

Challenges and Opportunities in Fintech Adoption by Micro Enterprises: A Case Study of Magelang, Indonesia.

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ABSTRACT

Keywords: MSMEs; financial technology; micro business.	Technological advancements, particularly in the field of Financial Technology (Fintech), play a significant role in the sustainability of Micro, Small, and Medium Enterprises (MSMEs). This study aims to assess the level of Fintech utilization in MSME operations in Magelang Regency, with a focus on Micro Enterprises. The research employs a descriptive qualitative method, combining a literature review with interviews and observations of several MSME business actors. The findings reveal that while Fintech holds the potential for supporting MSME growth, its adoption among micro-businesses in Magelang remains limited. Fintech is largely used as a supplementary tool rather than a core component of business operations. To fully maximize the utilization and benefits of Fintech in the Microbusiness sector, MSMEs require guidance and outreach programs on digital literacy and the practical application of Financial Technology. Additionally, infrastructure support, such as reliable internet connectivity, is essential to ensure access to information across various regions.
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Introduction

Along with the development of the era, the rapid development of technology has resulted in significant updates in various fields. One of these updates can be found in the economic sector, where technology has simplified and enhanced numerous economic activities, making financial services easier and more efficient (Rahardja et al, 2019). Technological advancements have given rise to financial services that integrate with digital technology, producing innovative products. (Hadad, 2017) explains that the emergence of a new phenomenon known as Financial Technology (Fintech), caused by innovations that occur in the financial services industry, has been changing the world. These advancements, particularly in Financial Technology (Fintech), are essential in shaping the sustainability and competitive edge of Micro, Small, and Medium Enterprises (MSMEs), especially in the increasingly digital economy. By utilizing information technology, fintech has brought about significant changes in financial services, ranging from electronic payments, peer-to-peer lending, and virtual investment, to personal financial management.

The emergence of Fintech as a financial innovation provides good news for one of the economic sectors, namely Micro, Small and Medium Enterprises (MSMEs). Law No. 20 of 2008 explains that MSMEs are a form of independent productive business whose ownership is personal or individual business entities. MSMEs as one of the drivers of the economy in Indonesia should also receive encouragement from the presence of Fintech. For micro, small, and medium businesses that want to grow, fintech offers several options in terms of financing or capital, payments, investments, and also marketing. Fintech is expected to be more inclusive because of the many features offered by the Fintech application (Winarto, 2020).

However, optimizing the role of Fintech in MSMEs will be passive if MSME actors are not equipped with adequate understanding in utilizing the existence of Fintech. Inadequate knowledge about digitalization will result in less effective and efficient use of technology (Arumsari et al, 2022). Technological advances that are not balanced with the development of human resources will not provide the effectiveness of the role of technology. Thus, the role of digital literacy education and human resource development is very important to realize superior product results that can compete in the digital economy era.

The convenience of Fintech can be a solution to overcome capital and financing problems that are often experienced by people in their businesses. However, the capital offered by Fintech is not entirely a solution to overcome MSME capital. One example is the Peer to Peer (P2P) Product more commonly called Pinjol. Although information technology-based funding services offer many conveniences for the community (Aisah, Rizkiawan, & Hermansyah, 2024), it is necessary to anticipate that peer-to-peer lending products (online loans) can be misused for economic crime (Kristian, 2022). The emergence of illegal capital service products has also become an issue that makes people reluctant to use them. Therefore, the government needs to provide legal protection for victims of economic crimes, so that limited access to Fintech can be minimized.

