

The Impact of Financial Literacy, Inclusion, And Access on Msme Growth and Welfare in North Sumatra: A Mediating Role of Business Growth

Zulkifli Ikhwan Harahap¹, Satia Negara Lubis², Erlina³, Evawany Yunita Aritonang⁴

Abstract

This study examines the impact of financial literacy, financial inclusion, and financial access on the growth and welfare of Micro, Small, and Medium Enterprises (MSMEs) in North Sumatra, Indonesia, with business growth acting as a mediating factor. Using a quantitative research design and Structural Equation Modeling (SEM) analysis, data were collected from 306 MSME operators selected via purposive sampling. The findings reveal that while financial literacy does not have a significant direct effect on MSME growth and welfare, both financial inclusion and financial access significantly enhance business growth and welfare. Furthermore, business growth serves as a mediating variable, amplifying the positive effects of financial inclusion and access on MSME welfare. The results indicate that MSMEs benefit from better access to formal financial services, such as credit and insurance, which facilitates business expansion and improves the overall welfare of business owners. However, the lack of significant impact from financial literacy suggests that practical financial education initiatives should be paired with improved access to capital and market opportunities. This study highlights the need for integrated policy efforts to enhance financial literacy, expand financial inclusion, and provide easier access to credit to foster MSME growth and welfare in North Sumatra.

Keywords: *Msmes, Financial Literacy, Financial Inclusion, Financial Access, Business Growth, Welfare, North Sumatra, Structural Equation Modeling (SEM).*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) have consistently served as key drivers of economic growth, particularly in developing countries like Indonesia (Widita et al, 2024). Their contributions to job creation, poverty alleviation, and improved welfare are well-documented (Safitri, 2022). In North Sumatra, MSMEs contribute significantly to the regional economy. However, the challenge of enhancing MSME welfare remains a pressing issue, particularly due to limited financial literacy and restricted access to formal financial services (Sutarsih, 2023; Aqida, 2019; Adriani & Wiksuana, 2018). This is consistent with broader findings in regional development studies, which indicate that inadequate resource allocation can impede the success of local empowerment initiatives, such as dengue prevention programs in Pekanbaru (Arga Abdi Rafiud Darajat Lubis et al., 2024).

Financial literacy, which encompasses the ability to understand and apply financial information effectively, plays a crucial role in the sustainability of MSMEs (Bottazzi & Lusardi, 2021). MSME operators who possess a higher degree of financial literacy are better equipped to manage resources, reduce financial risks, and make informed decisions to ensure business longevity (Sanistasya, Rahardjo & Iqbal, 2019). In contrast, low financial literacy can exacerbate vulnerability, resulting in poor business performance and an increased risk of failure (Klapper & Lusardi, 2020). As studies on housing development growth in Asahan have shown, understanding the dynamics of resource allocation is critical in minimizing adverse socio-economic impacts such as job displacement and social stratification (Eko Suharizki et al., 2024).

Financial inclusion, particularly the ability to access formal financial services like savings and credit, is another essential component in MSME development (Tay, 2022). Studies have demonstrated that better access to financial services correlates with enhanced business growth and competitiveness (Adriani & Wiksuana, 2018). However, in regions like North Sumatra, financial inclusion is often limited, especially in rural areas where banking services are sparse (Safitri, 2022). Such gaps in inclusion parallel findings in other

¹ Rural Area and Development Program, Universitas Sumatera Utara, Medan, Indonesia

² Rural Area and Development Program, Universitas Sumatera Utara, Medan, Indonesia, Email: Satia.negara@usu.ac.id, (Corresponding Author)

³ Rural Area and Development Program, Universitas Sumatera Utara, Medan, Indonesia.

⁴ Rural Area and Development Program, Universitas Sumatera Utara, Medan, Indonesia

sectors, such as the implementation of housing assistance programs in Subulussalam, where limited resources and poor coordination hinder the program's success (Masrizal et al., 2024).

Access to financial services, particularly credit, remains a crucial determinant of MSME success. Without adequate access to capital, businesses struggle to scale their operations, innovate, or sustain their activities in the face of economic challenges (Amadasun & Mutezo, 2022; Okello et al., 2017). This mirrors the challenges faced by coffee farmers in Pematang Sidamanik, where infrastructure and institutional support play a pivotal role in income generation, while government policies show limited influence (Turma et al., 2024). Thus, financial access can significantly enhance both income and operational capacity in MSMEs, fostering overall welfare improvements.

The relationship between financial literacy, inclusion, and access and MSME welfare has been extensively studied, with strong evidence of positive outcomes when these factors are optimized (Fitria, 2019; Aqida & Fitria, 2019). For instance, financial inclusion has been shown to enhance business growth by providing the capital necessary for expansion, as observed in other regions where sustainable land management practices have enabled community growth and infrastructure development (Abdul et al., 2024). Nevertheless, in North Sumatra, understanding how these financial factors interact with business growth to affect MSME welfare remains underexplored.

