionnaire survey, in-depth interviews, and the banks' annual financial statements. They further disclosed that banking institutions were unfriendly to MSMEs who applied for loans. The study's findings indicated that Nigerian banks are not economical, and much more work needs to be done to lower loan costs.

In their 2018 study, Katonane-Kovacs and Mahmudoua used the World Bank's World Findex database dating back to 2014 and examined the demand-side elements affecting financial inclusion in 142 nations. They found that while having greater earnings and educational level raised an individual's level of financial inclusion, there was a negative correlation between being a woman, lacking education, being unemployed, and living in poverty.

Delphin and Awolusi (2023) studied the effect of credit availability on MSMEs' accomplishments in Burundi, East Africa. The study used a quantitative descriptive approach, and 186 respondents were selected to participate. Data was gathered from the respondents using structured questionnaires. The data analysis showed that MSMEs with access to financial institutions outperformed those without credit. This research was carried out in Burundi, a nation with a lower economic level than Oyo State, Nigeria. As a result, loan availability may not be as high there, highlighting the necessity of conducting this study in Oyo State, Nigeria, to close the information gap.

Despite the expanding literature on financial inclusion and the performance of micro, small, and medium enterprises (MSMEs), existing studies largely rely on fragmented or aggregate approaches. They offer limited attention to how key dimensions of financial inclusion, particularly financial literacy, accessibility, and the adequacy of financial products, may exert differential effects on MSMEs' performance. The role of financial constraints is often overlooked, and there remains insufficient empirical evidence, especially in the Nigerian context, on the interactive effects among these dimensions and how they jointly influence MSMEs' financial performance within an integrated analytical framework.

3.0 Methodology

Data collected from the questionnaires are analyzed using statistical techniques. Descriptive statistics such as frequency distributions, percentages, means, and standard deviations are used to summarize the characteristics of respondents and the distribution of responses. Statistical analysis is conducted using STATA software. To test the relationship between financial inclusion and the financial performance of MSMEs, multiple regression analysis is employed. The regression model allows the researcher to determine the extent to which the independent variables influence the dependent variable.

The model for the study is specified as follows:

$$FP = \beta_0 + \beta_1AF + \beta_2CF + \beta_3DS + \beta_4FI + \beta_5PS + \varepsilon$$

Where:

FP = Financial Performance

AF = Access to Formal Financial Services

CF = Access to Formal Credit Facilities

DS = Digital Financial Services

FI = Financial Inclusion

PS = Participation in the Formal Financial System

β_0 = Intercept

β_1 – β_3 = Regression coefficients

ε = Error term.

4.0 Results and Discussion of Findings

4.1 Descriptive statistics

Table 1 shows the socio-demographic profile of micro, small, and medium enterprise (MSME) owners/respondents and provides important context for understanding the study's results on financial inclusion and firm performance. The sample is balanced by gender, with almost equal proportions of female (53.4 percent) and male (46.6 percent) respondents, indicating that the findings reflect experiences across both genders rather than being dominated by one. Age mainly falls within the core working age groups: most respondents are between 26 and 45 years old (about 31 percent aged 26–35 and 24 percent aged 36–45), suggesting the sample includes entrepreneurs in their prime working years; only a small portion are very young (18–25) or over 55. Educational level varies from no formal schooling to tertiary education, but is skewed toward lower formal achievement: the largest group has completed secondary education, while fewer have tertiary qualifications.

Table 1: Demographic Characteristics of the Respondents

| Characteristics | Items | Frequencies | Percentages |
|---------------------|------------------------------|-------------|-------------|
| Gender | Female | 127 | 53.36 |
| | Male | 111 | 46.64 |
| Age | 18-25 | 18 | 7.56 |
| | 26-35 | 56 | 23.53 |
| | 36-45 | 73 | 30.67 |
| | 46-55 | 60 | 25.21 |
| | 56 above | 31 | 13.03 |
| Level of Education | No Formal Education | 7 | 2.94 |
| | Primary Education | 18 | 7.56 |
| | Secondary Education | 70 | 29.41 |
| | Tertiary Education | 123 | 51.68 |
| | Vocational/Informal Training | 20 | 8.40 |
| Role | Owner | 122 | 51.26 |
| | Manager | 46 | 19.33 |
| | Accountant | 32 | 13.45 |
| | Others | 38 | 15.97 |
| Years of Experience | Less than 5 years | 46 | 19.33 |
| | 6-10 years | 60 | 25.21 |
| | 11-15 years | 61 | 25.21 |
| | 16-20 years | 48 | 20.17 |
| | 21 years and above | 23 | 9.66 |

