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The Role of Financial Technology (Fintech) in Financial Inclusion and MSME Growth in Indonesia

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Abstract: *Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy with significant contributions to GDP and employment. However, their access to formal financial services is still limited due to strict requirements from conventional financial institutions and high levels of business informality. Financial technology (fintech) is present as a more inclusive financing alternative through services such as peer-to-peer (P2P) lending and digital payments. Fintech offers fast processes, no collateral, and product flexibility, but its effectiveness is highly dependent on the financial and digital literacy of MSME actors. This study uses a qualitative approach with a case study method in two different regions to explore access, impact, and challenges of fintech use by MSMEs. Initial results show that although fintech expands access to financing and encourages digitalization, there is still a risk of over-indebtedness, inequality in digital infrastructure, and low understanding of contracts and financial obligations. Therefore, synergy is needed between the government, regulators, and service providers to strengthen financial literacy and create a fair and sustainable digital ecosystem. This research is expected to contribute to the development of policies that support the comprehensive digital financial transformation of MSMEs, as well as ensuring that fintech becomes an instrument of empowerment, not a source of new vulnerabilities.*

Keywords: *Fintech; Financial Inclusion; MSMEs*

INTRODUCTION

Although Micro, Small, and Medium Enterprises (MSMEs) contribute more than 60% to Gross Domestic Product (GDP) and absorb around 97% of the workforce in Indonesia (Ministry of Cooperatives and SMEs, 2023), their access to formal financial services is still very limited. One of the main obstacles is the requirements imposed by conventional financial institutions, such as the requirement to have physical collateral, a clear credit history, and a formal business structure. The majority of MSMEs in Indonesia still operate informally, without adequate financial records, so they are considered high risk by financial institutions. In addition, geographical factors are also a significant obstacle, especially for business actors in remote areas or outside Java who do not have easy access to bank branches or other formal financial services.

This gap in access creates systematic financial exclusion, hindering the potential for maximum growth of MSMEs. Based on the National Survey of Financial Inclusion (SNKI) by OJK in 2022, only around 30% of MSMEs have access to formal credit, while the rest rely on informal funding sources that are often unsustainable and costly. This situation shows that the conventional financial system is not yet fully adaptive to the characteristics and specific needs of MSMEs. Therefore, there needs to be innovation and breakthroughs in the financing system, one of which is through financial technology (fintech), which can offer more inclusive and adaptive solutions to the realities of MSMEs in the field.

The development of digital technology in Indonesia in the last decade has become a catalyst for the emergence of various technology-based financial innovations, or what is known as financial technology (fintech). According to Kurniansyah (2019), the number of fintech companies has grown significantly in the last five years, with dominance in the peer-to-peer (P2P) lending sector, digital payments, and micro-investment

services. This growth is driven by the rapid internet penetration that has reached more than 77% of the population and the use of smartphones that have reached most MSMEs, even in non-urban areas. Fintech not only offers easy access, but also speed in the loan approval process, transparency of costs, and product flexibility that can be adjusted to the needs and characteristics of micro-businesses (Qur'anisa et al., 2024). This provides a great opportunity for MSMEs to gain access to alternative financing outside the conventional banking system which has so far been difficult to reach.

However, the growth rate of fintech also raises new challenges and problems that need to be criticized. One crucial issue is the unequal distribution of digital literacy and financial literacy among MSMEs, which can lead to new risks such as over-indebtedness, digital fraud, and dependence on fintech services without a comprehensive understanding of the obligations and risks that accompany them (Mulwa & Yahya, 2025). A study by Mukti et al (2023) shows that although the financial inclusion index has increased to 85.1%, the financial literacy index is still lagging behind at 49.7%. This inequality opens up loopholes for illegal online lending practices that take advantage of people's ignorance. Therefore, there needs to be synergy between the government, regulators, fintech service providers, and educational institutions in strengthening digital-based financial literacy, as well as creating an adaptive but protective regulatory framework. Fintech does promise broader financial inclusion, but without an inclusive and sustainable approach, its existence can actually create new forms of digital and structural exclusion.

