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FINANCIAL LITERACY, POLICIES AND REGULATIONS, INFRASTRUCTURE FACILITIES AND FINANCIAL INCLUSION FOR MICRO, SMALL, AND MEDIUM BUSINESS OWNERS IN BANGKA BELITUNG

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Abstract
This study examines the influence of Financial Literacy on Financial Inclusion by considering the role of Infrastructural Facility and Policy and Regulation as mediation variables. The study was conducted on MSMEs in the city of Pangkalpinang with 224 respondents, Data collection was carried out by distributing questionnaires online using Google Forms. The results of the analysis show that Financial Literacy has a significant effect on Financial Inclusion, both directly and through the Infrastructural Facility. On the other hand, mediation through Policy and Regulation is not significant, indicating that political regulation has not played an optimal role in increasing financial inclusion. These findings emphasize the importance of encouraging investment in strengthening infrastructure such as fintech networks and banking services in remote areas as an effective strategy in encouraging wider access to finance. In addition, regulations related to political and financial policies need to be evaluated to be more adaptive and effective in supporting people's financial literacy and access. More applicable financial education programs also need to be expanded through cooperation between the government, the private sector, and MSMEs to increase public understanding and participation in the formal financial system. Further research is suggested to explore additional factors and use a longitudinal approach to gain a more comprehensive understanding.

Keywords: *Financial literacy, Policy and Regulation, infrastructural facility, financial inclusion, MSMEs*

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have a very significant role in the global economy, including in Indonesia. MSMEs contribute to job creation, income equity, and an increase in national Gross Domestic Product (GDP) (OECD, 2022). However, despite having a crucial role, MSMEs still face various challenges in accessing financial services that can support their business growth (Demirgüç-Kunt et al., 2023). One of the main factors that contribute to low financial inclusion among MSME owners is that financial literacy is still limited (Lusardi & Mitchell, 2022).

Financial literacy is an important factor in making wise financial decisions, including in business financial management and the use of banking services. Previous studies have shown that low levels of financial literacy can hinder MSMEs' access to banking credit and other financial services (Klapper et al., 2023). In addition to financial literacy, policies and regulations implemented by the government also play a key role in supporting or hindering MSMEs' access to the formal financial system (Beck et al., 2021). Policies that are out of sync or too strict can complicate access to financing for MSMEs, especially for those in remote areas.

Another factor that contributes to the financial inclusion of MSMEs is the availability of financial infrastructure facilities, such as banking networks, financial technology (fintech), and digital banking services (Allen et al., 2022). The existence of this infrastructure can expand the reach of financial services for MSMEs and help overcome limited physical access to conventional financial institutions. Therefore, a combination of financial literacy, supportive policies and regulations, and adequate infrastructure facilities is key to increasing financial inclusion for MSME owners.

Although there has been a lot of research on financial literacy and financial inclusion, there is still a gap in understanding how financial infrastructure policies and regulations and facilities moderate the relationship between financial literacy and financial inclusion of MSMEs. Several studies highlight the importance of financial literacy in increasing MSMEs' access to financial services (Lusardi & Tufano, 2023), but there is still limited research that examines the role of financial policy and infrastructure simultaneously in encouraging MSME financial inclusion.

Furthermore, there are still differences in results in various studies on the effectiveness of financial policies implemented in various countries, especially in the context of MSMEs in Indonesia. This raises questions about the extent to which the current policies are driven by the needs of MSMEs and how the existing financial infrastructure can support increasing financial inclusion for small and medium business owners.

The investigation conducted by Babatunde (2025) revealed that infrastructure amenities serve as a mediating factor in the relationship between independent and dependent variables. Additionally, the research advocates for the execution of financial inclusion initiatives, which encompass the incorporation of financial literacy programs into educational curricula and community outreach activities, aimed at enhancing financial knowledge, experience, and awareness among proprietors of micro, small, and medium enterprises (MSMEs) within the studied region. Moreover, the research suggests the provision of infrastructure resources, such as mobile devices and mobile internet connectivity, to tackle specific challenges related to financial inclusion.

This study aims to identify the interaction between financial literacy, policies and regulations, and infrastructure facilities in determining the level of financial inclusion of MSMEs. This research is expected to provide a more comprehensive understanding of the factors that contribute to the financial inclusion of MSMEs, as well as be the basis for the development of more effective and inclusive policies in the future.

LITERATURE REVIEW

Financial Literacy

Financial literacy is increasingly recognized as an essential skill for effective financial decision-making across a wide range of demographics, including employees and farmers. This includes the ability to understand and utilize financial concepts, which are essential for managing personal finances, making informed investment choices, and navigating complex financial landscapes (Suwandi & Syarif, 2025; Ahamed, 2025). Studies show that financial literacy levels differ significantly between groups; for example, employees generally show higher financial literacy compared to farmers, who often face unique challenges in financial management due to the risks inherent in their businesses (Suwandi & Syarif, 2025; Murini & Mas'ud, 2025).

Additionally, factors such as attitudes and financial awareness have been shown to significantly influence investment decisions among salaried individuals, highlighting the importance of tailored educational interventions to improve financial literacy (Sharma & Pokharel, 2025). The emergence of digital financial systems also requires a focus on digital financial literacy to reduce the risks associated with online transactions (Ahamed, 2025). Overall, improving financial literacy is essential to promote economic resilience and social equality, especially in underserved populations such as farmers (Murini & Mas'ud, 2025; Ahamed, 2025).

