

The role of digital trust as a moderating variable between digital financial literacy and the use of fintech by small and medium enterprise actors



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ABSTRACT

This study examines the implementation of intellectual enhancement in personality development through a literacy corner program at the Class IIA Correctional Institution in Tangerang. The program is part of the broader correctional development system (SPPN), aiming to improve inmates' literacy skills and support their personal growth. Using a descriptive qualitative approach, data were collected through in-depth interviews, observations, and document analysis. The study is guided by literacy theory and the concept of correctional development (SPPN). The findings indicate that the literacy corner and library program are relatively effective in enhancing inmates' intellectual capacity. Inmates actively use the library to gain knowledge, engage in positive activities during their free time, and improve their reading and comprehension skills. The program includes activities such as reading, writing book summaries, and participating in group discussions, which contribute to both cognitive and personal development. However, several challenges remain. Not all inmates participate actively in the program, the availability of reading materials is still limited in certain areas, and there is a lack of dedicated literacy mentors to guide and support inmates consistently. In conclusion, the literacy-based development program has a positive impact on inmates' intellectual growth, but its effectiveness can be further enhanced by increasing participation, expanding library resources, and providing more structured mentoring support.

Keywords: Digital Financial Literacy; Digital Trust; Fintech Utilisation; MSMEs



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INTRODUCTION

The development of digital technology has brought significant changes in various aspects of life, especially in the economic and financial sectors (Arner et al., 2016). This digital transformation has changed the way people and businesses handle financial transactions through digital-based services, known as financial technology, or Fintech. Fintech encompasses services such as electronic payments, online loans, digital investments, and QRIS payment systems, etc (Lee & Shin, 2021). These services not only increase financial inclusion, but also help manage user data more effectively for more personalised services and reduced risk.

The advancement of fintech has not only changed the way people access financial services, but also promotes financial inclusion and changes the dynamics of trust and user behaviour in the digital financial system (Choi & Rocheteau, 2023). According to data from Bank Indonesia, as of October 2023 there were 29.6 million QRIS merchants, and around 92% of them were MSME players, showing how widespread the adoption of fintech is among Indonesian MSMEs. However, this high adoption rate does not fully reflect the optimal use of fintech in supporting business sustainability (Bank Indonesia, 2023). MSMEs play a strategic role in the national economy, both in terms of employment and contribution to Gross Domestic Product (Mahfud, 2025). The existence of fintech helps MSMEs to be more practical and faster amid digitalisation, but many MSME players still face obstacles in understanding, managing, and utilising digital financial technology effectively.

Research shows that the digital financial literacy index of Indonesians is still relatively low, at 49.68%, which has an impact on the low level of trust and utilisation of fintech services (Otoritas Jasa Keuangan, 2022). Digital literacy utilises fintech because digital literacy provides the knowledge and skills needed to use digital financial products and services safely and efficiently (Khatri et al., 2025). With good digital literacy, MSME players or the public can understand how to access fintech services, manage digital transactions, and reduce the risk of errors and fraud. Digital literacy facilitates access to financial services, supports the transition to cashless transactions, and makes life more convenient and secure because transactions become more efficient and protected (Prihandini, 2025). However, good digital financial literacy does not necessarily imply an increase in the use of fintech. In practice, MSME players are often still hesitant to conduct digital transactions due to concerns about data security, privacy, and the habits of the fintech platforms used. This is where digital trust plays an important role as a bridge between literacy skills and the utilisation of fintech. Without trust in digital systems, even business players with high literacy levels are reluctant to utilise technology-based financial services (Maharani & Bebasari, 2026).

Several previous studies have examined the relationship between digital financial literacy and fintech utilisation, but the results still show inconsistencies in the research gap (Morgan et al., 2022). Many studies have examined the relationship between digital financial literacy and fintech utilisation by MSME players, as well as the direct impact of fintech on MSMEs. However, the role of digital trust as a moderating variable in this relationship has not been explored in depth. Other studies show that although digital trust is considered an important factor, in some contexts, trust does not significantly affect interest in using fintech, especially if digital infrastructure and technological literacy are still low (Jafri et al., 2023). Digital financial literacy has a positive effect on the use of fintech, indicating that digital literacy does not directly affect the use of fintech without the factor of trust as a moderating variable (Abbas & Khan, 2024). This reinforces the assumption that digital trust plays an important role as a link between digital financial

literacy and the utilisation of fintech by SME actors. Low literacy also makes SMEs less confident in utilising fintech services, mainly due to concerns about the security and privacy risks of digital transactions (Klapper & Lusardi, 2020).