The existence of fintech as an instrument to expand financial inclusion not only has an impact on increasing access to financing, but also paves the way for a comprehensive digital transformation of MSMEs. Fintech platforms that provide digital payment services, automatic accounting, and

application-based financial records have encouraged MSMEs to be more digitalized in business management. According to the 2023 World Bank report in Ramdanyah & Ganika (2024), MSMEs that adopt digital solutions tend to have 2.5 times faster revenue growth than those that are not digitalized. This shows that fintech is not just a provider of funds, but also a business transformation partner that can increase the efficiency, transparency, and competitiveness of MSMEs in the digital economy ecosystem. On the other hand, collaboration between fintech and e-commerce platforms also opens up wider market access, allowing MSMEs to reach consumers outside their geographic area and minimize dependence on conventional distribution.

However, this positive impact can only be felt optimally if there is equal access and guarantees for digital security. The challenges often faced by MSMEs in remote areas are limited digital infrastructure, such as unstable internet signals, affordability of technological devices, and relatively high access costs (Rachmatsyah, 2025). In addition, trust in fintech platforms is still an issue among micro-entrepreneurs, especially after the rampant cases of data misuse and unethical collection practices by some online loan service providers. Therefore, the government and regulators need to strengthen supervision of the fintech industry, while encouraging the development of an equitable, inclusive, and ethical digital ecosystem. Programs such as the Digitalization of MSMEs by the Ministry of Communication and Informatics (Kominfo) and MSME Go Digital from Bank Indonesia are good initial steps, but they need to be expanded and synergized with digital literacy strategies and technology incentives to ensure that fintech is truly able to narrow, not widen, the economic and financial gap in Indonesia.

Although fintech promises to accelerate MSME growth through more inclusive and efficient financial access, it is important to assess the extent to which this

growth is sustainable and not merely short-term. Many MSMEs who obtain capital from fintech platforms use the funds only for short-term operational consumption or to cover previous debts, not for productive expansion or increasing business capacity. Around 45% of MSMEs using peer-to-peer lending services use their funds for urgent needs that are consumptive in nature, not long-term investment. This phenomenon raises critical questions about the effectiveness of the fintech financing model in encouraging healthy MSME growth. Dependence on short-term loans that are not balanced with financial literacy and mature business strategies can actually trap MSMEs in a cycle of debt that is counterproductive to growth (Mahastanti et al., 2025).

Furthermore, the dynamics of fintech regulation in Indonesia are also an important factor in ensuring the sustainability of positive impacts on MSMEs. Although the Financial Services Authority (OJK) has issued POJK No. 10/POJK.05/2022 concerning Information Technology-Based Joint Funding Services, its implementation in the field still faces challenges in terms of supervision, transparency reporting, and consumer protection. Many MSMEs do not fully understand the provisions of effective interest, penalties, and default clauses in fintech contracts, which can ultimately lead to unfair power relations between service providers and users. Therefore, a policy framework is needed that not only encourages the growth of the fintech industry, but also prioritizes the principles of sustainability, fair access, and protection for small business actors. The integration of digital financial policies, MSME literacy, and adaptive regulations is a crucial foundation so that the role of fintech in MSME growth is not only superficial or short-term, but truly transformative and sustainable in building an inclusive national economy.

METHOD

This study uses a qualitative approach with a case study method to explore in depth the role of financial technology (fintech) in increasing financial inclusion and encouraging the growth of MSMEs in Indonesia. The qualitative approach was chosen because it allows researchers to understand the complex social and economic realities from the perspective of MSME actors and fintech service providers, as well as to reveal the dynamics of interactions, perceptions, and challenges that cannot always be measured quantitatively.

The case study will focus on several MSMEs that actively use fintech services, especially in the form of peer-to-peer (P2P) lending and digital payments. This research will take place in two different areas, for example, one in an urban area such as Jakarta, and one in a semi-rural area such as Yogyakarta or Banyuwangi—to see the differences in fintech implementation in different geographic contexts and digital infrastructure. Data collection techniques include in-depth interviews with MSME actors, direct observation, and documentation from the fintech platforms used. In addition, key informants will also include representatives from fintech service providers, regulators (OJK), and MSME support institutions.