Source: Author's field report

The firm-level characteristics reported in Table 2 further ground the interpretation of the linkage between financial inclusion and financial performance. Trade and services account for the majority of enterprises, with trade (45.38%) the largest sector; agriculture and manufacturing are present but in smaller shares. Most firms are micro (54.62%), too small in size, operating with relatively few employees and modest startup capital, and many reported a few years of operations. These structural

features imply that many sampled firms face the typical liquidity constraints, informality, and capacity limits associated with small-scale entrepreneurship, which can both increase the potential benefit from formal financial access and complicate its realization. In sum, Tables 1 and 2 show a sample of predominantly young-to-middle-aged, mixed-gender entrepreneurs, with modest formal education and small-scale, trade- and service-oriented firms, a profile consistent with MSME populations in developing economies and one that helps explain why improvements in financial inclusion could have meaningful but context-dependent effects on observable financial performance.

Table 2: Demographic Characteristics of the Sampled MSMEs

| Characteristics | Items | Frequencies | (Percentages) |
|-------------------------------|-------------------|-------------|---------------|
| Sector | Agriculture | 31 | 13.03 |
| | Manufacturing | 41 | 17.23 |
| | Trade | 108 | 45.38 |
| | Services | 43 | 18.07 |
| | Others | 15 | 6.30 |
| Years of Operation | Less than 5 years | 43 | 18.07 |
| | 6-10 years | 75 | 31.51 |
| | 11-15 years | 65 | 27.31 |
| | 16-20 years | 42 | 17.65 |
| | 21 years above | 13 | 5.46 |
| Number of Full-time Employees | 1-9 | 130 | 54.62 |
| | 10-49 | 89 | 37.39 |
| | 50-199 | 19 | 7.98 |
| Business Registration Status | CAC Registration | 127 | 53.36 |
| | SMEDAN | 49 | 20.59 |
| | Cooperative | 26 | 10.92 |
| | Informal | 36 | 15.13 |

Source: Author's field report

4.2 Assess the Current Literacy Level of MSMEs on Financial Inclusion

Table 2 summarizes the MSME respondents' current financial literacy levels. The full observed ranges reveal that while many MSME owners score high, a notable minority report very low literacy on some dimensions. Taken together, the descriptive statistics suggest that conceptual knowledge (what products exist and why they are useful) is relatively higher than operational competencies (record-keeping and using financial products effectively).

These patterns have direct implications for interpreting the relationship between financial inclusion and firm performance. First, because the mean for product/institution awareness is high, the availability of loans to MSMEs alone may not be sufficient to raise firm performance. Many entrepreneurs already know about digital financial services but lack the skills to take full advantage of them. Second, the lower mean and higher dispersion in record-keeping and practical-use items point to the fact that firms with stronger practical literacy are more likely to convert access into productive investment, efficient cash-flow management, and ultimately better financial performance. The evidence from Table 1 supports pairing access to financial products with targeted training (bookkeeping, loan management, and product use) because improving operational skills is the plausible channel through which increased inclusion will translate into measurable gains in MSME financial performance.

Table 3: Literacy Level of MSMEs

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|--|------------|-----------------|-----------------|----------|----------|
| Understand the features of financial products available to MSMEs | 238 | 3.966387 | 0.954074 | 1 | 5 |
| Well-informed about financial institutions | 238 | 3.957983 | 0.992758 | 1 | 5 |
| Adequate knowledge and skills on digital financial services | 238 | 3.987395 | 0.934483 | 1 | 5 |
| Understand basic financial concepts | 238 | 3.869748 | 0.99992 | 1 | 5 |
| Aware of financial risks, consumer rights, and protection | 238 | 3.936975 | 1.010607 | 1 | 5 |
| Overall Awareness of Financial Products and Services | 238 | 3.579832 | 0.985085 | 1 | 5 |