Therefore, to increase the use of fintech, better digital literacy and greater trust in the security of this system are needed so that MSMEs can fully utilise fintech for business growth and long-term sustainability (Saputra et al., 2025). In the context of Cirebon City, a similar phenomenon is clearly evident. Data from the Cirebon Ministry of Communication and Information Technology shows that 53% of MSMEs admit that they do not fully trust Fintech providers, 41% of MSMEs are hesitant to provide personal data on financial applications, and 38% of MSMEs consider Fintech security information to be insufficiently transparent (Dinas Komunikasi dan Informatika Kota Cirebon, 2023). This condition shows a gap between digital financial literacy and the level of Fintech utilisation, which can be explained through the mediating role of digital trust. Thus, this study is important to analyse the role of digital trust as a mediating variable between digital financial literacy and Fintech utilisation by MSME actors in Cirebon City. The results of this study are expected to provide empirical contributions to academic studies and policy input to improve digital financial inclusion in the region.

LITERATURE REVIEW, RESEARCH FRAMEWORK, AND HYPOTHESES

Digital Financial Literacy

According to Lusardi & Mitchell, (2014), financial literacy is an individual's ability to understand basic financial concepts and use that knowledge to make effective financial decisions. With the development of financial technology, this concept has evolved into digital financial literacy, which is an individual's ability to safely and responsibly access, understand, and utilise digital-based financial services such as mobile banking, e-wallets, and fintech lending (Development, 2023). Digital financial literacy encompasses not only an understanding of financial products, but also the ability to use digital technology and comprehend the risks of cyber security in financial transactions. Research conducted by (Morgan et al., 2022) shows that digital financial literacy plays an important role in improving financial inclusion and individuals' ability to make optimal use of digital financial services. Individuals with a good level of digital literacy tend to be better able to evaluate risks and choose digital financial products that suit their needs.

Digital financial literacy can be understood as the integration of financial literacy and digital literacy, which comprehensively serves to improve individuals' ability to understand, access, and utilise various technology-based financial services effectively, safely, and responsibly (Setiawan et al., 2022). This concept not only covers understanding digital financial products and instruments, but also the ability to operate financial devices and applications, evaluate online transaction risks, maintain personal data security, and make rational financial decisions amid the dynamic development of the digital economic ecosystem. Therefore, the higher a person's level of digital financial literacy, the better the quality of their financial decision-making, including managing income, controlling expenses, choosing appropriate digital financial products, and minimising potential risks such as cyber fraud and over-indebtedness, thereby ultimately supporting sustainable financial well-being (Lyons & Kass-Hanna, 2021).

Utilisation of Fintech

According to Arner et al., (2016), fintech refers to the use of innovative technology in financial systems to improve access, efficiency, and quality of financial services for individuals and businesses. The development of fintech has given rise to various services

such as digital payments, peer-to-peer lending, crowdfunding, robo-advisory, and blockchain-based technology (Kou & Lu, 2025). Fintech has created a new ecosystem in the financial industry that involves technology startups, traditional financial institutions, regulators, and consumers (Tandilino et al., 2025). This ecosystem encourages business model innovation and enhances user experience through more practical and efficient application-based services (Lee & Shin, 2021). Fintech utilization can be understood as the integrated use of digital technology in the provision of financial services with the aim of improving efficiency, accessibility, transparency, and innovation in the financial system.

Fintech offers various technology-based solutions such as digital payments, online loans, online investments, and artificial intelligence-based financial services that simplify transaction processes and reduce operational costs compared to conventional financial systems (Ramalakshmi et al., 2025). Fintech not only makes it easier for people to conduct transactions and obtain fast and flexible access to financing, but also opens up wider opportunities for the unbanked and underbanked to participate in formal economic activities (Ozili, 2018).

In addition, fintech also encourages structural transformation in the financial industry through increased competition, collaboration between traditional financial institutions and technology companies, and the acceleration of financial service digitalisation (Safitri et al., 2025). In the context of the digital economy, the use of fintech is an important catalyst in expanding financial inclusion, improving public financial literacy, and supporting more inclusive and sustainable economic growth.