This study addresses this gap by investigating the role of financial literacy, inclusion, and access in improving MSME welfare, with business growth as a mediating factor. The study employs Structural Equation Modeling (SEM) to test the hypothesis that these financial factors significantly impact MSME welfare, directly and indirectly, through business growth (Okello et al., 2017). Similar approaches have been utilized in sustainable development research, such as studies on ecotourism in Sei Nagalawan, where community empowerment through the creative economy and institutional support were identified as key drivers of success (Anisah, 2024).

The relevance of financial literacy and inclusion to MSME success is underscored by numerous studies highlighting the importance of knowledge in navigating financial challenges (Bottazzi & Lusardi, 2021). However, the mere presence of financial literacy is often insufficient unless coupled with accessible financial services and support. Research on sustainable agricultural practices in Angkola Sangkunur highlights how a combination of technical skills, institutional support, and financial access can create substantial benefits for rural development (Arga et al., 2024).

In North Sumatra, where MSMEs often operate under financial constraints, improving access to formal financial services remains a critical intervention (Dela Cruz, et al 2023). This study hypothesizes that financial inclusion and access will significantly enhance MSME growth and welfare, as supported by previous findings in rural development and infrastructure improvement projects (Turma et al., 2024). Access to resources has been shown to empower communities and businesses alike, contributing to broader socio-economic gains.

In conclusion, this research seeks to contribute to the theoretical understanding of how financial literacy, inclusion, and access influence MSME welfare, while providing practical recommendations for policymakers. Aligning with similar regional development studies, such as those addressing food security and sustainable practices in Medan, this research aims to offer insights that will support the creation of resilient MSMEs, capable of driving regional growth and improving socio-economic outcomes (Muliadi et al., 2024).

Research Method

Research Design

This study employs a quantitative approach with an explanatory research design to examine the relationships between financial literacy, financial inclusion, financial access, business growth, and MSME welfare in North Sumatra. Explanatory research is particularly well-suited for testing hypotheses that seek

to establish cause-and-effect relationships between variables (Basha Bennisr & Goaid, 2023). Given the complexity of the variables involved, including both direct and indirect effects, the use of Structural Equation Modeling (SEM) allows for a robust analysis of the interactions between the variables (Lubis et al., 2023). This approach has been similarly applied in other regional studies, such as the evaluation of sustainable empowerment strategies in ecotourism development (Noor et al., 2022).

Population and Sample

The population for this study consists of MSMEs registered in North Sumatra Province. According to the North Sumatra Cooperative and MSME Office (2023), there are approximately 1,712,091 MSMEs operating in the region. A purposive sampling technique was employed, selecting 306 respondents based on specific criteria: businesses must have been in operation for at least three years, and respondents must have prior experience utilizing formal financial services (Safitri & Permadi, 2022). This sampling method ensures the selection of businesses most likely to benefit from the financial mechanisms being studied, similar to the approach used in evaluating housing development growth in Asahan, where socio-economic impacts were linked to land use transitions (Eko Suharizki et al., 2024).

Types and Sources of Data

The research relies on both primary and secondary data. Primary data were collected through a structured questionnaire distributed to MSME operators, focusing on their perceptions of financial literacy, financial inclusion, and financial access. The questionnaire items were adapted from validated instruments used in prior studies on financial literacy and MSME performance (Bottazzi & Lusardi, 2021). Secondary data were obtained from reports published by the North Sumatra Cooperative and MSME Office, the Financial Services Authority (OJK), and the Central Bureau of Statistics (BPS). This method parallels approaches taken in studies assessing the role of government policies in agricultural development, such as those examining the impact of coffee farmer institutions in Simalungun (Türma et al., 2024).

Research Variables and Indicators

The study focuses on five main variables: **Financial Literacy**, **Financial Inclusion**, **Financial Access**, **Business Growth**, and **MSME Welfare**. These variables were operationalized as follows:

- *Financial Literacy*: Measured using indicators related to financial knowledge, financial behavior, and financial attitudes (Bottazzi & Lusardi, 2021).
- *Financial Inclusion*: Assessed based on access to formal banking services, insurance products, and financing options (Adriani & Wiksuana, 2018; Sanistasya, Rahardjo & Iqbal, 2019).
- *Financial Access*: Measured through ease of obtaining credit, knowledge of financing sources, and usage of formal financial services (Amadasun & Mutezo, 2022; Okello et al., 2017).
- *Business Growth*: Evaluated by tracking changes in revenue, employee numbers, and business assets (Türma et al., 2024).
- *MSME Welfare*: Measured by improvements in personal income, quality of life, and financial stability of the business operators (Lubis et al., 2023).

Data Collection Instrument

The primary data collection tool was a structured, closed-ended questionnaire using a 5-point Likert scale. Respondents were asked to rate their level of agreement with statements related to each research variable. This approach mirrors methods employed in similar studies that assess the socio-economic impact of regional development programs, such as the Self-Help Housing Assistance Program in Subulussalam

(Masrizal et al., 2024). The questionnaire was pre-tested to ensure validity and reliability, using instruments that have been widely applied in the field of financial literacy and MSME development.