Financial inclusion

Financial inclusion is an important process that aims to ensure that individuals and businesses, especially those from marginalized communities, have access to affordable financial services, which are essential for economic growth and social justice. In India, significant progress has been made, with bank account ownership increasing from 44% in 2011 to over 75% in 2021, largely due to government initiatives such as the Pradhan Mantri Jan Dhan Yojna and the promotion of digital financing (Das, 2024). Microfinance plays an important role in this context by providing small loans and financial services to economically disadvantaged groups, thereby encouraging entrepreneurship and reducing poverty (Sonam et al., 2024) ("Challenges of Microfinance and Financial Inclusion for Development Using WASPAS Method", 2024). However, challenges such as limited infrastructure, low financial literacy, and sociocultural barriers remain, necessitating collaborative efforts to enhance consumer empowerment and leverage technology, particularly in the Global South (Gould, 2024; Minz et al., 2024). Addressing this issue is critical to creating an inclusive financial ecosystem that can promote sustainable economic development ("Challenges of Microfinance and Financial Inclusion for Development Using the WASPAS Method", 2024).

Financial inclusion in Indonesia is a multifaceted issue that has a significant impact on economic growth, poverty alleviation, and the performance of small and medium enterprises (SMEs). Research shows that financial inclusion is essential for reducing poverty, with research showing it can reduce the risk of poverty (Yeniwati et al., 2024; Amin et al, 2023). However, barriers such as limited financial literacy and the digital divide hinder access to financial services, especially in rural areas (Putra et al., 2024). Technology integration is essential, as it mediates the relationship between financial inclusion and inclusive growth, suggesting that government support for technological infrastructure is essential (Dana, 2024). In addition, increased financial literacy has been shown to increase access to formal financial services, which is especially important for SMEs that are a significant part of Indonesia's workforce and GDP (Buhari et al., 2024). Overall, coordinated efforts between governments, financial institutions, and technology providers are needed to foster an inclusive financial ecosystem (Putra et al., 2024; Yeniwati et al., 2024; Fauzi et al, 2023).

The Relationship Between Financial Literacy and Financial Inclusion

Financial literacy significantly affects the financial inclusion of micro, small, and medium enterprises (MSMEs) owners by increasing their understanding of financial products and services, which in turn facilitates better access to financial resources. Studies show that higher financial literacy correlates with improved performance and access to financing for MSMEs, as it allows owners to navigate complex credit requirements and negotiate favorable loan terms (Agustina & Hafidh, 2025; Gustika et al., 2024; Pontes et al., 2024).

In addition, financial literacy positively impacts all dimensions of financial inclusion—access, use, and quality—suggesting that educated entrepreneurs are more likely to make effective use of available financial services (Wallace & Wellalage, 2024). The integration of financial literacy initiatives with financial inclusion policies is critical to driving sustainable growth in the MSME sector, as evidenced by the complementary relationship between these factors (Buhari et al., 2024). Thus, improving financial literacy is essential to empower MSME owners and promote their financial inclusion.

In a similar vein, research conducted by Pontes et al. (2024) indicates that financial literacy significantly enhances the negotiation skills, self-assurance, and managerial competencies of entrepreneurs, thereby amplifying their loan demands. Consequently, this advancement fosters financial inclusion for micro, small, and medium enterprises by facilitating access to superior credit products and services. Entrepreneurs possessing a robust level of financial acumen are more proficient in negotiating advantageous credit conditions, which subsequently diminishes administrative expenses. Furthermore, financial attitudes act as indicators to banks regarding the entrepreneurs' confidence and managerial expertise. Additionally, elevated financial behaviors enable entrepreneurs to advocate for more advanced financial offerings. Research by González-Prida et al. (2025) demonstrates that financial literacy enhances the decision-making capabilities of micro-entrepreneurs, equipping them to address financial challenges efficiently. This augmented financial literacy bolsters the sustainable development of micro-enterprises, indirectly fostering financial inclusion by empowering proprietors to execute well-informed financial choices.

The Relationship of Financial Literacy to Financial Inclusion through Policies and Regulations

Financial literacy plays an important role in increasing financial inclusion through policies and regulations by equipping individuals with the necessary skills to access and utilize financial services effectively. Studies show that financial literacy has a significant impact on all dimensions of financial inclusion, including access, use, and quality of financial services, especially for micro, small, and medium enterprises (MSMEs) (Wallace

& Wellalage, 2024). Targeted financial education programs have been identified as an effective strategy to improve financial literacy, thereby driving greater financial inclusion (Wallace & Wellalage, 2024). At the country level, financial literacy is a key determinant in the adoption of digital payments and other financial instruments, highlighting its importance in the evolving financial landscape (Orlov et al., 2024).

In Indonesia, governmental programs such as the National Strategy for Financial Literacy (SNLKI) endeavor to alleviate the disparity between financial literacy and inclusion by concentrating on elements including formal education, social influences, familial impacts, governmental policies, and advancements in financial technology (Pandeirot &, 2024). Furthermore, financial literacy is critical in enhancing the efficacy of decentralized finance (DeFi) concerning financial inclusion, as it empowers individuals to navigate intricate financial technologies and render informed decisions (Sayari, 2024). In India, governmental interventions have played a pivotal role in fostering financial literacy and inclusion, particularly through digital initiatives that have revolutionized the banking landscape and augmented access to financial services for varied demographic groups (Das & Pattanaik, 2024). In summary, financial literacy serves as a crucial determinant in formulating policies and regulations that promote financial inclusion, ensuring that individuals can interact proficiently with the financial system and capitalize on the opportunities it presents.