The data obtained will be analyzed using thematic analysis, by identifying thematic patterns that emerge from interview transcripts and observations. The main focus of the analysis is directed at three aspects: (1) how MSMEs access and utilize fintech services; (2) the real impact on their business growth; and (3) the challenges and risks they face during the financial digitalization process. Data validity is maintained through source triangulation and member checking. The results of this study are expected to provide empirical contributions in formulating strategies for strengthening technology-based financial inclusion in a more equitable, inclusive, and sustainable manner.

RESULTS AND DISCUSSION

The Role of Fintech in Increasing Access to Financing for MSMEs

1. Flexibility and Efficiency of Fintech Services as an Alternative for UMKM Financing

MSMEs in various countries, including Indonesia, often face significant difficulties in accessing financing from formal financial institutions due to strict requirements and bureaucratic processes. Traditional banks require collateral and complete documents, which are often not owned by micro-entrepreneurs, so they tend to be considered “unbankable” (Suryono et al., 2021). In this context, fintech has emerged as a financial innovation that provides solutions by offering a more flexible and efficient loan application process. A study by Batubara & Anggraini (2022) emphasized that the digitalization of financial services allows for accelerated processes and risk assessments using alternative data such as digital transaction behavior, which were previously not utilized by conventional financial institutions. This is in line with the findings of the study by Khoiriyah & Ansori (2024) which stated that fintech P2P lending can reduce the disbursement time from weeks to just a few days, as well as eliminate the need for collateral that burdens MSMEs.

These advantages make fintech a very relevant financing alternative for MSMEs that have experienced a gap in financial access (Aprinisa et al., 2025). However, although the process is faster and easier, the main challenge that arises is the increased risk of non-performing loans due to the lack of in-depth assessments (Wu et al., 2022). Limited data verification and reliance on digital data that has not been fully standardized have the potential to cause non-performing loans and defaults. Therefore, effective risk management is the key to the sustainability of the fintech business model in financing MSMEs.

As an illustration, Kredivo, one of the fintech platforms in Indonesia, has proven its ability to accelerate the process of applying for unsecured loans with an alternative data-based

assessment system. Based on internal reports and customer surveys, Kredivo is able to reduce the disbursement time to 1-2 days, providing much faster access to capital than banks (Kredivo, 2022). However, as stated by Ardiansyah & Yazid (2025), the default rate on fintech platforms like this tends to be higher due to limited risk analysis. Another example is Modalku, which facilitates MSMEs in East Java to obtain business capital through online applications and digital document verification. The Modalku case study shows that digitalization reduces barriers to access to capital so that MSMEs can expand their businesses more quickly. However, Modalku also adopts periodic risk evaluations as an effort to mitigate the risk of non-performing loans.

Overall, the literature and empirical studies show that fintech increases the flexibility and efficiency of MSME financing by utilizing digital technology and alternative data to assess creditworthiness more inclusively and quickly (Supriyadi et al., 2024). However, to maintain the stability of the financial system and protect MSME actors, strengthening data verification mechanisms and risk management must continue to be developed. Thus, fintech is not only a short-term solution to expand financial access, but can also play a strategic role in long-term inclusive economic development.

2. Impact of Fintech Access on Business Growth: Productive or Consumptive?

Financing access through fintech has opened up great opportunities for MSMEs to obtain business capital in an easier and faster way compared to conventional banking. However, although this convenience is very helpful, the use of fintech funds does not always have a positive impact on business growth. In reality, there are two different patterns of fund use. Some MSMEs use fintech loans productively, namely to increase stock, buy new production equipment, or develop digital marketing, which has an impact on increasing business capacity and expansion. Conversely, there are also MSME actors who use these funds for consumptive purposes, such as paying old debts, covering urgent operational costs, or

personal needs without a long-term business plan. This raises the risk that fintech funds will only be a temporary solution and will not significantly increase business productivity.