Data Analysis Technique

The data were analyzed using Structural Equation Modeling (SEM) with the SmartPLS software. SEM is particularly effective in analyzing complex relationships between multiple variables, including both direct and mediated effects. This method was chosen because it allows for a comprehensive analysis of how financial literacy, inclusion, and access interact with business growth to influence MSME welfare. Previous studies have successfully employed SEM to explore similar relationships, such as the impact of sustainable food systems on regional development (Muliadi et al., 2024). Key steps in the data analysis include:

- *Validity and Reliability Tests:* Outer loading values, Average Variance Extracted (AVE), and Composite Reliability (CR) were used to assess the validity and reliability of the constructs. Variables with an outer loading above 0.70 were considered valid.
- *Structural Model Testing:* The model's explanatory power was assessed using R-square values for the dependent variables. The significance of relationships between variables was tested using t-statistics and p-values, with results indicating whether hypotheses were accepted or rejected (Okello et al., 2017).
- *Hypothesis Testing:* Both direct and indirect effects were tested to determine the mediation role of business growth in the relationship between financial literacy, inclusion, access, and MSME welfare (Tiurma et al., 2024).

Data Quality Testing

The validity and reliability of the research instrument were evaluated through two stages: **validity testing** using outer loading values and **reliability testing** using Cronbach's Alpha and Composite Reliability (CR). A variable was considered valid if its outer loading exceeded 0.70. Reliability was confirmed if CR values were above 0.70, indicating that the instrument was consistent and reliable (Klapper & Lusardi, 2020). This approach is similar to the methods employed in analyzing the efficacy of regional development programs, such as those used in the implementation of the "one house one jumantik" initiative in Pekanbaru (Arga Abdi Rafiud Darajat Lubis et al., 2024).

Research Ethics

The study adhered to ethical research standards by ensuring that participants' personal data remained confidential and that respondents participated voluntarily. Informed consent was obtained from all participants prior to data collection. The research followed established guidelines to ensure that ethical considerations were upheld throughout the study, similar to the ethical practices applied in community-based tourism development research.

Results and Discussions

Overview of MSMEs in North Sumatra

MSMEs in North Sumatra serve as the backbone of the regional economy. Data collected through questionnaires, supplemented by secondary sources from the North Sumatra Cooperative and MSME Office, show that MSMEs are distributed across various sectors. These sectors include trade, agriculture, fisheries, and manufacturing. Most MSMEs operate as micro-enterprises, typically family-run, and contribute significantly to local employment. Table 3.1 illustrates the sectoral distribution of MSMEs in North Sumatra.

Table 3.1. MSME Sector Distribution in North Sumatra

Sector	Percentage of MSMEs	Description
Trade, Hotels, and Restaurants	33.99%	Operate in traditional and modern markets
Agriculture, Livestock, Forestry, Fisheries	11.44%	Focus on local commodities
Manufacturing	47.06%	Includes small-scale and home-based industries
Services	7.52%	Includes healthcare, beauty services

Most MSMEs in the agricultural sector focus on local commodities such as rice, corn, and fruits, while the trade sector dominates with many businesses operating in both traditional markets and e-commerce platforms. Additionally, MSMEs in the fisheries and forestry sectors engage in sustainable practices such as fish farming and forest resource management.

Profile of Respondents

This study involved 306 MSME operators selected through purposive sampling from various districts in North Sumatra. The majority of respondents are engaged in manufacturing. Demographic data indicate that most MSME operators are women (67.32%) and are over the age of 40 (45.75%).

Table 3.2. Respondent Demographic Profile

Category	Frequency	Percentage (%)
Gender		
Male	100	32.68%
Female	206	67.32%
Age		
21-30 years	31	10.13%
31-40 years	135	44.12%
>40 years	140	45.75%
Education		
High School or equivalent	156	50.98%
Diploma (D3)	125	40.85%
Bachelor's Degree (S1)	25	8.17%

Most respondents have operated their businesses for more than six years, reflecting their stability and experience in navigating various challenges. This is further highlighted by the fact that a majority are involved in manufacturing and trade.

Description of Research Variables

The study measured five primary variables: financial literacy, financial inclusion, financial access, business growth, and MSME welfare. Each variable was assessed using a closed-ended questionnaire designed to gauge respondents' perceptions and knowledge of each variable.

Table 3.3. Statistical Description of Research Variables

Variable	Mean	Std. Dev	Category
Financial Literacy	3.75	0.82	Good
Financial Inclusion	4.10	0.79	Good
Financial Access	3.95	0.85	Good

Business Growth	3.88	0.81	Good
Welfare	4.05	0.76	Very Good

Descriptive results show that MSME operators' financial literacy levels are rated as "Good," with an average score of 3.75. Financial inclusion and access are also rated as "Good," with mean scores of 4.10 and 3.95, respectively. Business growth and welfare indicators reflect similarly positive ratings, with mean scores of 3.88 and 4.05.

Validity and Reliability Tests

To ensure the research instruments' validity and reliability, tests were conducted using outer loading for validity and Cronbach's Alpha and Composite Reliability for reliability. The results show that all indicators meet the criteria for validity and reliability.

