

The Effect of Financial Literacy and Financial Technology on Msme Business Performance in Sidoarjo

Ananda Azkia Fatmawati, Hariyati

Universitas Negeri Surabaya, Indonesia

Anandaazkia.20055@Mhs.Unesa.Ac.Id, Hariyati.Pbm.Unesa@gmail.Com

Abstract

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Due to their substantial contributions to employment and local productivity, MSMEs are essential to Indonesia's economic stability. MSMEs in areas like Sidoarjo, however, continue to struggle with funding, marketing, and operational effectiveness. The purpose of this study is to examine how financial technology and financial literacy affect MSMEs' operations in Sidoarjo's food and beverage industry. Questionnaires were used to gather quantitative data from 115 respondents who were chosen using purposive sampling. The associations between the variables were investigated using multiple linear regression analysis. The findings demonstrate that technology and financial literacy have a favorable and significant impact on the success of MSME businesses. Financial literacy enhances entrepreneurs' capabilities in managing cash flow, budgeting, debt, and investments. Meanwhile, fintech improves operational efficiency and financial access through digital platforms such as QRIS payments and online lending. These findings align with the resource-based view and financial behavior theories, emphasizing the strategic value of internal resources and the psychological dimensions of decision-making. The study highlights the need for integrative strategies combining education and technology adoption to elevate MSME competitiveness and sustainability. Future research could focus on longitudinal and comparative regional studies to better understand the dynamics and barriers of fintech and financial literacy in MSME development.

Keywords: Financial Literacy; Financial Technology; MSME; Business Performance; Sidoarjo

Corresponding: Ananda Azkia Fatmawati
E-mail: Anandaazkia.20055@Mhs.Unesa.Ac.Id



INTRODUCTION

Indonesia's economic growth is closely tied to the development of Micro, Small, and Medium Enterprises (MSMEs), which hold significant potential in enhancing local economic performance (Hess, 2016; Nguyễn & Phan, 2023; Purwanto, 2023; Surya et al., 2021). MSMEs are the key pillar of the economy, propelling growth, lowering regional disparities, and fortifying the local economic base, according to Minister of Communication and Information Rudiantara, who emphasized their importance in Indonesia's financial resilience. MSMEs boost productivity and support regional industries, significantly influencing labor absorption, job creation, and

overall economic performance. Their resiliency is demonstrated by their shift to digital platforms like Tokopedia, Bukalapak, and Shopee, which span the manufacturing, commerce, and services sectors and foster an inclusive and sustainable business climate. With a high concentration of MSMEs in the culinary, handicraft, and service sectors, regions such as Sidoarjo make a substantial contribution to the local economy (9.26%, second only to Surabaya at 24.20%). However, there are still unexplored opportunities, indicating the need for additional optimization to maximize their economic impact.

This problem is also mentioned in Porong District, Sidoarjo Regency's MSME e-catalog. It demonstrates that among the key obstacles to MSMEs' expansion in Sidoarjo are marketing and financial concerns. In addition to these challenges, Fajar and Larasati in Firmansyah look at other problems, claiming that there are several challenges when it comes to leveraging fintech to help MSMEs expand. This includes infrastructure like inconsistent or patchy internet access. The need for regulation and OJK oversight is another challenge in putting fintech into practice, since those involved in the industry have an obligation to educate the public about trustworthy products and services in order to stop financial crime and fraud. Limited human resource (HR) capabilities accompany this difficulty as well, as seen by the low level of financial knowledge among Indonesians. Their lack of financial literacy further impairs their ability to manage company finances, including cash flow management, investment selection, and financial planning. Suboptimal business performance is the outcome of MSME firm operators' underutilization of financial technologies and ignorance of financial literacy. In addition, one of the strategic challenges identified in the Sidoarjo Regency Cooperatives and Micro Enterprises Office's Strategic Plan for 2021–2026 is the insufficient availability of capital and marketing for cooperatives and MSMEs. Because of this, Sidoarjo has a relatively small number of MSMEs. Many MSMEs in Sidoarjo are therefore unable to grow their companies in a sustainable manner and capitalize on current market prospects.