Digital Trust

According to Venkatesh et al., (2003), trust relates to expectations regarding the security and benefits of technology that influence usage intentions. Digital trust can be defined as users' belief that a platform or organisation is capable of protecting personal data and providing secure and reliable services in a digital environment (Martin et al., 2022). This shows that security and data protection are key factors in building user trust in digital technology. Digital trust e-trust plays an important role in reducing risk perception and increasing perceived value for consumers, thereby encouraging them to use digital services (Devlin et al., 2025). The higher the level of trust, the more likely consumers are to conduct transactions online (Gefen et al., 2003). Digital trust is an important factor that influences consumer purchasing decisions on digital platforms. Trust in the system, information, and service providers will increase consumer confidence in making purchasing decisions (Susilowati & Azzahra, 2024).

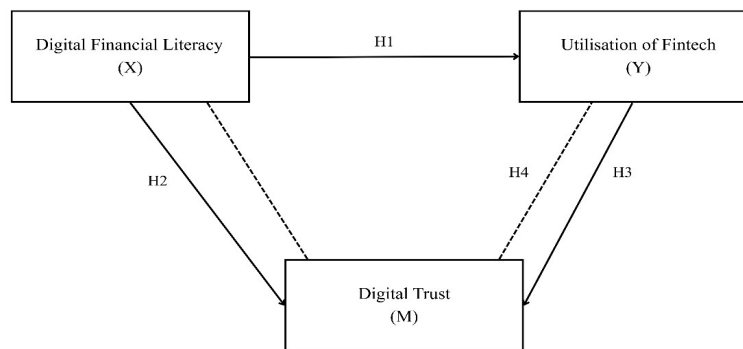
Digital trust does not only function as a psychological factor, but also becomes an important determinant in shaping consumer behaviour in an increasingly rapidly developing digital era (Budiyanto et al., 2025). In this context, trust acts as a foundation that influences how consumers assess, accept, and use a particular technology or digital platform. A high level of trust will encourage consumers to be more open in using digital services, reduce doubts about possible risks, and increase comfort in conducting online transactions. In addition, digital trust also contributes to building long-term relationships between consumers and companies, which can ultimately strengthen customer loyalty (Oesterreich et al., 2025). Consumers who trust a platform are more likely to repeat usage, recommend it to others, and show commitment to the brand or service (Hassan et al., 2025). Furthermore, digital trust also has a significant influence on the purchasing decision-making process, where consumers who feel secure and confident about the system, information, and service provider will be quicker and more decisive in making their choice (Kowsar et al., 2025).

Research Framework

Digital financial literacy is an individual's ability to understand and use digital-based financial services effectively and safely. According to Lusardi & Mitchell, (2014), financial literacy helps individuals make sound financial decisions. In the digital context, this skill includes understanding electronic payments, fintech lending, and managing the risks of online transactions. The use of fintech refers to the use of innovative technology to improve the efficiency and accessibility of financial services.

According to (Arner et al., 2016), Fintech plays a role in expanding financial inclusion, especially for MSMEs. However, the use of fintech is not only influenced by technical capabilities, but also by psychological factors. Digital trust is an important factor in technology adoption. According to (Venkatesh et al., 2003), expectations regarding the security and benefits of technology influence the intention to use it. Without trust in data and system security, individuals tend to be reluctant to use digital services even if they are well literate.

Based on this theory, this study developed a research framework that digital financial literacy influences digital trust, and digital trust influences the use of fintech. In addition, digital trust acts as a mediating variable in the relationship between digital financial literacy and the use of fintech by MSME players. Here is our research framework:



Source: Primary data processed by researchers, 2025

Figure 1
Research Framework

METHOD

The sampling technique used in this study was purposive sampling, which is a method of determining respondents based on specific criteria that are in line with the research objectives (Creswell, 2014). The criteria for respondents were micro, small, and medium enterprises (MSMEs) that had used at least one financial technology (fintech) service, such as QRIS, e-wallet, or other digital financial applications, had been in business for at least six months, and were willing to be research respondents. In addition, the sample size was calculated using the Slovin formula with a population size (N) of 256 and a margin of error of 5%, resulting in a representative sample size according to the calculation (Sugiyono, 2017).