Not all MSMEs can benefit from or require the convenience of Fintech. For example, Micro-Scale Enterprises do not play much role in Fintech in their business because the target market and business implementation procedures are not appropriate when adopting Fintech assistance. Studies on the role of Fintech on MSMEs in the literature on suboptimal utilization require ongoing analysis. In general, previous studies have emphasized the benefits of Fintech that will be provided to MSMEs if they play it in their business activities as stated by (Rahardjo, Ikhwan, & Siharis, 2019) the use of Fintech can provide effectiveness and efficiency in MSME business activities so that it creates opportunities to advance the economy but is also accompanied by its challenges. Ningsih (2020) in her research explains the importance of the role of Fintech for MSMEs, Fintech is expected to be able to provide innovative potential for the growth of MSME actors in Indonesia.

This research is crucial for enhancing the quality of MSMEs, particularly Micro enterprises, which still encounter significant challenges in accessing Fintech. This research aims to identify the key obstacles hindering micro-enterprises from fully

integrating Fintech into their business operations and to propose actionable solutions. This research is important to cover the shortcomings of previous research and as a consideration for the Magelang Regency Cooperatives and Small and Medium Enterprises Service in taking action to increase the growth of MSMEs in Magelang Regency. The research will answer questions about what problems are faced by micro-enterprise actors in utilizing Fintech for their businesses. To answer this question, the authors will first discuss financial technology and its impact on MSMEs when they incorporate Fintech into their operations. Following this, the authors will outline the specific issues related to the limited adoption of Fintech in Micro Enterprises. Finally, an analysis will be conducted to propose solutions to the challenges identified.

Method

The author applies a descriptive qualitative research method, which allows for a deep understanding of the phenomena or conditions currently affecting the object of study. Descriptive research aims to collect information related to conditions that reflect the actual situation in the field (Hikmawati, 2017). This method is employed to obtain an accurate and systematic picture of the observed conditions. Primary and secondary data used in this study are sourced from data published by various government agencies, such as the Financial Services Authority and the Magelang Regency Regional Government. The analysis is further supported by reviewing previous articles related to the main issue being analyzed.

Primary data were gathered through structured interviews with key stakeholders in micro-enterprises and supplemented with direct field observations. The sample consisted of 10 micro-business owners selected based on their varied levels of Fintech adoption. These interviews provided authors with the opportunity to gain a comprehensive and contextual understanding of respondents' experiences, opinions, and perceptions regarding the research topics. Interviews were selected as a method to directly gather information from MSME business actors, ensuring the reliability of the data used for analysis. Observation was conducted to observe behaviors and situations relevant to the study's focus.

Results and Discussion

The development of various thoughts in life is aimed at obtaining results in the form of convenience in running life. Likewise, the development of technology is increasingly skyrocketing by producing breakthroughs in innovation in various fields. The possibility of technology has been proven by various outputs produced that can solve various problems in human life. Technology is a bridge for humans that allows them to do or fulfill various needs more effectively and efficiently. Nowadays, the role of technology is becoming increasingly important and has become a basic need in various aspects ranging from economics, transportation, communication, government, education, and almost all. In the economic aspect, there is a synergy between technology and finance so it gives birth to Financial Technology, which can be called Fintech.

(Fauji & Widodo, 2020) stated in their book "Financial Technology," the term Fintech likely originated in the 1990s during discussions about innovation and the "Smart Card Forum" alliance led by Citicorp chairman, John Reed. Traditionally, Fintech encompasses various innovations in financial solutions, including capital, payments, bookkeeping, marketing, and investment, all of which leverage the power of technology. They provide digital wallets, peer-to-peer payment applications, and mobile payment solutions that enable individuals and businesses to transfer money securely and with ease. Fintech platforms and apps assist users in managing their finances more efficiently (Gomber, Kauffman, Parker, & Weber, 2018).

In Indonesian Banking Regulation No.19/12/PBI/2017, Fintech is defined as innovation in products, services, technology, and new business models that impact the stability of the currency and financial system (Bank Indonesia, 2017). This involves applying technology to create a more efficient, smooth, secure, and reliable financial system, particularly in payment systems. Fintech combines financial services with technology, allowing for the transformation of traditional business models into innovative ones. Fintech encompasses a wide range of services including financing digital payments, investment platforms, automated bookkeeping, and innovative marketing solutions, all of which aim to improve operational efficiency and access to financial services for businesses.