Empowering MSMEs requires the skills, knowledge, beliefs, attitudes, and behaviors that comprise financial literacy. Haekal's study emphasizes how crucial financial literacy is for MSME actors to effectively handle the finances of their businesses. Additionally, studies conducted by Bidasari et al. show that financial literacy is essential for MSME participants to handle their firm funds rationally in line with their needs and the local economy. Strong financial literacy enables MSME actors to separate personal and business funds, plan and manage loans, control and discipline their company's financial records, and distribute business revenues to their own needs. Financial literacy also has a positive and significant effect on the performance of MSMEs, so that the performance of MSMEs will significantly increase if MSME actors continue to improve their financial literacy (Bay et al., 2014; Gunawan et al., 2023; A. I. Hasanudin & Rahmiyanti, 2023; Rahayu et al., 2023). Financial literacy knowledge also impacts welfare because with increased financial literacy, business performance can increase, which can later improve welfare. This is also reaffirmed by research conducted by Pebrianti, who wrote that financial literacy knowledge also has an impact on the welfare of the Indonesian people because individuals who have expertise in monetary literacy are more likely to avoid financial problems (Angeles, 2022; Firli & Dalilah, 2021; Nurwulandari, 2023; Permatasari et al., 2021).

Financial literacy is an important element in the management ability of Micro, Small, and Medium Enterprises (MSMEs). In this context, MSMEs need a deep understanding of financial concepts such as cash management, budget planning, and investment (Dewi & Setiyono, 2022; H. Hasanudin & Panigfat, 2023; Lusardi, 2019). Four levels of financial literacy are distinguished by the OJK: not literate, illiterate, reasonably literate, and well literate. The four (four) markers of financial literacy, or financial aptitude, include investing, insurance, savings and loans, and general financial awareness, according to Chen & Volpe in Rahmadani et al. According to the 2013 Indonesian National Strategy for Financial Literacy (SNLKI), a person is considered well-literate if they comprehend money, including their knowledge and attitudes about financial institutions, products, and services. According to the results of the National Survey on Financial Literacy and Inclusion, the financial literacy and inclusion index for Indonesians shows a literacy rate of 49.68% and an inclusion rate of 85.10%. Consequently, out of 100. Accordingly, there

will be around 49 well-educated residents for every 100, and 85 inclusive or financially literate residents. This outcome is regrettable because MSMEs contribute between 96.99% and 97.22% to labor absorption, according to data from the Republic of Indonesia's Ministry of State Secretariat. This data indicates that MSMEs employ the majority of Indonesians. When the majority of Indonesians join MSMEs and lack adequate financial literacy, the performance of MSME businesses will not be at its peak. Due to a lack of knowledge about financial management, many Indonesians find it difficult to make the best financial decisions for their companies. This ignorance can lead to unmanaged financial risks, such as difficulties with debt management, liquidity problems, and business development.

According to Humaira and Ferayanti, financial technology or fintech is a new financing idea that collects results from the combination of traditional banks and information technology. Fintech offers quick and easy access to business financing, contributes significantly to the empowerment of MSMEs and the local economy, and is widespread, reach all MSMEs in remote areas. It is known that the number of financial technology users in Indonesia is 73.6 million people, and they can be a resource for MSMEs in managing their finances. Mobile payments, loan applications, and credit cards are a few examples of commonly used financial technologies. Additionally, because digital technology has greatly increased the efficacy of the services that banks provide to private enterprises, fintech increases the competitiveness of commercial banks. According to Fajar and Larasati in Firmansyah, fintech can assist MSME players in managing and understanding their technology-based finances, including online loans, payment technologies, and the digitization of financial statements.