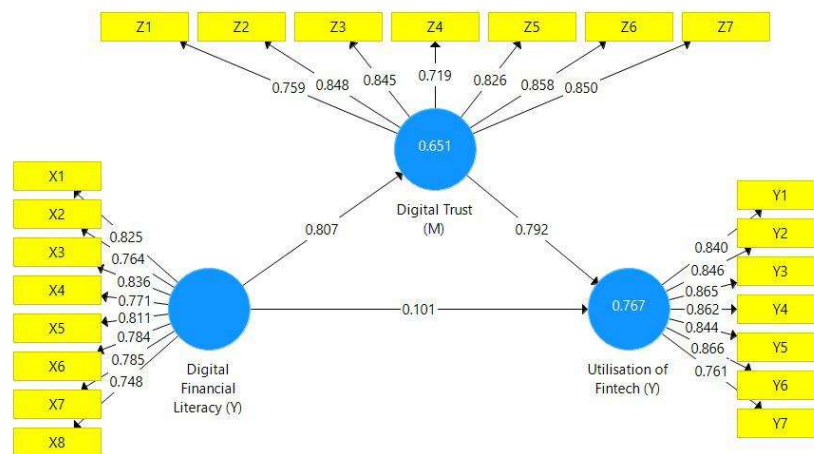
The types of data used in this study include primary and secondary data. Primary data was obtained directly through the distribution of questionnaires to MSME operators who met the research criteria. Meanwhile, secondary data was obtained from official

reports from Bank Indonesia, the Financial Services Authority (OJK), and previous research publications relevant to the topic of study. The data collection method was carried out using a questionnaire with closed questions measured using a five-point Likert scale. This instrument was designed to measure perceptions, attitudes, and the level of financial technology use among MSMEs in a systematic and measurable manner. Data analysis was conducted using Smart Partial Least Squares (SmartPLS) version 4.0, by testing the outer and inner models.

RESULTS AND DISCUSSION

Outer model testing is the initial stage in Partial Least Squares–Structural Equation Modelling analysis, which aims to evaluate the quality of the measurement model. At this stage, an assessment is made of the relationship between constructs and the reflective indicators that form them (Hair et al., 2021).

Outer model evaluation is very important because it determines the extent to which the indicators used are able to represent the research constructs accurately and consistently (Demir & Uşak, 2025). The results of the outer model evaluation in this study are presented in Figure 2, which illustrates the relationship between each construct and its indicators along with their respective loading values.



Source: Smart PLS Output Version 4.0, 2025

Figure 2
Path Coefficient

Convergent Validity

Convergent validity refers to the extent to which multiple indicators of a construct are strongly correlated and jointly measure the same underlying concept. It is commonly assessed through indicator loadings and the degree to which indicators share a high proportion of variance in representing the construct (Cheung et al., 2023). The purpose of convergent validity is to ensure that the indicators used in a measurement model are capable of accurately capturing and consistently representing the intended construct. According to Hair et al., (2021) an acceptable and valid convergent validity value is when the outer loading value is above 0.7 and the AVE value is above 0.5. The results of the convergent validity test in this study are presented in Table 1, which shows the outer loading and AVE values for each construct to assess whether the measurement model meets the required validity criteria.

Table 1
Convergent Validity

Variabel	Indikator	Outer Loading	AVE	Description
Digital Financial Literacy (X)	X.1	0.825	0.667	Valid
	X.2	0.764		Valid
	X.3	0.836		Valid
	X.4	0.771		Valid
	X.5	0.811		Valid
	X.6	0.784		Valid
	X.7	0.785		Valid
	X.8	0.748		Valid
Digital Trust (Z)	Z.1	0.759	0.626	Valid
	Z.2	0.848		Valid
	Z.3	0.845		Valid
	Z.4	0.719		Valid
	Z.5	0.826		Valid
	Z.6	0.858		Valid
	Z.7	0.850		Valid
Utilisation of Fintech (Y)	Y.1	0.840	0.708	Valid
	Y.2	0.846		Valid
	Y.3	0.865		Valid
	Y.4	0.862		Valid
	Y.5	0.844		Valid
	Y.6	0.866		Valid
	Y.7	0.761		Valid

Source: Smart PLS Output Version 4.0, 2025

Thus, based on the results in Table 1, which overall has a value > 0.5 , each statement of the latent variable from the research questionnaire expressed by the outer loading and AVE values can be declared valid. Therefore, all statements from each variable can be confirmed to have passed the validity test. All indicators meet convergent validity (outer loading > 0.7 , AVE > 0.5 for literacy 0.667, trust 0.626, use 0.708). These criteria are in line with the guidelines set by Hair et al. (2016), which are often used in PLS-SEM for studies on technology adoption.