The Relationship of Financial Literacy to Financial Inclusion through Infrastructure Facilities

Financial literacy significantly affects financial inclusion through policies and regulations by improving the ability of individuals to access and utilize financial services effectively. Research shows that higher financial literacy correlates with increased access, use, and quality of financial services, especially among micro, small, and medium enterprises (MSMEs) (Wallace & Wellalage, 2024). In addition, financial literacy is essential for the adoption of digital payment systems, which are increasingly important in the modern financial landscape (Orlov et al., 2024).

Policies aimed at improving financial literacy, such as Indonesia's National Strategy for Financial Literacy, emphasize the need for formal education, socialization, and government regulation to bridge the gap between financial literacy and inclusion (Pandeirot &, 2024). Additionally, the integration of financial technology and decentralized finance highlights the need for financial literacy in navigating these innovations, ensuring that they effectively serve underprivileged populations (Sayari, 2024). In a diverse context like India, targeted financial literacy initiatives have been shown to increase the effectiveness of financial inclusion policies, demonstrating the critical interaction between these two domains (Das & Pattanaik, 2024).

Financial literacy significantly affects individuals' access to financial services, as it equips them with the knowledge and skills necessary to navigate the complex financial landscape. Studies show that higher financial literacy correlates with increased use of traditional and digital financial instruments, thereby improving financial inclusion outcomes

(Orlov et al., 2024; Wallace & Wellalage, 2024). For example, among Micro, Small, and Medium Enterprises (MSMEs), low financial literacy often results in limited access to financial institutions, as many owners cannot manage finances effectively, which is critical to securing credit (Zai et al., 2024).

In addition, improving financial literacy is essential for leveraging formal financial services, especially in areas with limited infrastructure, where it can mitigate the impact of the digital divide (Putra et al., 2024). Overall, fostering financial literacy through targeted education programs is essential to promote equitable access to financial services and increase economic resilience (Ahamed, 2025).

METHOD

This study uses a quantitative approach with a path analysis method to examine the influence of Financial Literacy on Financial Inclusion and the mediating role of Infrastructural Facility and Policy, and Regulation. Data was collected through an online survey involving 224 respondents from various MSMEs in Pangkalpinang City, using a Google form. The sampling technique was carried out by purposive sampling to ensure that participants had experience in financial literacy and access to financial services. Each question item was measured using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Data analysis was carried out using a structural model (SEM-PLS) to test the relationships between variables, including direct effects and mediation. The Structural Equation Modeling - Partial Least Squares (SEM-PLS) approach was chosen because it can handle models with high complexity, as well as provide strong estimation results even though the data is not normally distributed (Hair et al., 2021). The software used is SmartPLS 4.0. The analysis process is carried out in several stages, such as Measurement Model (Measurement Model / Outer Model), validity test, convergent through factor loadings (> 0.70), and average variance extracted (AVE) (> 0.50). The discriminatory validity test used the Fornell-Larcker Criterion and HTMT. The reliability test used Cronbach's Alpha (> 0.7) and Composite Reliability (CR) (> 0.7). Evaluation of Structural Model (Inner Model), Collinearity Test using VIF (< 5.0). Test the significance of the relationship between variables with path coefficients (β) and t-statistics using bootstrapping. The mediation effect test used the Baron & Kenny (1986) approach as well as the bootstrap confidence interval technique. The coefficient of determination (R^2) is used to measure the predictive strength of the model. GoF (Goodness of Fit) test of the Model with SRMR (< 0.08) to assess the fit of the model.

RESULTS AND DISCUSSION

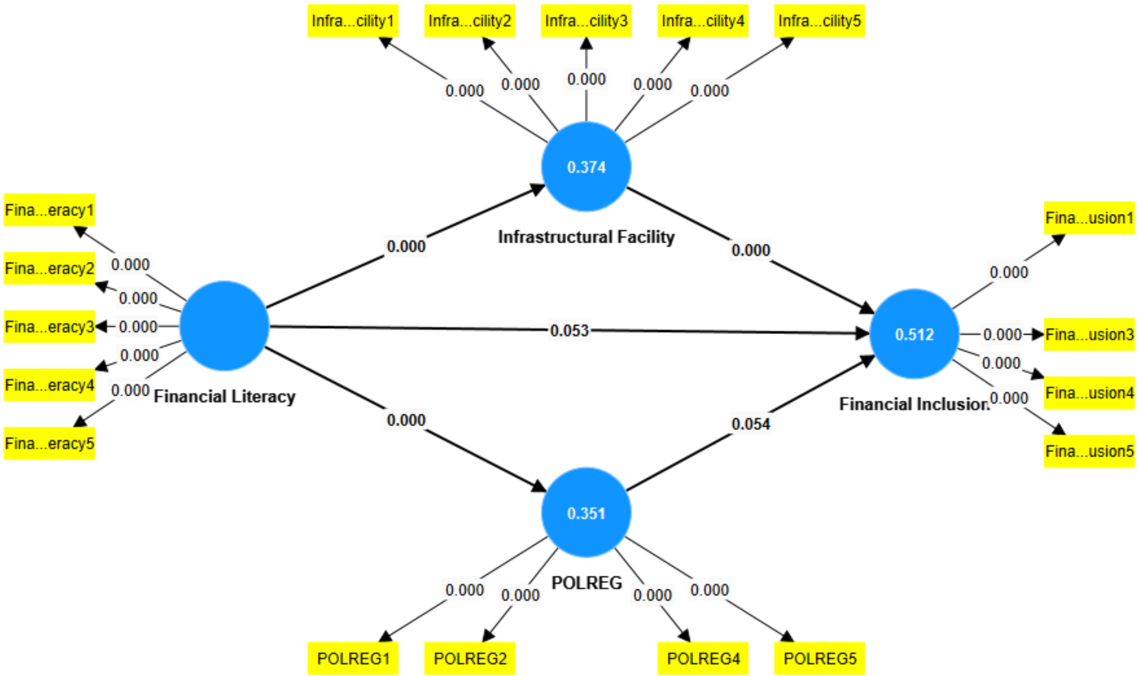

Figure 1. Bootstrapping test

Path coefficients indicate the strength and direction of the relationship between variables in the tested model. The results are as follows:

Table 1. Path coefficients

Relationships Between Variables	Path Coefficients	T-Statistics	P-Value	Conclusion
Financial Literacy -> Financial Inclusion	0.185	1.939	0.053	Significant
Financial Literacy -> Infrastructural Facility	0.611	6.368	0.000	Significant
Financial Literacy -> Policy and Regulation	0.593	8.776	0.000	Significant
Infrastructural Facility -> Financial Inclusion	0.498	5.796	0.000	Significant
Policy and Regulation -> Financial Inclusion	0.147	1.924	0.054	Significant
Financial Literacy -> Infrastructural Facility -> Financial Inclusion	0.305	4.698	0.000	Significant
Financial Literacy -> Policy and Regulation -> Financial Inclusion	0.087	1.856	0.064	Insignificant

The Influence of Financial Literacy on Financial Inclusion

The results showed that the hypothesis H1: Financial literacy had a positive effect on significant financial inclusion with a *p-value* of 0.053. These findings support the theory that financial literacy is considered an important factor in increasing financial inclusion. A good understanding of financial products and services should encourage individuals or business actors to more actively utilize formal financial services. Several previous studies support the positive influence of financial literacy and financial inclusion. For example, a study by Kusuma, Narulitasari, and Nurohman (2022) found that financial literacy plays a role in increasing financial inclusion and the performance and sustainability of MSMEs in Solo Raya.

Similarly, research by Prastica (2020) shows that financial literacy has a significant role in financial inclusion and SME performance in Pasuruan Regency. Furthermore, a study by Farhani and Taufiqurahman (2022) in Karawang Regency found that financial literacy and financial inclusion together affect the performance of MSMEs. However, this study also emphasizes the importance of good financial management as a determinant of performance. This shows that financial literacy alone is not enough without being followed by effective financial management practices. In a broader context, the Fiscal Policy Agency (2023) emphasizes the importance of developing digital financial inclusion and literacy for MSMEs in the ASEAN region. While financial literacy is considered important, the implementation and utilization of financial technology is also key in increasing financial inclusion.

The Influence of Financial Literacy on Infrastructure Facilities

The results showed that the hypothesis H2: Financial literacy had a positive effect on significant infrastructure with *a p-value* of 0.000 (less than 0.05). These findings indicate that increasing financial literacy has a real impact on the development of infrastructure facilities, both in the context of individuals, businesses, and macroeconomics. Theoretically, financial literacy is a fundamental aspect in better financial decision-making, including in terms of infrastructure investment. The Financial *Literacy and Economic Growth* Theory (Lusardi & Mitchell, 2014) asserts that individuals and entities with high financial literacy tend to have more mature financial planning, thereby contributing to the development of infrastructure through more efficient investments. Infrastructure itself, both in physical form such as roads, bridges, and public facilities, as well as in digital form such as internet networks and electronic payment systems, is highly dependent on investment decisions based on financial knowledge. Some empirical research supports the relationship between financial literacy and infrastructure development. For example, research by Setiawan and Lestari (2021) shows that good financial literacy contributes to optimizing infrastructure investment in the public sector, especially in *public-private partnership (PPP)* schemes. The study confirms that a better understanding of financial instruments allows local governments and private investors to leverage alternative sources of funding, thereby accelerating infrastructure development.

In addition, a study by Nugroho et al. (2022) revealed that the level of people's financial literacy plays an important role in the sustainability of community-based infrastructure projects. In this study, people with a high level of financial literacy are better able to manage funds for the development and maintenance of local infrastructure effectively. This shows that financial literacy not only impacts infrastructure investment by large institutions but also infrastructure management by communities. Furthermore, research by Prabowo and Handayani (2020) found that small and medium-sized entrepreneurs who have a good financial understanding are more likely to invest in their business infrastructure, such as digital payment technology, logistics, and fixed asset management. Thus, financial literacy not only affects infrastructure on a macro scale but also on a micro scale that supports overall economic growth.

The study by Sari et al. (2023) also corroborates these findings by showing that financial literacy-based financial policies in the banking sector encourage greater productive credit disbursement for infrastructure investment. Banks that have customers with better levels of financial literacy tend to provide loans with more competitive interest rates, thus encouraging the increase in infrastructure projects. In addition, research by Rahmawati and Yusuf (2021) found that financial literacy plays a role in improving the efficiency of regional infrastructure fund management. Local governments with a better financial understanding can allocate infrastructure budgets more optimally, reduce waste, and increase transparency in the management of public funds. In a study by Wijayanti et al. (2022), it was found that good financial literacy among investors contributes to the increase in infrastructure funding through investment instruments such as infrastructure bonds and project-based *crowdfunding*. This study emphasizes the importance of financial education in increasing community involvement in supporting sustainable infrastructure development.