Various studies support this statement. According to a study by Purwanto et al (2022), fintech provides more inclusive access to financing for MSMEs, but the effectiveness of its use is highly dependent on the level of financial literacy and managerial abilities of business actors. Another study by Herdinata & Pranatasari (2020) found that MSMEs supported by financial education and assistance tend to use fintech capital for productive investments that drive business growth, while without assistance, funds tend to be used to meet consumptive needs or cover temporary liquidity shortages. This is in line with the working capital theory in financial management which emphasizes the importance of capital management with long-term business strategies to achieve business sustainability.

The main factor that differentiates this usage pattern is the existence of mature business planning and the level of financial literacy of business actors. MSMEs that have clear planning and understanding of financial management tend to use fintech funds for business investments that generate growth. In addition, mentoring and education from fintech providers or supporting institutions are also very helpful in directing the use of funds strategically. Without this support, loan funds can end up as additional debt burdens without being accompanied by increased income, which actually hinders business development.

For example, in a catering MSME in Bandung that borrowed Rp 20 million from fintech, the loan was used to buy raw materials wholesale, buy kitchen equipment, and develop digital marketing through websites and social media. As a result, within six months the business experienced a 40% increase in turnover and succeeded in expanding its customer reach. On the other hand, there is a grocery trader in Surabaya who used Rp 10 million in fintech funds only to pay off old debts and cover daily operational costs without making new investments. As a result, the business did not show any improvement and was instead

burdened by increasing debt. This case study illustrates the importance of financial assistance and literacy so that fintech loans can be used productively.

Thus, although fintech access brings great opportunities for MSMEs to grow, the successful use of funds is highly dependent on the right capital management strategy. Fintech providers and other stakeholders need to provide education and assistance so that the funds provided can be used to support sustainable business expansion, not just as a short-term consumptive solution. This will ensure that fintech financing truly makes a positive contribution to the economic growth of MSMEs.

The Challenges of Financial Digitalization and Literacy Inequality among MSMEs

1. Digital Financial Literacy Gap as the Main Obstacle to Fintech Adaptation by MSMEs

The digital financial literacy gap is one of the main obstacles in the adoption of fintech services by MSMEs, especially in semi-peripheral areas that have limited access to information and educational resources. Many MSMEs do not fully understand the mechanisms of digital loans, electronic contracts, and the calculation of interest and additional fees attached to fintech services, so they have the potential to make inappropriate financial decisions. This condition can lead to over-indebtedness or dependence on unhealthy loans, which ultimately threatens the sustainability of their businesses. OJK data (2022) shows that the national financial literacy index is still below 50%, which reflects the low level of public understanding of financial products, including relatively new and complex fintech products. A study by Affandi et al (2025) stated that low financial literacy contributes significantly to poor financial behavior, such as taking on debt without careful calculation and lack of readiness to face financial risks. This is exacerbated by the aspect of digital literacy, which is an important prerequisite for people to be able to utilize digital technology effectively and safely. In the

context of MSMEs, low digital financial literacy limits their ability to access innovative financing through fintech which actually offers fast and flexible financing solutions.

The impact of low literacy is very real and has been documented in various studies. For example, research by Niu & Sumendap (2024) found that MSMEs who do not understand digital loan contracts tend to experience financial difficulties due to not anticipating hidden costs and compound interest charged. In addition, the lack of digital literacy also increases the risk of illegal fintech fraud, as explained in the study by Abrar & Ihza (2025) which showed high levels of fraud in user segments with low digital literacy. Therefore, intensive and sustainable educational interventions are very important to improve MSMEs' understanding of fintech products, strengthen risk management capabilities, and encourage the wise use of financial technology. Education and mentoring programs involving the government, OJK, fintech, and MSME communities have proven effective in several case studies in the field.