Reliability

Reliability refers to the degree to which a measurement instrument produces consistent and stable results, indicating that the measurement is free from random error. In structural equation modeling, reliability reflects the consistency of indicators in measuring a construct across observations (Ahmad et al., 2016). The purpose of reliability is to ensure that the measurement results are consistent, dependable, and can be replicated, thereby increasing the accuracy and credibility of the research findings. According to Hair et al., (2021), reliability value that is acceptable and considered valid is when the Cronbach's alpha and composite reliability (rho_c) values are greater than 0.5. As shown in Table 2, all constructs in this study have Cronbach's alpha and composite reliability values above the recommended threshold, indicating that the measurement model is reliable.

Table 2
Reliability Test

Variabel	Cronbach's alpha	Composite Realitibility (rho_c)
Digital Financial Literacy	0.916	0.933
Digital Trust	0.914	0.930
Utilisation of Fintech	0.931	0.944

Source: Smart PLS Output Version 4.0, 2025

Thus, based on the results in Table 2, reliability (Cronbach's alpha>0.91, composite reliability>0.93), which overall has a value > 0.5, each statement of the research questionnaire variable expressed with Cronbach's alpha and composite reliability (rho_c) values can be confirmed as valid. Therefore, all statements from each variable can be confirmed to have passed the reliability test.

PLS-SEM Bootstrapping Inner Model Testing

Inner Model PLS-SEM testing is an advanced stage in PLS-SEM analysis after Outer Model testing has been completed. The Inner Model is intended to analyse the causal relationships between latent variables that were previously declared valid in the Outer Model test. The purpose of this test is to test hypotheses and significance levels (Hair et al., 2021). The results of the Inner Model evaluation, including path coefficients and their significance levels, are presented in Table 3.

Table 3
Coefficient of Determination

Variabel	R Square	R Square Adjusted
The Use of Fintech for SMEs	0.651	0.647
Digital Trust	0.767	0.761

Source: Smart PLS Output Version 4.0, 2025

Based on Table 3, it can be seen that the results of the Adjusted R-Square coefficient measurement in the MSME Fintech Utilisation column indicate that the Financial Literacy variable is able to explain the MSME Fintech Utilisation variable by 77.9%. Therefore, it can be concluded that the model is considered strong. Meanwhile, the results of the Adjusted R-Square measurement in the Digital Trust column indicate that Financial Literacy is able to explain the MSME Fintech Utilisation variable by 64.6%. It can therefore be concluded that the model is considered moderate.

The coefficient of determination R^2 adjusted shows that financial literacy explains 76.1% of the variance in digital trust strong and 64.7% of fintech utilisation (moderate). The path coefficient confirms that H2 and H3 are accepted ($X \rightarrow Z$: $\beta=0.807$, $p<0.001$; $Z \rightarrow Y$: $\beta=0.792$, $p<0.001$), while the specific mediating effect of $X \rightarrow Y$ via Z is significant ($\beta=0.639$, $p<0.001$), but the direct effect of $X \rightarrow Y$ is not significant ($\beta=0.101$, $p=0.477$).

The table presents the results of the path coefficient analysis in the Inner Model, which aims to evaluate the strength and direction of relationships between latent variables as well as to test the proposed hypotheses. Path coefficients indicate the

magnitude of influence between constructs, while their significance levels determine whether the relationships are statistically supported (Hair et al., 2021). Therefore, the results in Table 4 provide the basis for hypothesis acceptance or rejection.

Table 4
Path Coefficient Test

Hipotesis	Original Sample (O)	P-Values	Description
X -> Y	0.101	0.477	Rejected
X -> Z	0.807	0.000	Accepted
Z -> Y	0.792	0.000	Accepted

Source: Smart PLS Output Version 4.0, 2025

The results of structural model estimation using the PLS-SEM approach through the bootstrapping procedure show that not all relationships between variables in this research model are statistically significant. Based on the criteria proposed by Hair et al., (2021), a relationship is considered significant if the P-value is less than 0.05 at a 5 per cent significance level.

The test results show that Digital Financial Literacy does not have a significant effect on Fintech Utilisation coefficient = 0.101; P-value = 0.477, thus rejecting the first hypothesis. Conversely, Digital Financial Literacy has a positive and significant effect on Digital Trust coefficient = 0.807; P-value = 0.000, and Digital Trust has a positive and significant effect on Fintech Utilisation coefficient = 0.792; P-value = 0.000, thus accepting the second and third hypotheses. These findings indicate that Digital Trust plays an important role in explaining the utilisation of fintech by MSME actors.