Table 3.4 Outer Loading Values

Item	Financial Access	Financial Inclusion	Welfare	Financial Literacy	Business Growth	Remarks
AK1	0.750					Valid
AK10	0.658					Invalid
AK2	0.724					Valid
AK3	0.729					Valid
AK4	0.765					Valid
AK5	0.717					Valid
AK6	0.741					Valid
AK7	0.648					Invalid
AK8	0.663					Invalid
AK9	0.684					Invalid
IK3		0.732				Valid
IK4		0.713				Valid
IK5		0.750				Valid
IK6		0.703				Valid
IK7		0.737				Valid
IK8		0.725				Valid
KS2			0.776			Valid
KS3			0.725			Valid
KS4			0.735			Valid
KS5			0.682			Invalid
KS6			0.734			Valid
KS7			0.748			Valid
KS8			0.702			Valid
LK1				0.794		Valid
LK2				0.768		Valid
LK3				0.701		Valid
LK4				0.731		Valid
LK5				0.796		Valid
LK6				0.744		Valid
PU1					0.768	Valid

PU2					0.742	Valid
PU3					0.761	Valid
PU4					0.738	Valid
PU5					0.630	Invalid
PU6					0.713	Valid

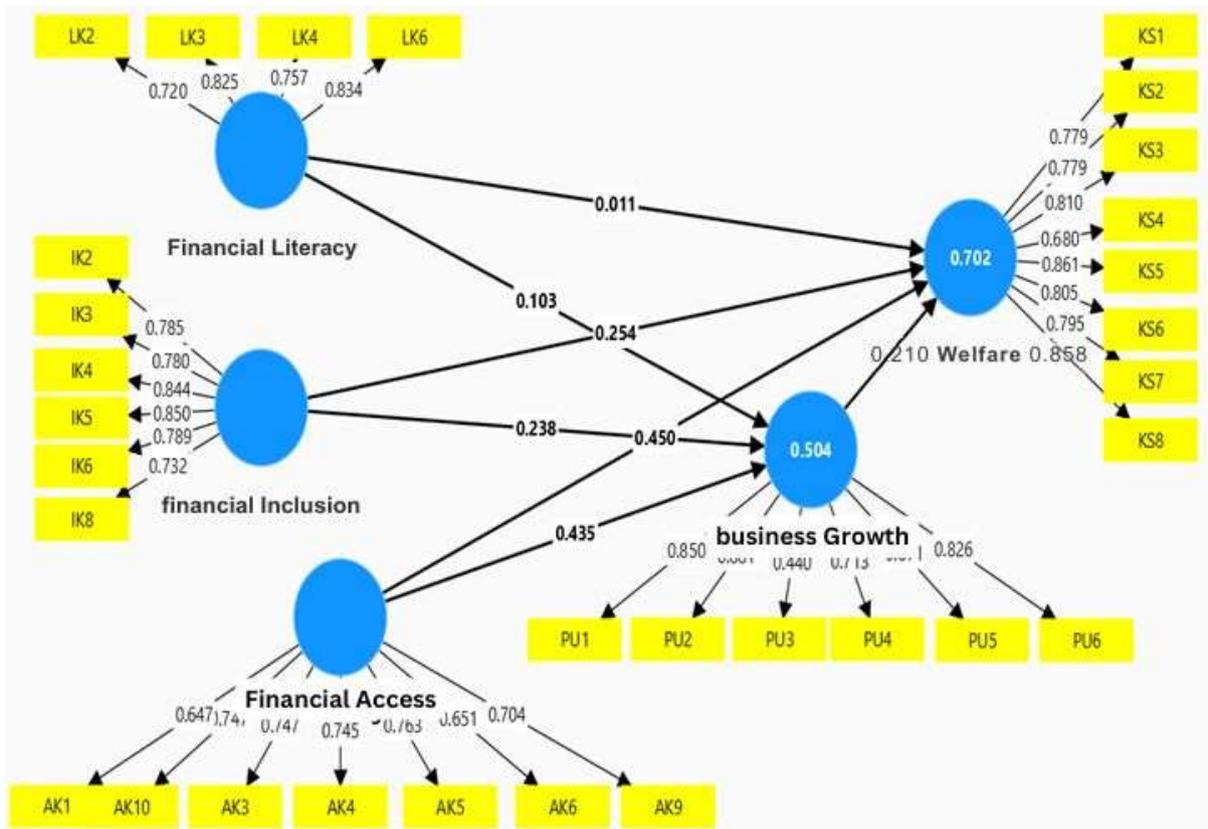


Figure 1. Outer Loading Smart PLS

Table 3.4. Validity and Reliability Results

Variable	Outer Loading	Composite Reliability	Cronbach's Alpha	AVE
Financial Literacy	> 0.70	0.889	0.851	0.572
Financial Inclusion	> 0.70	0.870	0.820	0.528
Financial Access	> 0.70	0.910	0.890	0.503
Business Growth	> 0.70	0.870	0.820	0.528
Welfare	> 0.70	0.888	0.853	0.532

All variables have Composite Reliability values above 0.70, indicating strong reliability. Similarly, AVE (Average Variance Extracted) values exceed 0.50, confirming the validity of the research variables.