A study conducted by the Indonesian Fintech Association shows that most Fintech companies in Indonesia are currently payment companies (44%), followed by aggregators (15%), financing (15%), financial planning for individuals and companies (10%), crowdfunding (8%), and others (8%) (Kusuma & Asmoro, 2020). In Indonesia, Fintech can be classified into several types (Fauji & Widodo, 2020): Peer-to-peer (P2P) Lending and crowdfunding, Investment Risk Management, Market Aggregator, and Payment.

P2P lending and crowdfunding are platforms that connect those in need of funds with those who have funds or investors. These platforms are highly efficient because they operate entirely online. KoinWorks, Modalku, Investree, and Amarthia are examples of Fintech P2P lending and crowdfunding products.

Investment Risk Management serves as a financial management tool that uses data provided by users to facilitate financial management and planning. A Robo-advisor is one type of Fintech that offers financial services through e-trading and e-insurance platforms. These platforms use information technology to provide portfolio management services automatically, relying on algorithms to help investors manage their finances and investments.

An information technology service known as an aggregator integrates systems from various online sources to collect and present information that provides added value to consumers, allowing them to choose products or services according to their preferences. Aggregators typically include a variety of information, financial advice, credit cards, and investments. In this Fintech, users can obtain qualified information to help in making a decision, among those included in this Fintech such as KreditGogo, Tunaiku, Cermati, and Cekaja.

Payment is an innovation in digitalizing the payment system by providing payment system services through digital media such as smartphones. This type of Fintech embeds information technology so that users can make financial transactions without going through a bank intermediary face-to-face. This product is the most familiar and often used by the public such as payment gateways and e-wallets. OVO, Gopay, Shopeepay, LinkAja, DANA, Kartuku, and Doku are examples of products that fall into the classification of this type of Fintech.

The development of Fintech implementation is driven by various factors that have brought it to its current state. Masruil et al. (2022) explain that several key factors contribute to the progress of Fintech, including the following factors:

1. Psychological Change: an increase in daily needs gives rise to a desire that is aimed at meeting needs in a more practical way. This condition is one of the bases for the use of fintech by the community with the aim of meeting needs practically and efficiently and leaving behind the classic way.
2. Digital progress: Technological modernization is a shift from classical methods to more innovative systems. This condition can provide convenience to the community in carrying out various activities as the benefits provided by smartphones as one of them.
3. Changes in trends: Changes and acceleration of trends in society are caused by rapid and consistent development and innovation.

Decrease of Loyalty to Brands and Institutions: Brands and institutions do not influence current consumer decisions to buy goods or services. Instead, they make decisions to buy goods or services more carefully and quickly, especially for the millennial generation.

4. Ease of access: The existence of open services and information systems makes transactions easier to access. The development of access that begins with technological advances opens up new opportunities.
5. Offering profitable products: If the product offers benefits, consumers will be interested in buying it.
6. Government protection: The government implements a supervisory policy so that the fintech industry can develop and advance. The Financial Services Authority (OJK) is the body authorized in Indonesia to supervise fintech companies.

Moreover, The implementation of Fintech in Indonesia is regulated by the Financial Services Authority (OJK) and Bank Indonesia (BI). These regulations aim to create a healthy and sustainable Fintech ecosystem, protect consumers, and encourage innovation in the financial sector. Fintech operators must comply with these regulations to operate legally and reliably in Indonesia. Below are some of the main regulations governing the Fintech sector:

1. OJK Regulation No.77/PJOK.01/2016 concerning Information Technology-Based Lending and Credit Services.
2. OJK Regulation No.13/PJOK.02/2018 concerning Digital Financial Innovation in the Financial Services Sector.