For example, in a semi-peripheral district in East Java, MSMEs have begun to utilize fintech for working capital financing but still have difficulty understanding the terms of the fintech products. A local survey revealed that most MSMEs do not read electronic contracts carefully and do not understand the risks of floating interest rates and hidden administrative fees, which risks causing over-indebtedness. Another case found was that MSME actors became victims of illegal fintech applications due to a lack of understanding of digital security. In response to this, the local government together with the OJK and several local fintechs implemented a digital financial literacy education program that was carried out directly with an everyday language approach and real case examples. Direct assistance was also provided to ensure that MSMEs could apply for loans correctly and understand their contractual obligations. After six months of implementation, the level of understanding of MSMEs increased significantly and default cases decreased. This finding is in line with the results of a study by Putri et al (2024) which



emphasized the importance of financial education to improve MSME financial management and reduce financial risk. Thus, efforts to improve digital financial literacy not only address the gap in understanding but also open up opportunities for MSMEs to use fintech in a healthy and sustainable manner, especially in areas that have so far been less touched by formal financial services.

2. Digital Infrastructure and Technology Access Gap as Inhibiting Factors in Financial Inclusion

Digital infrastructure is an important foundation in supporting financial inclusion, especially for MSMEs who want to utilize fintech services. However, the gap in access to technology is still a major challenge, especially for MSMEs in remote or semi-peripheral areas. In these areas, internet networks are often unstable or even unavailable, so digital transaction activities are hampered. In addition, the cost of digital devices such as smartphones or capable computers is often too high for small-scale MSMEs with limited capital. The lack of technical support and digital literacy also adds to their difficulties in using fintech services safely and effectively. According to research by Asriyana et al (2025) in the Global Findex Database, one of the main obstacles to accessing digital finance in developing countries is limited infrastructure and ownership of digital devices. As a result, MSMEs in remote areas have difficulty accessing digital financial services consistently, strengthening the financial inclusion gap between business actors in urban centers and remote areas. This condition has the potential to widen the economic gap because MSMEs in urban areas that have easier access to fintech can develop faster and gain easier access to capital, while MSMEs in other areas are left behind and remain dependent on less efficient conventional systems.

To bridge this gap, policy interventions that focus on developing a digital ecosystem are urgently needed. Efforts such as building and improving the quality of internet networks in remote areas, providing digital device subsidies, and digital literacy training and technical assistance for MSMEs have proven

effective in expanding access to fintech evenly. A study by the World Bank (2020) confirmed that developing inclusive digital infrastructure can increase the participation of small business actors in the formal financial ecosystem. Furthermore, research by Hasbiah et al (2024) shows that digital device subsidies and increased connectivity significantly increase the use of digital financial services in vulnerable communities. For example, the MSME digitalization program implemented in several regions in Indonesia such as East Nusa Tenggara (NTT) and Papua has shown positive results. Initially, MSMEs in these areas experienced limited access to internet networks and a lack of devices that support the use of digital services, so the rate of fintech adoption was very low. Through the provision of smartphone subsidies, the development of 4G networks, and intensive training and assistance, there has been a significant increase in the use of digital financial services. In one year, the number of MSMEs utilizing fintech increased drastically from less than 10% to more than 60%. This not only increases the operational efficiency of MSMEs, but also opens up opportunities for easier and more transparent access to capital. Thus, the intervention has succeeded in reducing the gap in access to technology and strengthening financial inclusion more evenly between central and peripheral areas.

CONCLUSIONS

Fintech plays an important role in increasing access to financing for MSMEs by offering a fast, flexible, and collateral-free loan process. This helps overcome the limitations of MSMEs in meeting conventional banking requirements. The use of digital technology and alternative data allows for more inclusive credit assessments. However, challenges arise in managing credit risk due to limited data verification. In addition, the effectiveness of fintech funds is highly dependent on the financial literacy of MSME actors. Consumptive use of funds without business planning can lead to unproductive debt. Low financial and digital literacy are major obstacles to optimal use of fintech. The gap in



technological infrastructure also limits access in remote areas. Therefore, education, assistance, and strengthening of infrastructure are essential. With comprehensive support, fintech can drive sustainable MSME growth and strengthen national financial inclusion.

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