In addition, the use of financial technology is also a significant challenge among MSMEs. According to Romadhon and Fitri, although fintech offers various benefits, including easy access to digital banking services, crowdfunding, transparency of financial records, and online financing, it also has obstacles and challenges. Many MSMEs still have difficulty adopting this technology, despite these various benefits. The obstacles faced by MSMEs in utilizing financial technology can come from various factors, such as limited access to technology infrastructure, high implementation costs, and a lack of understanding of how to utilize the technology effectively (Asandimitra et al., 2023; Utami, 2023; Zaky & Zainuddin Hamidi, 2022). As a result, MSMEs tend to lag in innovation and excellence, making it difficult to compete in an increasingly digital and global market. However, it should be recognized that using financial technology can also significantly improve the operational efficiency of MSMEs. With the right adoption of financial technology, MSMEs can optimize various business processes, such as inventory management, sales monitoring, and financial management (Aloqab et al., 2018; Brigham & Daves, 2019; Rianse et al., 2016). According to the linkumkm.id post, fintech is crucial for MSMEs because it can help them access more financial services like digital payments and financing, improve operational efficiency, lower operating costs, and boost productivity. Furthermore, financial technology can increase MSMEs' access to financial services that were previously hard for traditional financial institutions to reach, claim Efendi and Wulandari. Without having to go to a bank office, fintech enables MSME actors to obtain financial services online, including opening a bank account and taking out a loan.

Even though these subjects have been well researched in places like Medan, Kendari, Malang, and Gresik, there is still a lack of research on how financial technology and financial literacy impact MSMEs' performance in Sidoarjo. Prior research has not specifically examined the connection between financial technology, financial literacy, and MSME firm success. This study aims to bridge the gap by focusing on the food and beverage sector in Sidoarjo City. Thus, it's critical to conduct further research on the variables influencing MSMEs' performance and growth. It is important to understand more deeply the dynamics of Indonesia's economy and design appropriate policies to support the development of the MSME sector in the future. Thus, further research on effective financial technology and financial literacy utilization strategies among MSMEs can provide valuable insights in supporting the improvement of their business performance and business sustainability.

By examining the combined impact of financial technology and financial literacy on

MSME firm performance in the Sidoarjo region, with an emphasis on the food and beverage industry, this study makes a unique contribution. Although earlier research has examined these factors in areas like Medan, Kendari, Malang, and Gresik, none have focused on Sidoarjo, despite the city's substantial economic contribution and high concentration of MSMEs. By using a quantitative technique in a local area with little empirical attention, the study closes a gap. Additionally, the study incorporates behavioral finance insights and resource-based view theory, providing a more comprehensive understanding of how internal capabilities and technical tools work together to determine MSME success. This method makes it possible to conduct a theory-based, context-sensitive analysis that validates established connections and adjusts them to local digital, policy, and infrastructure-related limitations—aspects that were primarily ignored in earlier studies. This method makes it possible to conduct a theory-based, context-sensitive analysis that validates established connections and adjusts them to local digital, policy, and infrastructure-related limitations—aspects that were primarily ignored in earlier studies.

METHODS

This study used a quantitative approach to measure how much influence financial literacy and financial technology have on the business performance of MSMEs in Sidoarjo. Data were collected through a questionnaire as primary data from respondents who are MSME actors in the food and beverage sector in Sidoarjo City, who were selected using purposive sampling techniques based on business criteria that have been operating for more than one year and using QR codes as a payment method. With a population of 207,000 MSMEs, the sample was calculated using the Slovin formula with a margin of error of 10%, so that around 100 respondents were obtained. The independent variables in this study consist of financial literacy and financial technology, while the dependent variable is the business performance of MSMEs. The data collection technique was carried out through the distribution of a questionnaire with a five-point Likert scale, both online through Instagram and in person, to assess the level of respondents' approval of the submitted statements. In addition to primary data, this study also uses secondary data obtained from books, journals, articles, and other media to support the analysis. The data that has been collected is then analyzed quantitatively to test the hypothesis that has been formulated beforehand.

RESULTS AND DISCUSSION

Data Description

This study looks into how financial technology and financial literacy affect MSMEs' operations in Sidoarjo. The study's population consists of MSME actors in Sidoarjo's food and beverage sector. In order to perform this study, Google Forms questionnaires with predetermined criteria were sent to MSME players both directly and through social media sites including Facebook, Instagram, and WhatsApp. According to the Slovin formula, the sample size used as study participants consisted of 115 respondents.