3. OJK Regulation No.18/PJOK.07/2018 concerning Consumer Complaints Services in the Financial Services Sector.
4. OJK Regulation No.35/POJK.05/2018 concerning the Implementation of Venture Capital Companies.
5. Bank Indonesia Regulation No.19/12/PBI/2017 concerning the Implementation of Financial Technology.
6. Bank Indonesia Regulation No.20/6/PBI/2018 concerning the Implementation of Electronic Money.
7. Bank Indonesia Regulation No.22/23/PBI/2020 concerning Payment Systems in Indonesia.
8. OJK Circular Letter No.18/SEOJK.05/2017 concerning the Registration, Monitoring, and Implementation of IT-Based Loan and Credit Services.

Micro, Small, and Medium Enterprises (MSMEs) are key drivers of the economy in Indonesia. Hanim et al. (2022) describe MSMEs as independent, productive business ventures undertaken by individuals or business entities across various economic sectors. Furthermore, according to Law No. 20 Article 1 of 2008 concerning Micro, Small, and Medium Enterprises (Indonesia, 2008), they are defined as follows:

A micro-enterprise is a productive business by individuals or entities with maximum net assets of IDR 50,000,000 (fifty million rupiahs) excluding land and buildings for business premises or a maximum annual income of IDR 300,000,000 (three hundred million rupiahs).

A small enterprise is an economic business sector that stands independently and is managed by individuals or entities but is not part of a branch of a company that is owned, controlled or is a direct or indirect part of. Small enterprises have net assets exceeding IDR 50,000,000 (fifty million rupiahs) to less than or equal to IDR 500,000,000 (five hundred million rupiahs) excluding land and buildings for business premises, and have an annual income exceeding IDR 300,000,000 (three hundred million rupiahs) and a maximum of IDR 2,500,000,000 (two billion five hundred million rupiah).

A medium enterprise is an independent productive economic business managed by individuals or entities but is not a subsidiary or branch of a company. Medium enterprises have net assets exceeding Rp. 500,000,000 (five hundred million rupiah) and a maximum of Rp. 10,000,000,000 (ten billion rupiah) excluding land and buildings where the business is located. Medium enterprises have annual revenues exceeding Rp. 2,500,000,000 (two billion five hundred million rupiah) to Rp. 50,000,000,000 (fifty billion rupiah).

The differentiation of each line of MSMEs can be traced based on their characteristics. According to Hanim et al. (2022), each line of MSMEs has its characteristics as follows.

Micro enterprises produce more flexible products because they can change, the place of business is not yet fixed, financial administration is not yet or is still simple, their finances are still one with personal finances, lack of entrepreneurial spirit, low level of education, do not have optimal banking access, and do not have a business license.

Small enterprises produce more consistent products, have a fixed place of business, start implementing simple financial administration, separate business finances from personal finances, start making business balance sheets, have legal permits and NPWP, have an entrepreneurial spirit and entrepreneurial experience, have more adequate banking access, but business management is not yet optimal.

Medium enterprises have more organized business management, are able to implement more organized financial administration to facilitate auditing and other financial examinations, implement employment regulations, have clear business legality, have optimal access to funding sources, and have more educated and trained human resources.

The development of MSMEs in Indonesia is one of the priorities in national economic development. MSMEs are expected to be able to collaborate with the government to empower MSMEs to improve the Indonesian economy. As a sector that drives the economy, MSMEs are also able to absorb labor and help reduce the level of unemployment in Indonesia. Data collected by the Indonesian Ministry of Cooperatives and SMEs shows that MSMEs represent around 99.99% (62.9 million units) of all business actors in Indonesia in 2017, and have helped absorb at least 97% of the existing workforce.