The Influence of Financial Literacy on Regulations and Policies

The findings of the research indicate that the hypothesis H3: Financial literacy positively influences regulations and policies is supported by a p-value of 0.000. These results substantiate the notion that enhanced financial literacy fosters the development and enactment of more efficacious regulations and policies within the financial sector. Individuals and communities possessing a robust financial comprehension are generally more cognizant of the significance of consumer protection, financial transparency, and initiatives that promote financial inclusion. Theoretically, the correlation between financial literacy and financial regulation can be elucidated through Public Choice Theory (Buchanan & Tullock, 1962), which posits that public engagement in policy formulation is more productive when individuals possess a sufficient level of understanding of the economic and financial landscape. This theory bolsters the premise that more financially literate individuals are likely to be more proactive in advocating for policies that are inclusive and equitable. Furthermore, Financial Behavior Theory (Lusardi & Mitchell, 2014) underscores the idea that a comprehensive grasp of financial matters not only impacts an individual's financial choices but also plays a role in enhancing the design of financial policies.

Several empirical studies in the last five years support these findings. For example, research by Klapper et al. (2020) found that countries with higher levels of financial literacy have stricter and more effective financial regulations, especially in consumer protection and transparency of financial products. Furthermore, research by van Rooij et al. (2021) shows that individuals with high levels of financial literacy are more likely to engage in public policy discussions regarding finance and put pressure on governments to adopt stricter regulations in the financial sector. A study by Atkinson & Messy (2022) highlights that increased financial literacy among low-income communities encourages governments to design more inclusive policies, such as regulations related *to microfinance* and *fintech* that are more proactive in improving access to finance.

Further, research by Fernandes et al. (2023) shows that more financially literate people are more aware of their rights in the financial system and are more likely to sue for policies that protect them from harmful financial practices. Meanwhile, a study by Hastings & Mitchell (2021) found that countries with high levels of financial literacy tend to have more efficient and transparent tax regulations. Public awareness of the concept of better taxation causes the government to be more encouraged to increase accountability in fiscal policy. Another study by Stolper & Walter (2022) shows that good financial literacy contributes to the development of regulations that are more adaptive to financial technology, such as rules on *cryptocurrencies*, *peer-to-peer lending*, and *digital banking*. In addition, research by Potrich et al. (2023) highlights that people with higher levels of financial literacy tend to be more supportive of policies that increase transparency in the financial sector, such as clearer reporting on transaction costs and investment risks.

The Influence of Infrastructure Facilities on Financial Inclusion

The results showed that the H4 hypothesis: Infrastructure had a positive effect on financial inclusion with a *p-value* of 0.000 (less than 0.05). These findings indicate that infrastructure developments have a real impact on increasing financial inclusion. Better infrastructure, both in physical form (such as transportation networks and financial facilities) and digital (such as the internet and electronic payment systems), plays a role in expanding access to financial services for people. Theoretically, the relationship between infrastructure and financial inclusion can be explained through the *Financial Access Theory* approach (Beck et al., 2010), which emphasizes that the accessibility of financial services depends on adequate infrastructure factors. Evolving infrastructure, such as banking networks, internet connectivity, and digital payment systems, allows individuals and businesses to more easily access financial services, including savings, credit, and insurance. In addition, economic development theory (Todaro & Smith, 2015) also asserts that infrastructure investment contributes to more inclusive economic growth by reducing geographical barriers and transaction costs in financial services.

Several empirical studies support this finding. For example, research by Chikalipah et al. (2021) found that improvements in digital infrastructure in developing countries, such as the expansion of 4G networks and increased smartphone penetration, contribute to increased financial inclusion through technology-based financial services (*fintech*). The study shows that people who previously did not have access to formal banking can now take advantage of financial services through *mobile banking applications* and *e-wallets*. In addition, research by Sahay et al. (2022) confirms that financial infrastructure, such as the existence of bank branches, ATMs, and *branchless banking* agents, plays a role in increasing financial inclusion, especially in rural areas. The study found that in areas with developed financial infrastructure, people are more likely to have bank accounts and access formal credit compared to areas with limited financial infrastructure. Another study by Rahman and Islam (2020) shows that the development of transportation infrastructure, such as roads and logistics facilities, indirectly increases financial inclusion by facilitating people's access to financial institutions. As the distance and cost of travel to a bank or financial agency decrease, more individuals are encouraged to use formal financial services.

Furthermore, research by Kumar et al. (2023) identified that the existence of digital payment infrastructure, such as QRIS systems and *real-time payment systems*, plays an important role in increasing the use of digital financial services. The study reveals that in countries with a growing digital payments ecosystem, the rate of bank account ownership and use of credit services increased significantly. Research by Gomez et al. (2021) shows that stable electricity infrastructure also affects financial inclusion, especially in the context of the adoption of technology-based financial services. The study found that in areas with better access to electricity, people are more likely to use digital banking services and participate in the formal economy. In addition, a study by Chen et al. (2022) highlights the importance of internet infrastructure in driving financial inclusion in rural areas. With the increasing availability of internet networks, people who previously had difficulty accessing financial services can take advantage of digital banking platforms and online loan services. Meanwhile, research by Nugroho et al. (2023) shows that investments in community-based financial infrastructure, such as digital cooperatives and banking agents, contribute to improving access to financial services for low-income groups. The study underscores that inclusive infrastructure can reduce inequality in access to financial services.