Test Research Instruments

a. Validity Test

The validity test ensures that the research instrument measures the variables in question, such as financial literacy, financial technology, and MSME business performance. Validity is tested with construct validity techniques, which measure the extent to which questionnaire items correspond to existing theories. The validity test is carried out by comparing the calculated r value with the r table. If r counts $>$ r table, then the item is considered valid. A questionnaire containing three variables, variables X_1 , X_2 , and Y . There are 29 questionnaires

that 115 respondents in this study have filled out. One way to find out if the questionnaire is valid and invalid is to first calculate the r table with the formula of correlation limitations, namely $df=n-2 = 115-2=113$, after getting the correlation results, calculate the product of moment with a significance value of 5% amounting to 0.183, so that the r of the table is 0.183. From the results of the validity calculation in the table above, it can be seen that r calculates the $r > r$ of the table so that it is declared valid, because the r calculation is greater than the r table.

b. Reliability Test

The reliability test measures the consistency of the research instrument. An instrument is considered reliable if it produces consistent results. This test was conducted using Cronbach's Alpha, with a value of more than 0.70, indicating that the instrument is reliable. The instrument is declared reliable if the Alpha Cronbach value exceeds 0.70. The results of the reliability test on the three variables Financial Literacy (X1), Financial Technology (X2), and MSME Business Performance (Y) show that the Cronbach's Alpha value in the financial literacy variable (X1) is higher than the base value of $0.773 > 0.70$. In contrast, in the financial technology variable (X2), it is higher than the base value of $0.783 > 0.70$, and in the MSME business performance variable (Y), it is higher than the base value of $0.727 > 0.70$. The results prove that all the questions in the questionnaire are declared reliable.

Test Research Instruments

a. Validity Test

The validity test guarantees that the study tool assesses the relevant variables, including MSME business performance, financial technology, and financial literacy. Construct validity approaches, which gauge how closely questionnaire items match accepted theories, are used to test validity. By contrasting the computed r value with the r table, the validity test is performed. The item is deemed legitimate if r counts $> r$ table. X1, X2, and Y are the three variables that make up this questionnaire. There are 29 questionnaires that 115 respondents in this study have filled out. One way to find out the valid and invalid questionnaire is to first calculate the r table with the formula of correlation limitations, namely $df=n-2 = 115-2=113$, after getting the correlation results, calculate the product of moment with a significance value of 5%, amounting to 0.183, so that the r table is 0.183. From the results of the validity calculation in the table above, it can be seen that r is calculated $> r$ in the table, so it is declared valid, because r is calculated to be greater than r in the table.

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Uji Asumsi Klasik

Normality Test

The Kolmogorov-Smirnov (K-S) parametric test is used in this study's normalcy test. To determine if the data utilized has been distributed properly or abnormally, the normality test is performed. If the probability significance value in the Kolmogorov-Smirnov (K-S) test is more than 0.05, the data can be considered regularly distributed. Given that the asymptotic sig value in the preceding table is 0.200, the data processing findings indicate that the unstandardized residual data has a normal distribution because the value is greater than 0.05.

Multicollinearity Test

The multicollinearity test aims to determine the correlation between independent variables in the regression model. A good regression model does not correlate with variables. a. If the tolerance value is < 0.10 and the VIF value is > 10 , multicollinearity occurs. b. If the tolerance value is > 0.10 and the VIF value is < 10 , multicollinearity does not occur. Based on the table above, it is shown that the tolerance values of all independent variables have a tolerance value greater than 0.1 and have a VIF value, which indicates that there is no multicollinearity between free variables in the regression model. Test of Heteroscedasticity The purpose of the heteroscedasticity test is to ascertain whether there is a variance discrepancy from residual between observations in the regression model. Heteroscedasticity is present if the significance value is less than 0.05. b. Heteroscedasticity is absent if the significance value is greater than 0.05. The Absolute-bound variable (Abs) is unaffected by any of the statistically significant independent variables. As can be shown, the financial technology variable is 0.318 and the financial literacy variable is 0.218, while the significant probability is above 5%. Thus, it may be said that the regression model lacks heteroskedasticity because every variable has a significant value of > 0.05 .