Hypothesis Testing

Hypothesis testing was conducted using Structural Equation Modeling (SEM) with the assistance of SmartPLS software. The results of hypothesis testing reveal significant effects among several variables.

Table 3.5 Direct Effect Analysis Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Conclusion
Financial Literacy -> Business Growth	0.103	0.103	0.061	1.680	0.093	Rejected
Financial Inclusion -> Business Growth	0.238	0.237	0.100	2.390	0.017	Accepted
Financial Access -> Business Growth	0.435	0.441	0.083	5.271	0.000	Accepted
Financial Literacy -> Welfare	0.011	0.013	0.046	0.242	0.809	Rejected
Financial Inclusion -> Welfare	0.254	0.258	0.078	3.279	0.001	Accepted
Financial Access-> Welfare	0.450	0.450	0.087	5.141	0.000	Accepted
Business Growth-> Welfare	0.210	0.205	0.065	3.244	0.001	Accepted

The hypothesis testing results indicate that financial inclusion and financial access have a significant impact on both business growth and MSME welfare. However, financial literacy does not show a significant influence on either business growth or welfare.

Mediation Testing

In addition to direct effects, this study also examines the mediating effect of business growth on the relationship between financial literacy, inclusion, and access, and MSME welfare. The mediation test results show that business growth significantly mediates the effect of financial inclusion and access on welfare but does not mediate the effect of financial literacy.

Table 3.6. Mediation Test Results

	T statistics (O/STDEV)	P values	Conclusion
Financial Literacy-> business Growth-> Welfare	1.506	0.132	Rejected
Financial Inclusion -> Business Growth-> Welfare	1.963	0.050	Accepted
Financial Access -> Business Growth-> Welfare	2.666	0.008	Accepted

The results confirm that business growth significantly mediates the relationship between financial inclusion and access and MSME welfare, but not between financial literacy and welfare.

Discussion

The findings of this study offer several key insights into the dynamics of financial literacy, inclusion, access, business growth, and MSME welfare in North Sumatra. These results highlight both the strengths and challenges faced by MSMEs in the region and offer critical implications for policymakers, financial institutions, and business operators.

Financial Literacy and MSME Growth

Contrary to much of the existing literature that underscores the importance of financial literacy in business growth (Maulana, 2023; Andreas, 2023), this study reveals that financial literacy does not have a significant direct impact on MSME growth in North Sumatra. One possible explanation is that financial literacy alone may not be enough to spur business expansion if MSME operators lack access to resources such as capital

or markets to implement their financial knowledge. In regions where financial literacy programs are implemented without concurrent access to financial services, the practical application of financial knowledge may be limited. Maharani and Rita (2020) argued that financial literacy is most effective when combined with access to funding and opportunities for market expansion. In this context, MSMEs in North Sumatra may face structural barriers, such as limited access to affordable credit or restricted market opportunities, which hinders their ability to apply their financial knowledge to enhance business performance.

Additionally, financial literacy in North Sumatra may remain at a theoretical level for many MSME operators. Without practical, hands-on applications of financial principles, such as through financial management training tailored to small businesses, MSME owners may struggle to translate their understanding into tangible outcomes. This aligns with Kusuma et al. (2022), who pointed out that while many MSMEs may have basic financial knowledge, they often lack the tools or environment to put that knowledge into practice effectively. Therefore, while financial literacy remains important, its impact on growth may be constrained by external factors such as market access, infrastructure, and available capital.

Financial Inclusion and Business Growth

The positive relationship between financial inclusion and business growth, as observed in this study, supports the theory that greater access to financial services enables MSMEs to expand their operations and improve productivity. Access to formal financial services, such as credit, savings, and insurance, allows MSMEs to invest in their businesses, enhance product quality, and increase their competitiveness in both local and national markets. This finding echoes Adriani and Wiksuana (2018), who demonstrated that financial inclusion significantly contributes to MSME growth by reducing barriers to accessing capital.

Financial inclusion has particularly far-reaching implications in rural and underserved areas, where MSMEs have historically faced difficulties in obtaining financing. The ability to access credit, in particular, is critical for MSMEs seeking to scale their operations. For instance, MSMEs that can secure loans may be able to invest in new technologies, hire additional employees, or purchase materials in larger quantities, all of which contribute to business growth. However, the study also revealed that despite increased access to financial services, some MSMEs in North Sumatra still face challenges in fully utilizing these services, which may be due to complex administrative procedures or a lack of understanding of the products available to them. This suggests that while financial inclusion is a significant driver of growth, it must be accompanied by efforts to simplify financial service processes and educate MSME operators on how to effectively leverage these services (Pida & Imsar, 2022).