The Influence of Regulations and Policies on Financial Inclusion

The results show that the H5 hypothesis: Regulation and policy have a positive effect on financial inclusion with a *p-value* of 0.054. These findings confirm that policies and regulations implemented by governments and financial authorities have a real impact on improving financial inclusion. Regulations that support access to financial services, such as inclusive banking policies, consumer protection, and the development of digital financial ecosystems, play an important role in encouraging public participation in the formal financial system. Theoretically, the relationship between regulation and financial inclusion can be explained through *Financial Inclusion Theory* (Beck et al., 2010), which states that adequate regulation will reduce structural barriers and improve access to financial services for previously underserved communities. In addition, *Institutional Theory* (North, 1990) also supports the idea that good regulation and policies create a stable economic environment and increase public confidence in the financial system. When regulations can ensure transparency, security, and efficiency in financial services, public participation in the financial sector will increase.

Several empirical studies support these findings for example, a study by Demirgüç-Kunt et al. (2021) found that national policies regarding financial inclusion in some developing countries, such as Indonesia and India, have succeeded in increasing the number of individuals who have bank accounts through subsidy and incentive programs for financial institutions that serve low-income segments of society. Furthermore, a study by Evans & Adegbite (2022) shows that regulations supporting *fintech* and digital-based financial services contribute to the growth of financial inclusion in African countries. Regulations that clarify the governance of *mobile banking* and *e-wallets* have increased public confidence in using digital financial services. Research by Allen et al. (2020) underscores that regulations focused on consumer protection, such as interest rate transparency policies and financial service fees, have a positive impact on increasing financial inclusion. The study found that when regulations protect consumers from excessive financial risks, people are more motivated to use formal financial services. Meanwhile, a study by Ozili (2023) highlights the importance of policies in the development of financial infrastructure in developing countries. The study found that regulations supporting the construction of ATMs, *branchless banking* agents, and digital payment systems play an important role in increasing access to formal financial services.

Another study by Park & Mercado (2021) shows that policies that encourage collaboration between banks and *fintechs* have increased the reach of financial services in Southeast Asia. With clear regulations regarding *open banking* and the use of *Application Programming Interfaces* (APIs), people can more easily access financial services through various digital platforms. Furthermore, research by Hannig & Jansen (2022) revealed that more flexible regulations regarding digital identification and customer verification (*Know Your Customer* (KYC) have accelerated the growth of financial inclusion, especially for people who previously had difficulty meeting the document requirements to open a bank account. In addition, a study by Zins & Weill (2023) highlights that regulations that provide incentives for banks and financial institutions to serve poor segments contribute to increased financial inclusion in developing countries. With incentive policies and tax breaks for financial institutions participating in financial inclusion programs, more individuals and MSMEs have access to formal financial services.

The Influence of Financial Literacy on Financial Inclusion through Infrastructure and Regulation

The results showed that financial literacy did not have a direct influence on financial inclusion, but had an indirect effect through two mediators, namely financial infrastructure (coefficient 0.314; $p < 0.001$) and policy and regulation (coefficient 0.102; $p = 0.064$). These findings are in line with Baron & Kenny's (1986) mediation theory, which emphasizes that independent variables can influence dependents through the intermediary of contextual factors. A recent study by Demirgüç-Kunt et al. (2022) explains that financial infrastructure (such as digital access, bank networks) acts as a "bridge" that transforms financial knowledge into real access, especially in developing countries. This is supported by research by Sarma & Pais (2019), which found that increasing financial literacy is only effective if accompanied by the expansion of infrastructure, such as mobile banking services.

Meanwhile, mediation through regulations/policies has an insignificant effect. This can be caused by several factors, one of which is the lack of effectiveness of existing policy implementation. Although the government has issued various regulations to improve financial literacy and inclusion, such as the Indonesian National Strategy for Financial Literacy (SNLKI) 2021-2025 (Financial Services Authority, 2021). In practice, the implementation of these programs often faces challenges, such as a lack of coordination between institutions, limited resources, and low community participation. This is in line with research findings that show that despite supportive regulations, the level of financial literacy and inclusion in Indonesia has still not reached the expected target (Financial Services Authority, 2022).

In addition, social capital theory suggests that factors such as beliefs, norms, and social networks play a crucial role in driving financial inclusion. In the Indonesian context, low social capital can hinder the effectiveness of government policies in increasing financial inclusion. Research by Soetiono and Setiawan (2018) emphasizes the importance of social capital as a mediator between financial literacy and financial inclusion. Therefore, in the absence of strong social capital, government policies and regulations may not be able to effectively mediate the relationship between financial literacy and financial inclusion. The results of this study also indicate that the effectiveness of regulations is highly dependent on implementation, as revealed by Park & Mercado (2021) in the context of Southeast Asia. The Evans & Adeoye (2021) study also noted that regulatory instability can weaken the effect of this mediation, hence the need for consistent policies.

The difference in the power of effect between the two mediators can be explained logically by the fact that infrastructure is more concrete and directly facilitates access, while regulation is structural and takes time to have an impact. Ozili's research (2022) concludes that digital infrastructure (e.g. fintech) has a critical role in the modern era because it can reach remote populations, while regulation tends to affect the macro level. These findings are reinforced by Arora & Ratra (2023), who emphasize that synergy between literacy, infrastructure, and regulation is the key to holistic financial inclusion. Thus, the results of this study reflect the complexity of the relationships between variables, where multidimensional interventions are more effective than partial approaches.