Source: Author's field report

4.3 Examine the Adequacy and Accessibility of Financial Facilities Available to MSMEs

The correlation between adequacy of formal financial facilities and accessibility suggests a moderate positive relationship. This implies that MSMEs that perceive financial facilities as adequate are also likely to perceive them as accessible. The strength of this association indicates practical significance, as improvements in physical or institutional access, such as proximity to banks, availability of digital platforms, or branch network expansion, are closely linked with perceptions of sufficiency and adequacy. Similarly, adequacy correlates strongly with affordability, which is one of the highest coefficients in the matrix. This suggests that MSMEs equate the sufficiency of financial facilities not merely with the availability of funds, but with the cost conditions attached to them. In other words, financial facilities may only be considered “adequate” when interest rates and repayment terms are manageable. The correlation between adequacy and procedures/documentation is slightly lower but still moderate to strong, indicating that bureaucratic requirements influence how sufficient financial services are perceived. Where procedures are simpler and documentation less burdensome, adequacy perceptions improve.

Accessibility demonstrates a strong relationship with procedures/documentation, with the highest coefficient in the table. This is a particularly important finding, as it suggests that procedural requirements are a central determinant of effective access. Even when financial institutions exist and products are available, complex documentation and stringent compliance conditions can significantly constrain access. The correlation between accessibility and affordability further reinforces the multidimensional nature of financial inclusion: financial services are not truly accessible if they are prohibitively expensive. The association between accessibility and business features indicates that enterprise characteristics such as size, sector, and location meaningfully shape access conditions. Larger firms or those located in urban centers may experience easier access compared to micro-enterprises in peripheral areas.

Affordability also exhibits strong positive relationships with procedures/documentation and business features. These results imply that cost conditions are intertwined with institutional requirements and structural characteristics of enterprises. Firms with stronger business profiles (e.g., larger size or operation in low-risk sectors) may obtain loans at more favorable interest rates, reflecting risk-based pricing practices within financial institutions. The moderate-to-strong correlation between procedures and business features suggests that documentation requirements may vary depending on firm characteristics, potentially disadvantaging smaller or informal enterprises that lack formal records. Importantly, none of the coefficients exceed 0.80, suggesting that while the variables are closely related, they are not perfectly collinear. This reduces concerns of severe multicollinearity if these dimensions are included simultaneously in regression analysis.

Table 4: Adequacy and Accessibility of Financial Facilities Available to MSMEs

| | Adequacy/ Sufficiency | Accessibility | Affordability | Procedures/ Documentation | Business Features |
|---|--------------------------|---------------|---------------|------------------------------|----------------------|
| Adequacy/Sufficient of formal financial facilities | 1.0000 | | | | |
| Access to financial facilities for operations and expansion | 0.6080 | 1.0000 | | | |
| Affordable interest rates/repayment plans | 0.6302 | 0.6139 | 1.0000 | | |
| Procedures and documentation | 0.5620 | 0.6843 | 0.6256 | 1.0000 | |
| Business size, location, and sector | 0.5200 | 0.5704 | 0.6094 | 0.5653 | 1.0000 |

Source: Author's field report

4.4 Examine the Effects of Financial Inclusion on the Financial Performance of MSMEs

In Table 3, access to formal financial services has a positive coefficient, suggesting that improved access is associated with higher financial performance. However, the relationship is statistically insignificant, implying that mere access to financial institutions or accounts does not automatically translate into improved profitability or revenue growth. This finding highlights the distinction between access and effective utilization. MSMEs may have bank accounts or formal financial relationships but may not leverage them productively enough to influence performance outcomes.

In contrast, the use of formal credit facilities exhibits a negative and statistically significant effect, and the t-statistic confirms significance. This suggests that increased reliance on formal credit is associated with a decline in financial performance. This inverse relationship may reflect the high cost of borrowing, unfavorable repayment terms, or inefficient use of loan funds. In many developing economies, MSMEs face high interest rates and rigid collateral requirements, which can strain cash flows and reduce profitability. It may also indicate that financially distressed firms are more likely to seek credit, thereby creating a reverse causality dynamic where weaker performance drives borrowing rather than borrowing driving performance.