Financial Access and MSME Welfare

The significant impact of financial access on MSME welfare emphasizes the critical role of credit availability in improving not only business growth but also the overall quality of life for MSME operators. The ability to secure financing provides MSMEs with the capital necessary to grow their businesses, leading to increased profits, which in turn improves the personal welfare of business owners. This is consistent with the findings of Safitri et al. (2019), who noted that access to credit significantly boosts the welfare of female entrepreneurs by enabling them to expand their businesses and enhance their economic standing.

Additionally, the study's findings suggest that financial access helps MSMEs navigate economic challenges by providing a financial safety net during downturns. MSMEs that have access to credit can more easily manage short-term cash flow issues or respond to unexpected expenses, such as equipment repairs or inventory shortages. This access to financing allows businesses to maintain stability and protect the welfare of their owners and employees, contributing to long-term sustainability. The results align with Ismanto et al. (2021), who found that easy access to financial services is crucial for the continuity of MSMEs, particularly those facing capital constraints.

However, while financial access has a strong positive effect on welfare, MSMEs still encounter barriers that prevent them from fully realizing these benefits. Complex procedures for loan applications, high-interest

rates, and collateral requirements can limit the ability of some businesses to access credit. Additionally, many MSMEs may not have the financial knowledge to navigate the complexities of formal credit systems, which underscores the importance of integrating financial literacy initiatives with access to credit services. As noted by Bambang et al. (2023), the combination of entrepreneurial training and financial access creates a synergistic effect, leading to more robust business growth and improved welfare outcomes.

The Role of Business Growth as a Mediator

One of the key findings of this study is the mediating role of business growth in the relationship between financial inclusion, financial access, and MSME welfare. The results indicate that business growth significantly mediates the impact of financial inclusion and access on MSME welfare. This finding underscores the importance of fostering an environment where MSMEs can thrive, as growth not only benefits the businesses themselves but also contributes to the personal welfare of the owners. The study supports the view that business expansion leads to increased revenue, job creation, and investment in the local economy, all of which contribute to enhanced welfare for MSME operators.

In contrast, business growth did not mediate the relationship between financial literacy and welfare, further highlighting the complexities surrounding financial literacy in the context of MSMEs. As previously discussed, while financial literacy is an important skill, it may not have a direct impact on welfare unless accompanied by practical opportunities to implement financial knowledge. This suggests that improving financial literacy alone is unlikely to lead to significant welfare gains without concurrent improvements in financial access and inclusion.

Policy Implications and Recommendations

The findings of this study carry several important policy implications. First, improving financial literacy remains an important goal, but it must be paired with practical initiatives that allow MSME operators to apply their knowledge. Financial education programs should be designed to be practical and relevant to the needs of small businesses, focusing on financial management, access to credit, and market expansion. Policymakers should consider integrating financial literacy training with initiatives that provide easier access to capital, such as simplified loan application processes and lower collateral requirements.

Second, the significant impact of financial inclusion and access on business growth and welfare highlights the need for continued efforts to expand formal financial services to underserved areas. Policymakers and financial institutions should work together to simplify financial service procedures and make credit more accessible to MSMEs. This could include offering microloans with low-interest rates, reducing the complexity of loan application processes, and providing targeted support for MSMEs seeking to expand their businesses.

Lastly, the role of business growth as a mediator in improving MSME welfare underscores the importance of creating a supportive business environment that fosters growth. This includes not only improving access to financial services but also providing infrastructure support, access to markets, and training programs that help MSMEs enhance their competitiveness. A comprehensive policy approach that addresses both financial and non-financial barriers to growth will be essential for ensuring the long-term sustainability and welfare of MSMEs in North Sumatra.

Conclusion and Recommendations

This study provides valuable insights into the factors influencing MSME growth and welfare in North Sumatra, with a particular focus on the roles of financial literacy, financial inclusion, and financial access. The findings reveal that financial literacy, while important, does not significantly impact business growth or MSME welfare in this context. MSME operators in North Sumatra may struggle to apply their financial knowledge due to limited access to capital and market opportunities. This suggests that financial literacy alone is insufficient to drive growth and improve welfare unless accompanied by access to the necessary resources and practical application opportunities.

Conversely, financial inclusion emerged as a significant factor in driving business growth. MSMEs with greater access to formal financial services such as credit, savings, and insurance were better positioned to expand their businesses, improve product quality, and reach new markets. Similarly, financial access had a significant positive impact on both business growth and MSME welfare, highlighting the importance of credit availability in enhancing business performance and improving the economic well-being of MSME operators. Business growth was found to play a crucial mediating role in the relationship between financial inclusion, financial access, and MSME welfare, suggesting that fostering a supportive environment for MSMEs to grow is essential for improving their welfare. However, business growth did not mediate the effect of financial literacy on welfare, indicating that literacy alone may not lead to significant welfare gains without adequate capital and market access.

These findings underscore the need for a holistic approach to improving MSME growth and welfare in North Sumatra, focusing not only on enhancing financial literacy but also on expanding access to financial services and creating opportunities for business growth. Addressing these areas will be crucial for ensuring the long-term sustainability of MSMEs and improving the welfare of their operators.