CLOSING

Conclusion

Based on the results of the study, it was found that Financial Literacy has a significant influence on Financial Inclusion, Infrastructural Facility, and policies and regulations. In addition, Infrastructural Facilities and policies and regulations also contribute to Financial

Inclusion, although the relationship between policy and regulation and Financial Inclusion is only approaching significance. Mediation through Infrastructural facilities shows a significant influence of Financial Literacy on Financial Inclusion, while mediation through policies and regulations is not significant. These findings indicate that increasing financial literacy can increase financial inclusion directly as well as through infrastructure development.

Suggestions

It is imperative to enhance regulations that facilitate the advancement of financial infrastructure to promote financial inclusion, particularly in regions exhibiting a scarcity of access to banking services. The government should incentivize investments in both digital and physical financial infrastructure, encompassing fintech networks and banking services in underserved areas. Furthermore, an assessment of existing financial regulations and policies is essential to ensure they are more flexible and effective in fostering financial literacy and accessibility for the populace. Additionally, there is a need to broaden the scope of relevant financial education initiatives through collaboration among governmental entities, the private sector, and micro, small, and medium enterprises (MSMEs) to enhance public comprehension and engagement within the formal financial ecosystem. For subsequent inquiries, it would be beneficial to investigate additional factors that may moderate or mediate the interplay between Financial Literacy and Financial Inclusion, particularly concerning policy and regulatory dimensions. Moreover, employing longitudinal data or qualitative methodologies could yield more profound insights into the dynamics of relationships among these variables within a more extensive context.

REFERENCES

Ahamed, A. J. (2025). Chapter-1: Financial Literacy. *Social Science Research Network*. https://doi.org/10.2139/ssrn.5084835

Agustina, A. D., & Hafidh, A. A. (2025). The Influence of Financial Literacy, Financial Technology and Financial Inclusion on MSME Performance in Bandar Lampung City. *International Journal of Economics and Management Sciences*, *2*(1), 200–218. https://doi.org/10.61132/ijems.v2i1.450

Amin, mat, suhardi, suhardi, & Ahmad Fauzi, A. (2023). Pelatihan Manajemen Umkm Desa Sarang Mandi Kecamatan Sungai Selan Kabupaten Bangka Tengah. *Jurnal Gembira: Pengabdian Kepada Masyarakat*, *1*(1), 93–101. Retrieved from https://gembirapkm.my.id/index.php/jurnal/article/view/12

Babatunde, A. A. (2025). Financial literacy, infrastructural facility and financial inclusion of micro, small and medium enterprise owners in Nigeria. *Journal of Business Management and Accounting*, *15*(1), 79-90. https://doi.org/10.32890/jbma2025.15.1.5

Badan Kebijakan Fiskal. (2023). Indonesia Terus Mendorong Upaya Pengembangan Inklusi dan Literasi Keuangan UMKM di Kawasan ASEAN.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2010). Financial Access and Development: Theory and Evidence. *Journal of Economic Perspectives*, 24(3), 119-138.

Buhari, F., Rismawati, R., & Pribadi, I. (2024). The influence of financial literacy and financial inclusion on small and medium enterprises (SMES). *Advanced international journal of business, entrepreneurship and SME's*, *6*(22), 80–91. https://doi.org/10.35631/aijbes.622007

Chikalipah, S., Ofori, G., & Amoah, B. (2021). Digital Infrastructure and Financial Inclusion in Developing Economies. *Journal of Financial Technology & Development*, 10(2), 67-85.

Das, R. K., & Pattanaik, A. (2024). From Inclusion to Literacy: A Financial Journey in the Indian Landscape. *Journal of Investment, Banking and Finance*, *2*(1), 01–15. https://doi.org/10.33140/jibf.02.01.24

Dana, B. S. (2024). Inclusive growth in rural Indonesia: exploring the interaction between technology and financial inclusion. *Indonesian Journal of Islamic Economics Research*, *6*(2), 94–101. https://doi.org/10.18326/ijier.v6i2.1988

Fauzi, A. A., Nugroho, F., Firdaus, R., & Amin, M. (2023). Kewirausahaan di era society 5.0. Publica Indonesia Utama.

Farhani, A., & Taufiqurahman, E. (2022). Pengaruh Literasi Keuangan dan Inklusi Keuangan Terhadap Kinerja UMKM (Studi Kasus pada UMKM di Kabupaten Karawang Tahun 2021). *Jurnal Ilmiah Wahana Pendidikan*, 8(18), 480-490.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

González-Prida, V., Pariona-Amaya, D., Sánchez-Soto, J. M., Barzola-Inga, S. L., Aguado-Riveros, U., Moreno Menéndez, F. M., & Villar-Aranda, M. D. (2025). Exploring the Effects of Financial Knowledge on Better Decision-Making in SMEs. *Administrative Sciences*, *15*(1), 24. https://doi.org/10.3390/admsci15010024

Gustika, R., Rinofah, R., Maulida, A., Keuangan, L., Kredit, P., & Keuangan, K. L. (2024). The Influence of Financial Literacy, Credit Requirements, and Financial Report Quality on Access to Financing for Micro, Small and Medium Enterprises. *Jurnal Ilmiah Manajemen Kesatuan*. https://doi.org/10.37641/jimkes.v12i5.2772

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135.

Khoiriyah. (2021). Dampak Inklusi dan Literasi Keuangan terhadap Ketimpangan Pendapatan melalui Kredit UMKM di Indonesia tahun 2016 dan 2019. *Jurnal Riset Ekonomi dan Bisnis*.

Kusuma, M., Narulitasari, D., & Nurohman, Y. A. (2022). Inklusi Keuangan beserta Literasi Keuangan pada Kinerja beserta Keberlanjutan UMKM di Solo Raya. *Jurnal Among Makarti*, 14(2), 1-15.