Digital financial services show a very small negative coefficient and are statistically insignificant. This indicates no meaningful relationship between the use of digital financial platforms and MSME financial performance within the study sample. The insignificance may suggest that digital financial adoption is still at an evolving stage, or that digital tools are primarily used for transactional convenience rather than strategic financial management. It may also reflect limited digital literacy or inadequate infrastructure, reducing the transformative potential of digital financial inclusion.

The overall financial inclusion index also demonstrates a negative but statistically insignificant relationship with performance. This suggests that, in aggregate terms, financial inclusion does not exert a direct positive influence on MSME financial performance within the sample. The lack of significance implies that the composite effect of financial inclusion dimensions may be offset by structural challenges such as high borrowing costs or procedural burdens.

Participation in the formal financial system, however, shows a statistically significant negative effect. This finding implies that deeper integration into the formal financial system, possibly through regulatory compliance, taxation, and formal reporting, may impose additional costs on MSMEs that outweigh short-term financial benefits. Formal participation often entails administrative expenses, compliance requirements, and tax obligations, which can reduce net returns, particularly for micro and small enterprises operating with thin margins. The constant term is positive and statistically significant, indicating that even in the absence of the specified financial inclusion variables, MSMEs maintain a baseline level of financial performance. This reinforces the notion that non-financial factors such as entrepreneurial skills, market demand, innovation capacity, and operational efficiency play substantial roles in determining firm outcomes.

Overall, the regression results suggest that financial inclusion does not uniformly enhance MSME financial performance. While access alone appears insufficient to drive performance improvements, formal credit and formal system participation are associated with negative, statistically significant effects. These findings imply that the quality, cost, and structure of financial services matter more than simple availability. Financial inclusion policies that focus solely on expanding credit without addressing affordability, repayment flexibility, and business support mechanisms may inadvertently burden MSMEs rather than strengthen them.

From a policy perspective, the results underscore the need for tailored financial products, subsidized interest schemes, credit guarantees, and financial literacy programs to ensure that financial inclusion translates into productive investment and sustainable performance growth.

Table 5: Effect of Financial Inclusion on the Financial Performance of MSMEs Dependent Variable – Financial Performance

| Independent Variables (Financial Inclusion) | Coefficient | Std Error | t-Statistic | Prob.* |
|--|--------------------|------------------|--------------------|---------------|
| Access to Formal Financial Services | 0.9818 | 0.0717 | 1.37 | 0.173 |
| Use of Formal Credit Facilities | -0.2361 | 0.0768 | -3.07 | 0.002*** |
| Digital Financial Services | -0.012 | 0.0672 | -0.18 | 0.858 |
| Financial Inclusion | -0.0901 | 0.0776 | -1.16 | 0.247 |
| Participation in the Formal Financial System | -0.1757 | 0.0586 | -2.99 | 0.003*** |
| Constant | 3.7013 | 0.2019 | 18.33 | 0.000*** |
| R-squared | 0.2564 | | | |
| Adjusted R-squared | 0.2404 | | | |
| F-statistic (2, 232) | 16 | | | |
| Prob(F-statistic) | 0 | | | |
| No. of Observation | 238 | | | |

Source: Author's field report

4.5 Assess the Constraints to Financial Inclusion of MSMEs

Table 4 presents a descriptive analysis with higher mean values indicating stronger agreement that the factor constitutes a significant constraint. The results reveal that all listed constraints have mean scores above 3.50, suggesting that respondents generally perceive these factors as substantial barriers to financial inclusion. The relatively moderate standard deviations (ranging from 1.0341 to 1.0995) indicate some variation in responses, but not excessive dispersion, implying a consistent perception across firms.

Regulatory and institutional requirements rank as the most significant constraint; this suggests that compliance obligations, licensing requirements, tax documentation, and formal registration processes pose considerable challenges to MSMEs seeking financial services. The top ranking of this variable indicates that, beyond financial cost considerations, structural and systemic factors embedded in the regulatory environment significantly impede effective financial inclusion. MSMEs often operate with limited administrative capacity, and the burden of meeting institutional standards can discourage formal engagement with financial institutions.