To enhance MSME growth and welfare in North Sumatra, financial literacy programs should be integrated with practical support systems that allow MSME operators to apply their knowledge effectively. Financial education should be hands-on, with a focus on financial management, investment planning, and credit application. Additionally, expanding financial inclusion in rural and underserved areas is essential. Policymakers and financial institutions should work together to simplify access to formal financial services, such as by reducing collateral requirements, offering microloans, and developing digital platforms that enable MSMEs to access credit and savings easily.

Improving access to credit is particularly important for MSMEs, as it provides them with the capital needed to scale their businesses. Financial institutions should streamline loan application processes and offer tailored financial products to meet the unique needs of small businesses. At the same time, MSME operators should be provided with guidance on managing credit and debt responsibly to ensure financial stability. Furthermore, efforts should be made to support business growth through improvements in infrastructure and market access. Investing in transportation, communication, and digital infrastructure will facilitate market expansion for MSMEs, particularly those in remote areas. Programs linking MSMEs to larger markets, both locally and internationally, will also help businesses grow and compete more effectively.

A supportive business environment is critical for fostering MSME growth. Policymakers should reduce bureaucratic barriers, offer tax incentives, and provide technical assistance to help MSMEs expand their operations. Collaboration between the public and private sectors can further enhance MSME competitiveness by providing the resources and expertise needed for business success. Finally, the role of business growth as a driver of MSME welfare emphasizes the importance of targeted policies and programs that directly support business expansion. Capacity building, innovation, and technology adoption should be prioritized to ensure sustainable business growth, leading to long-term welfare improvements for MSME operators.

In conclusion, improving the financial ecosystem for MSMEs in North Sumatra requires a multifaceted approach that enhances financial literacy, broadens financial inclusion, and increases access to credit. These efforts, combined with initiatives that promote business growth, will provide MSMEs with the foundation they need to succeed, contribute to regional economic development, and improve the welfare of their operators.

References

- Abdul Hamid Akhyar Samosir, S. N. L., & Lubis, A. A. R. D. (2024). Policy strategies for spatial planning in regional development of Kisaran City, Asahan Regency, Indonesia. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 27-34.
- Adriani, D., & Wiksuana, I. G. B. (2018). Inklusi keuangan dalam hubungannya dengan pertumbuhan UMKM dan tingkat kesejahteraan masyarakat di Provinsi Bali. Doctoral dissertation, Udayana University.