Murini, M., & Mas'ud, A. (2025). The Role of Financial Literacy on Investment Decisions in Supporting Agricultural Development: What is the Future Agenda? *Journal of Global Innovations in Agricultural Sciences*, 309–318. https://doi.org/10.22194/jgias/25.1537

Nugroho, H., Wibowo, T., & Kartika, R. (2022). Community-Based Infrastructure Management and Financial Literacy: A Case Study in Rural Indonesia. *Asian Journal of Finance & Economics*, 11(1), 112-130.

Orlov, D., Cupák, A., & Paradowski, P. R. (2024). The Impact of Financial Literacy on Financial Inclusion - Beyond Standard Financial Instruments. *Ekonomické Rozhľady*, *53*(4), 243–267. https://doi.org/10.53465/er.2644-7185.2024.4.243-267

Otoritas Jasa Keuangan. (2021). Strategi Nasional Literasi Keuangan Indonesia 2021-2025.

Otoritas Jasa Keuangan. (2022). Survei Nasional Literasi dan Inklusi Keuangan (SNLIK) 2022.

Pandeirot, L. B., & Aseng, A. C. (2024). Closing the Gap between Financial Literacy and Financial Inclusion. *Jurnal Informatika Ekonomi Bisnis*, 443–447. https://doi.org/10.37034/infeb.v6i2.877

Pontes, M. D. M., Peñaloza, V., Monteiro, D. L. C., & Cavalcante, L. T. (2024). The impact of financial literacy on SMEs lending conditions. *Caderno Pedagógico*, *21*(10), e9825. https://doi.org/10.54033/cadpedv21n10-355

Prastica, P. (2020). Peran Literasi Keuangan beserta Inklusi Keuangan pada Kinerja UKM di Kabupaten Pasuruan. Skripsi. Jurusan Manajemen, Universitas Negeri Malang.

Prabowo, R., & Handayani, M. (2020). The Impact of Financial Literacy on SMEs' Investment in Digital and Physical Infrastructure. *Indonesian Business and Economics Journal*, 6(3), 78-95.

Putra, F. H., Suhardjanto, D., Trinugroho, I., & Arifin, T. (2024). Overcoming Barriers to Inclusion: The Role of Financial Literacy and Digital Divide in Expanding Financial Access in Indonesia. *Journal of Ecohumanism*, *3*(8). https://doi.org/10.62754/joe.v3i8.5608

Rahmawati, N., & Yusuf, B. (2021). Financial Literacy and Local Government Budget Efficiency in Infrastructure Development. *Journal of Public Finance & Policy*, 10(2), 99-115.

Sahay, R., Cihak, M., & N'Diaye, P. (2022). Financial Inclusion and the Role of Infrastructure: Evidence from Emerging Markets. *IMF Economic Review*, 15(3), 132-154.

Sari, M., Wijaya, H., & Sudirman, D. (2023). Banking Policies and Financial Literacy: Their Impact on Infrastructure Investment. *International Review of Financial Studies*, 15(4), 213-235.

Sayari, K. (2024). *Role of Financial Literacy in Maximizing the Impact of Decentralized Finance on Financial Inclusion* (pp. 182–202). IGI Global. https://doi.org/10.4018/979-8-3693-3346-4.ch011

Setiawan, D., & Lestari, A. (2021). The Role of Financial Literacy in Enhancing Public-Private Partnership for Infrastructure Development. *Journal of Economic Development Studies*, 8(2), 45-60.

Sharma, T. C., & Pokharel, A. (2025). Financial Literacy and Investment Decisions: A Study of Salaried Individuals in Kathmandu. *Adh्यayan(अध्ययन)*, *12*(01), 21–31. https://doi.org/10.3126/aj.v12i01.73460

Soetiono, S., & Setiawan, A. (2018). Pengaruh Literasi Keuangan terhadap Inklusi Keuangan dengan Menggunakan Modal Sosial sebagai Variabel Mediator.

Suryanto. (2022). Pengaruh Literasi Keuangan, Inklusi Keuangan, dan Inovasi Terhadap Kinerja UMKM. *Reviu Akuntansi dan Bisnis Indonesia*.

Suwandi, S., & Syarif, M. F. (2025). Financial Literacy: A Comparative Analysis Between Employees and Farmers. *Journal of Global Innovations in Agricultural Sciences*, 297–307. https://doi.org/10.22194/jgias/25.1520

Wallace, D., & Hewa Wellalage, N. (2024). The impact of financial literacy on financial inclusion. *Australian Journal of Management*. https://doi.org/10.1177/03128962241270809

Wijayanti, L., Santoso, F., & Kurniawan, R. (2022). Financial Literacy and Alternative Investment for Infrastructure Funding: Evidence from Indonesia. *Southeast Asian Economic Review*, 14(1), 67-89.

Yeniwati, Y., Elfindri, E., & Bachtiar, N. (2024). Social Economic Analysis of Financial Inclusion and Poverty in Indonesia. *Journal of Economics, Finance and Management Studies*, *07*(12). https://doi.org/10.47191/jefms/v7-i12-09

Zai, S., Hulu, P. F., Bate'e, M. M., & Bu'ulolo, N. A. (2024). The Effect of Financial Literacy on Financial Behavior of Micro, Small and Medium Enterprises (SMEs) in Ulugawo District, Nias Regency. *Golden Ratio of Data in Summary*, *4*(2), 457–466. https://doi.org/10.52970/grdis.v4i2.564