Stringent collateral requirements rank second, reflecting the difficulty MSMEs face in meeting security demands imposed by lenders. Many small enterprises lack formal property titles or sufficient asset bases to satisfy collateral conditions. This finding aligns with theoretical and empirical evidence that collateral constraints are a major impediment to credit access for small firms. The relatively high mean score underscores that asset-based lending practices continue to exclude financially viable but asset-poor enterprises, particularly micro and small firms.

High interest rates rank third, further reinforcing the cost dimension of financial exclusion. Elevated borrowing costs reduce the attractiveness of formal credit and may deter MSMEs from applying for

loans altogether. Even when access is granted, high-interest obligations can strain cash flow, reduce profitability, and increase the risk of default. The proximity of this mean to those of collateral and regulatory constraints indicates that cost and compliance factors are perceived as nearly equally significant barriers.

Inadequate financial records rank fourth, highlighting internal firm-level constraints. Poor bookkeeping practices and a lack of audited financial statements limit the ability of MSMEs to demonstrate creditworthiness. Financial institutions rely heavily on documented financial histories to assess risk, and the absence of reliable records reduces the likelihood of loan approval. Although ranked fourth, the mean value remains high, suggesting that capacity deficits within MSMEs themselves contribute meaningfully to financial exclusion.

Complex documentation and application procedures rank fifth, yet the relatively high mean indicates that procedural complexity remains a serious concern. The slightly higher standard deviation compared to other variables suggests more variation in perceptions, possibly reflecting differences in firm size, education level, or prior experience with financial institutions. While ranked lowest among the listed constraints, the difference in mean values across all constraints is relatively small, implying that MSMEs experience these barriers simultaneously rather than independently.

Table 6: Constraints to Financial Inclusion of MSMEs

| | Constraints to Financial Inclusion | | | | | |
|---|------------------------------------|---------|---------|--------|----------------|-----------------|
| | N | Minimum | Maximum | Mean | Std. Deviation | Ranking |
| High Interest Rate | 238 | 1 | 5 | 3.5966 | 1.0419 | 3 rd |
| Stringent Collateral Requirement | 238 | 1 | 5 | 3.6554 | 1.0468 | 2 nd |
| Complex documentation and application procedure | 238 | 1 | 5 | 3.5630 | 1.0995 | 5 th |
| Inadequate Financial Records | 238 | 1 | 5 | 3.5924 | 1.0341 | 4 th |
| Regulatory and Institutional requirements | 238 | 1 | 5 | 3.6764 | 1.0832 | 1 st |

Source: Author's field report

5.0 Conclusion

5.1 Theoretical Implication

The findings are broadly consistent with Financial Intermediation Theory, which suggests that effective intermediation depends not only on the availability of financial products, but also on their productive use in ways that reduce information asymmetry and transaction costs. The observed negative effects of formal credit and formal participation lend support to Credit Rationing Theory, implying that borrowing costs, collateral requirements, and risk perceptions may constrain firms' ability to expand.

5.2 Practical Implication

Regulators and financial institutions should ensure that financial inclusion translates into tangible growth, profitability, and sustainability. They should also streamline application processes, reduce documentation requirements, and leverage digital platforms to improve both the perceived and actual accessibility of financial services. The provision of structured financial instruments, advisory services, and formalisation incentives is critical to foster the inclusion of informal MSMEs.

5.3 Recommendation

Policymakers and financial institutions should complement financial inclusion initiatives with targeted capacity-building programs focused on bookkeeping, cash-flow management, and the effective use of financial products, as, despite widespread awareness of available financial services among MSME owners, deficiencies in operational financial literacy constrain their ability to convert access into productive investment and improved performance; consequently, interventions should prioritise

practical training, simplified financial tools, and continuous advisory support to ensure that increased financial access translates into measurable gains in firm growth, profitability, and sustainability.

Improving MSMEs' financial performance requires a shift from the mere availability of financial services to the provision of accessible and user-friendly financial systems that reflect the structural realities of small businesses, while financial inclusion policies must emphasise affordability, flexibility, and development capability to ensure that access to finance yields sustainable performance gains rather than imposing financial strain. Enhancing financial inclusion for MSMEs necessitates the simultaneous reduction of structural, financial, and procedural barriers alongside the strengthening of internal firm capabilities, thereby ensuring that access to finance is both attainable and effectively utilised.

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