The presence of Fintech will provide a role for MSME businesses in the process of developing their businesses. The great potential that can be developed through MSMEs by utilizing various technologies so that they can support various processes. Ningsih (2020) explained that Fintech is not free from providing its role in the development of MSMEs, through various types of services provided, Fintech can provide:

a. Source of financing

Peer-to-peer more familiarly known as online Loans provides innovation and solutions for MSMEs who have difficulty accessing finance through banking and other conventional financial institutions. This type of fintech can provide simpler and easier access for MSMEs by providing digital or online-based financing loans without requiring collateral and competitive interest.

b. Financial Accessibility

Continuously developed innovations have resulted in Fintech taking on its role in solving the problems faced by MSMEs in accessing financial services. Fintech contributes to providing easy, affordable access and optimizing the process through reliable digitalization. Conditions like this can provide efficiency for MSME stakeholders in their business operations. Fintech in financial inclusion has a role in facilitating access to various types of financial services, reaching MSMEs in remote areas, providing fast and easy business financing, and encouraging MSMEs and the local economy.

c. Contribution to improving financial understanding

Consumer convenience and security have encouraged MSME owners to use Fintech to help their businesses. The increased use of financial products and services indicates an increased financial understanding driven by the advancement of Fintech.

Digitalization cannot be fully implemented in the MSME business line, especially in Micro Businesses for several reasons. The level of human resource quality is a classic cause that still underlies the lack of digitalization in micro-business businesses. The use of Fintech can provide benefits for business actors but has not touched all Micro business activities. The majority of Fintech use by Micro businesses is limited to the payment system, where they utilize digital payment technology such as the Quick Response Code Indonesia Standard (QRIS) either with mobile banking, digital wallets, or other similar Fintech products.

The availability of payment options using QRIS in certain areas, such as rural regions, is an additional option because the primary payment system still relies on conventional methods, particularly cash transactions. Besides location factors, the relevance of marketing targets also influences business operators in determining their payment systems. For instance, Yusuf, when asked about the use of Fintech in his business, explained that as the owner of the agricultural shop "Mulia Tani," which targets farmers, digital payments are not very helpful. He finds that traditional payment methods are more effective, given that his customers are farmers in the village. A similar sentiment was expressed by Mrs. Sulastri when asked about the role of Fintech in her food products business.

In terms of capital financing, the difficulties faced by entrepreneurs who are just starting their business are related to the difficulty of access that must be taken to obtain capital from banks or cooperatives. Limited collateral and the inability to meet the requirements submitted are factors that hinder it. The emergence of innovation in Fintech in the capital and financing line which is more commonly known as Peer to Peer (P2P) Lending offers ease in accessing capital. With simple requirements and without the need for collateral, it can be a solution for entrepreneurs who have difficulty accessing capital conventionally. In a press release issued by the Financial Services Authority or Otoritas Jasa Keuangan (2023), it was stated that the outstanding P2P Lending financing in May 2023 was worth IDR 51.46 trillion and 38.39% of the outstanding portion was financing for MSMEs. Otoritas Jasa Keuangan Regulation Number 77/POJK.01/2016 concerning Information Technology-Based Money Lending Services (Fintech P2P Lending) states that Fintech P2P Lending is one aspect of Financial Technology. Fintech P2P lending is a systematic form of financial service provision that brings together borrowers and fund owners (lenders) to make an electronic-based money lending contract (Kristian, 2022).

The increasing popularity of online loans and weak regulations have led to abuse by some parties to take advantage of the losses of others. Losses will be incurred by the emergence of illegal online loans, in addition to the fear of arbitrary collection and high interest rates making micro-business actors reluctant to take advantage of online loans. This was echoed by one of the decoration business actors. Bowo, the owner of the "Madaharsa Dekorasi", engaged in the field of engagement decoration and weddings, informed that when asked why he did not use P2P to obtain capital. He said that the high interest rates and his fear of collection if he was unable to cover his loans. Besides, his business which does not have orders every day, is another consideration for not taking

advantage of online loans. This is in line with the study conducted by (Khafidloh, Hermuningsih, & Maulida, 2021) also found that P2P had no insignificant effect on MSMEs. Thus, the existence of P2P has not been able to take an optimal role in providing an effective source of capital for MSMEs, especially micro-entrepreneurs.