- Amadasun, D. O., & Mutezo, A. T. (2022). Influence of access to finance on the competitive growth of SMEs in Lesotho. *Journal of Innovation and Entrepreneurship*, 11(1), 56.
- Amin, S. R. D., & Pamungkas, H. P. (2022). Pengaruh inklusi keuangan dan literasi keuangan terhadap kinerja UMKM sub sektor usaha mikro di kabupaten Bojonegoro, Jawa Timur. *Jurnal Apresiasi Ekonomi*, 10(3), 377-385.
- Anisah, S. (2024). Sustainable community empowerment approaches in the mangrove ecotourism sector through creative initiatives in Sei Nagalawan Village, Serdang Bedagai Regency, Indonesia. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(2), 01-11. <https://doi.org/10.70471/f8wchm54>
- Aqida, M. S., & Fitria, S. (2019). The influence of financial access on MSME growth with the moderation of financial literacy in the city of Semarang (Doctoral dissertation, Faculty of Economics and Business)
- Arga Abdi Rafiud Darajat Lubis, V. R. A., & Lubis, S. N. (2024). Evaluation of the Self-Help Housing Assistance Program (BRS) in enhancing rural area planning in Subulussalam Utara Village, Simpang Kiri District, Subulussalam City, Aceh Province: English. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 14-19.
- Bambang, S., Masrunik, E., & Rizal, M. (2020). Motivasi kerja dan Gen Z: Teori dan penerapan. Zaida Digital Publishing.
- Basha, S. A., Bennis, H., & Goaid, M. (2023). Financial literacy, financial development, and leverage of small firms. *International Review of Financial Analysis*, 86, Article 102510. <https://doi.org/10.1016/j.irfa.2023.102510>
- Bottazzi, L., & Lusardi, A. (2021). Stereotypes in financial literacy: Evidence from PISA. *Journal of Corporate Finance*, 71, 101831.
- Dela Cruz, N. A., Villanueva, A. C. B., Tolin, L. A., Disse, S., Lensink, R., & White, H. (2023). PROTOCOL: Effects of interventions to improve access to financial services for micro-, small- and medium-sized enterprises in low- and middle-income countries: An evidence and gap map. *Campbell Systematic Reviews*, 19(3), Article e1341. <https://doi.org/10.1002/cl2.1341>
- Eko Suharizki, Z. N., Purwoko, A., & Lubis, A. A. R. D. (2024). Evaluation of housing development growth in Asahan Regency: English. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 07-13. <https://argaepublisher.com/index.php/amjel/article/view/2>
- Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, 49(3), 589-614.
- Lubis, S. N., & Lubis, A. A. R. D. (2024). Enhancing Indonesian coffee trade: Strategies for navigating and reducing trade barriers. *International Journal of Innovative Research and Scientific Studies*, 7(3), 1248-1267. <https://doi.org/10.53894/ijriss.v7i3.3231>
- Lubis, S. N., & Lubis, A. A. R. D. (2024). Income analysis of coffee farmers and its impact on regional development (Case study: Pematang Sidamanik District, Simalungun Regency, Indonesia). *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 20-26.
- Maulana, M. I., & Suyono, E. (2023). Pengaruh literasi keuangan dan literasi digital terhadap keberlanjutan bisnis pelaku UMKM berbasis syariah. *Jurnal Ilmiah Ekonomi Islam*, 9(3), 4256-4271. Available at <https://jurnal.stie-aas.ac.id/index.php/jjie>
- Maharani, D. S., & Rita, M. R. (2020). Literasi keuangan dan pertumbuhan UMKM: Peran mediasi manajemen kas. *Jurnal Ekonomi Bisnis*, 19(1), 11-20.
- Masrizal, S. N. L., & Lubis, A. A. R. D. (2024). Evaluation of the Self-Help Housing Assistance Program (BRS) in enhancing rural area planning in Subulussalam Utara Village, Simpang Kiri District, Subulussalam City, Aceh Province: English. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 14-19.
- Muliadi, M., Lubis, S. N., Harahap, H., Slamet, B., & Lubis, A. A. R. D. (2024). Sustainable food systems and regional development: Analyzing food security in Medan City's underprivileged areas, Indonesia. *Journal of Ecohumanism*, 3(6), 529-537. <https://doi.org/10.62754/joe.v3i6.4023>
- Noor, U., Mansoor, M., & Shamim, A. (2022). Customers create customers!—Assessing the role of perceived personalization, online advertising engagement and online users' modes in generating positive e-WOM. *Asia-Pacific Journal of Business Administration*, (ahead-of-print).
- Okello Candiya Bongomin, G., Mpeera Ntayi, J., Munene, J. C., & Akol Malinga, C. (2017). The relationship between access to finance and growth of SMEs in developing economies: Financial literacy as a moderator. *Review of International Business and Strategy*, 27(4), 520-538.
- Pandiangan, A. (2020). Manajemen informasi publik: Konsep dan praktik di Indonesia. Yogyakarta: CV Budi Utama.
- Pida, Y., & Imsar, I. (2022). Pengaruh literasi keuangan dan inklusi keuangan terhadap scale-up bisnis UMKM Kota Medan dalam kerangka maqashid syariah. *Jurnal Sains Sosio Humaniora*, 6(2), 2580-2305.
- Rizki, A., Nasution, Z., Lubis, S. N., & Lubis, A. A. R. D. (2024). The influence of education, social, and healthcare expenditures on the human development index (HDI) in Bireuen Regency: English. *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(2).
- Safitri, N., Permadi, I., & Fathussyaadah, E. (2022). Literasi keuangan digital, keberlanjutan usaha industri kecil dan menengah serta dampaknya terhadap kesejahteraan keuangan. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 6(3), 1203-1214.
- Safitri, V., Muthmainnah, J. M., Sribianti, I., & Molo, H. (2022). Pendapatan masyarakat sekitar kawasan taman wisata alam Malino hutan pinus Lembanna di Kabupaten Gowa Provinsi Sulawesi Selatan. *Jurnal Kehutanan Papuasia*, 8(2), 262-268.
- Sanistasya, P. A., Rahardjo, K., & Iqbal, M. (2019). Pengaruh literasi keuangan dan inklusi keuangan terhadap kinerja usaha kecil di Kalimantan Timur. *Jurnal Economia*, 15(1), 48-59.
- S N Lubis et al. (2024). Enhancing Indonesian coffee trade: Strategies for navigating and reducing trade barriers. *IOP Conference Series: Earth and Environmental Science*, 1356(1), 012033. <https://doi.org/10.1088/1755-1315/1356/1/012033>

- Sutarsih, E. (2023). Literasi dan inklusi: Keuangan syariah sebagai fundamental kesejahteraan UMKM: Edukasi bisnis akses keuangan syariah untuk UMKM santri di Yogyakarta. *As-Syar'i: Jurnal Bimbingan & Konseling Keluarga*, 5(3), 1130-1149.
- Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, 8(6), e09766. <https://doi.org/10.1016/j.heliyon.2022.e09766>
- Tiurma Gulo, S. N. L., & Lubis, A. A. R. D. (2024). Income analysis of coffee farmers and its impact on regional development (Case study: Pematang Sidamanik District, Simalungun Regency, Indonesia). *Asian Multidisciplinary Research Journal of Economy and Learning*, 1(1), 20-26.
- Widita, A. A., Lechner, A. M., & Widyastuti, D. T. (2024). Spatial patterns and drivers of micro, small and medium-sized enterprises (MSMEs) within and across Indonesian cities: Evidence from highly granular data. *Regional Science Policy & Practice*, 16(11), Article 100137. <https://doi.org/10.1016/j.rspp.2024.100137>.