Digital Financial Literacy on the Use of Fintech by MSME Actors

The results of the first hypothesis test show that digital financial literacy does not have a significant effect on the use of fintech by MSME players ($\beta = 0.101$; $p\text{-value} = 0.477 > 0.05$). This finding indicates that even though MSME players have a high level of digital financial literacy (mean = 4.3), this does not directly encourage them to utilise fintech services in their business operations.

This result differs from the findings of Ananda (2024), who found that financial literacy has a positive and significant effect on the sustainability of MSMEs. This difference can be explained by the different research contexts, where Ananda (2024) used financial inclusion as a mediating variable, while this study used digital trust. The findings of this study are also in line with Fitriani et al., (2024), who emphasised that low digital literacy can reduce the adoption of fintech, but added the nuance that high literacy alone is not enough without the factor of trust.

Digital Financial Literacy and Digital Trust among MSME Actors

This study found that digital financial literacy has a significant effect on digital trust ($\beta = 0.807$; $p < 0.001$). The coefficient of determination shows that financial literacy can explain 76.1% of the variance in digital trust, indicating a very strong relationship. These findings show that the higher the understanding of MSME players about digital instruments, application operational capabilities, and digital security awareness, the higher their trust in the fintech system.

These results support the findings of Chen et al. (2021), who stated that trust strengthens the relationship between perceived benefits and the intention to use fintech. Furthermore, the results of this study are also consistent with Rahmawati & Merlinda, (2024), who found that perceived benefits, ease of use, and risk perception have a positive effect on the interest of culinary SMEs in using QRIS, where digital trust (in the context of risk perception) strengthens adoption.

Digital Trust in the Use of Fintech by MSME Actors

Digital trust has been proven to have a significant effect on the use of fintech by MSME actors ($\beta = 0.792$; $p < 0.001$). This finding indicates that trust in transaction security, service provider reputation, data confidentiality, and system reliability are key factors that encourage MSME actors to actively and continuously use fintech services. These results are in line with Rahman et al. (2022), who found that fintech can improve efficiency and financial inclusion in MSMEs, where trust is an important prerequisite in the adoption process.

These findings also support the argument of Rahmahtika et al., (2025), who emphasise the importance of trust and risk management in improving digital financial inclusion, where cashless payments, market aggregators, and risk & investment management have a positive effect on digital financial inclusion.

Digital Trust Mediates Digital Financial Literacy on the Use of Fintech

The mediation test results show that digital trust fully mediates (full mediation) the effect of digital financial literacy on the use of fintech ($\beta = 0.639$; $p < 0.001$). These findings indicate that digital financial literacy does not directly increase the use of fintech, but rather through an increase in digital trust first. This result differs from most previous studies that emphasise the direct influence of literacy on fintech adoption. For example, although Ananda (2024) found a positive influence of financial literacy on the sustainability of MSMEs, the study used financial inclusion as a mediator, not digital trust.

This study expands the understanding by showing that in the context of digital financial technology, psychological factors (trust) are more dominant than instrumental factors in determining adoption intentions, as emphasised by Venkatesh et al., (2003), in the UTAUT framework. These findings are also consistent with empirical conditions in the city of Cirebon, which show that 53% of SMEs do not fully trust fintech providers, 41% are hesitant to provide personal data, and 38% consider fintech security information to be insufficiently transparent (Kominfo Cirebon, 2023).

CONCLUSION AND SUGGESTION

Based on the results of data analysis using the Partial Least Squares Structural Equation Modelling (PLS-SEM) method, it can be concluded that digital financial literacy does not have a significant direct effect on the use of fintech by MSME players. This shows that the level of understanding of MSME players regarding digital finance is not yet sufficient to directly encourage the use of fintech in business activities.

However, digital financial literacy has been proven to have a positive and significant effect on digital trust. This means that the higher the ability of MSME players to understand and use digital financial technology, the higher their level of trust in fintech systems. Furthermore, digital trust also has a positive and significant effect on the use of fintech, which shows that trust is a key factor in encouraging the use of digital financial services.

In addition, the results of the study show that digital trust fully mediates the relationship between digital financial literacy and the use of fintech. This means that digital financial literacy cannot directly increase fintech utilisation without trust in the security, reliability, and transparency of digital systems. Thus, digital trust is a key factor in bridging the relationship between digital financial literacy and fintech utilisation by MSME actors.

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