Marketing media carried out by most MSMEs plays an important role in their business activities. The sophistication of technology can be utilized by MSMEs to increase their sales through digital promotional media. Utilizing social media as a means of promotion has become a stage that is almost carried out by every MSME business actor, it is possible for Micro entrepreneurs and newly released businesses. Because it is effective and cheap, digital marketing is a popular strategy for increasing business, accessible to anyone if they are connected to the internet. With the ease of internet technology, business actors can get information about market conditions faster and easier and communicate with relations more easily. In addition, the advantages of digital marketing via the Internet are that it is faster, cheaper, and easier to communicate (Arumsari, Lailyah, & Rahayu, 2022). The emergence of the Marketplace is an additional option for MSMEs who want to market their products through digital media. Ease of access and management will be a driver and is expected to be able to support the development of MSMEs. However, digitalization requires every entrepreneur to be able to understand how to utilize digital media in their marketing. Not all MSMEs can access and utilize digital media as a means of marketing. Andi, a street sempol seller, said that the presence of the marketplace has not been able to provide optimal benefits.

The presence of Fintech has played a role in the development of MSMEs in Magelang Regency, and the various advantages offered can help optimize MSME business activities. In its implementation, the presence of Fintech has not been able to play its role in the MSME. Limited access to information technology and knowledge underlies the cause of MSME actors, especially Micro businesses, not optimizing the role of Fintech. In addition, minimal digital literacy, low levels of trust in data security, and the cost of adopting technology are considered still high for some small business actors.

External conditions such as demand and market targets from MSMEs also influence the role of Fintech. Customer demand can influence MSMEs to use Fintech or not, such as a payment medium. In addition, the place of business and type of business also contribute to the ineffectiveness of Fintech's role if played. Business locations located in rural areas will prioritize using classic systems in running their businesses, such as in payment media, bookkeeping, and marketing. This will be more effective than playing Fintech, said Krisnawati, the owner of a catfish farm when met by the author on May 8, 2024. Farmers will be less involved in playing Fintech in their business than food entrepreneurs, this condition only allows farmers to use m-banking as a payment medium and social media as marketing support. On the other hand, food entrepreneurs can play a role in digital-based payments, and marketing by collaborating with several parties such as Go-Food, Grab Food, and Shopee Food, so that they will play a greater role in the business.

Increasing digital literacy regarding Fintech and business development must be done to grow MSMEs in Magelang Regency to be better. The need for mentoring facilities for business actors is because there are still many limitations in various things in order to improve their ability to operate their businesses so that they are able to compete with similar products or businesses in the increasingly advanced digital era. The role of the government through related agencies can be optimized to reach the smallest business lines so that digital literacy and guidance in business development can be realized.

Conclusion

The role of Fintech in the business activities of MSMEs can be optimized if it is properly integrated. The various benefits offered can help drive MSMEs toward more significant growth. However, there are several factors that influence the successful implementation of Fintech in MSME business operations. These factors include knowledge, access to digitalization, business field compatibility, marketing targets, consumer demand, and business processes.

The role of Fintech in MSME business activities can be significantly enhanced through targeted digital literacy programs, infrastructure development, and tailored financial products that cater to the specific needs of micro-businesses in rural regions. To maximize the use and potential of Fintech in the micro-business sector, it is essential to provide guidance and outreach programs that focus on digital literacy and the application of Financial Technology to boost MSME businesses. The readiness of MSME actors, particularly in the micro-business sector, forms the foundation for the digitalization process and the successful implementation of Fintech in MSMEs. Additionally, infrastructure support, such as equitable access to the Internet, is crucial to ensure access to information in various regions. Further research is needed to explore the willingness of MSME actors in Magelang Regency to adopt business digitalization and Fintech advancements.

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