Correlation Coefficient Test

The correlation coefficient test is a test that measures the relationship between independent variables and dependent variables using the Pearson correlation coefficient. The correlation test of the coefficient above shows that the value of the Pearson correlations calculation is 0.819 in the Financial Literacy variable (X1) and 0.851 in the Financial Technology variable (X2) which means that the influence of Financial Literacy and Financial Technology on Business Performance has an extreme correlation level based on the degrees below quoted from (Sugiyono, 2015):

- 1) 0,00-0,199 = Very Low
- 2) 0,20-0,399 = Low
- 3) 0,40-0,599 = Moderate
- 4) 0,60-0,799 = Strong
- 5) 0,80-1,000 = Very Strong

Multiple Linear Regression Analysis Test

This study seeks the influence of Financial Literacy (X1) and Financial Technology (X2) on Business Performance (Y) using statistical analysis, namely multiple linear regression tests aimed at examining how and to what extent the causal relationship of each variable is from the causal variable to the dependent variable. The model of multiple linear equations is as follows:

$$Y = 7,546 + 0,3691 + 0,488X2$$

Explanation:

Y = Business Performance

X1 = Financial Literacy

X2 = Financial Technology

Based on the table above, the following is known:

1. From the results of the multiple regression test, the constant value (a) gives a positive result of 7.546, meaning that if the financial literacy variable (X1) and financial technology variable (X2) are assumed to be constant at 0, the business performance level will be 7.546.
2. The financial literacy variable was 0.369 and received a significant result of 0.000, which was positive. This indicates that if financial literacy increases by 1% and other variables are constant, business performance will increase by 0.369. The probability value has a Financial Literacy significance (X1) of 0.000, smaller than the specified significance value of 0.05. Thus, it can be concluded that Financial Literacy significantly affects the MSME Business Performance variable (Y). The results of this study show that Financial Literacy has a positive and significant effect on the Y variable, so that the hypothesis is accepted.
3. The financial technology variable is 0.488 and gets a significant result of 0.000, which is positive. This indicates that if financial technology increases by 1% and other variables are constant, business performance will increase by 0.488. The probability value has a Financial Technology significance (X2) of 0.000, smaller than the specified significance value of 0.05. Therefore, it can be concluded that Financial Technology significantly affects the MSME Business Performance variable (Y). The results of this study show that financial technology (X2) has a positive and significant effect on the Y variable, so the hypothesis is accepted.

A. Hypothesis Test

1. T test

The t-test shows that a variable can have a significant effect if the calculated t-value is greater >than the t-table, and the significance value is below 0.05. On the other hand, if t is calculated < smaller than t table, and the significance value above 0.05 is declared to have no effect in the sense that Ha is rejected, Ho is accepted.

Table 1. T Test						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	7,546	1,616		4,671	0,000
	Literasi Keuangan	0,369	0,080	0,368	4,588	0,000
	Teknologi Finansial	0,488	0,071	0,548	6,845	0,000

a. Dependent Variable: Kinerja Bisnis

(Source: Software SPSS 2024)

Based on the t-test results above, it can be seen that t calculates the Financial Literacy variable (X1) of 4,588>1,981 t table, and a significance value of 0.000<0.05, meaning that H0 is rejected. Ha is accepted: the influence of Financial Literacy on MSME Business Performance can be accepted. Meanwhile, in the Financial Technology variable (X2) of 6,845>1,981 t table, and a significance value of 0.000<0.05, meaning that Ho is rejected and Ha is accepted, meaning that there is an influence of Financial Technology on MSME Business Performance so that it can be concluded that it is accepted. 2. F Test The F test aims to find the relationship between independent variables and the influence of the dependent

variable. If the significance value < 0.05 , then H_a is accepted. If the significance value > 0.05 , then H_o is accepted.

Table 2. F Test

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2728,384	2	1364,192	185,342	.000 ^b
Residual	824,364	112	7,360		
Total	3552,748	114			

(Sources: Software SPSS 2024)

Based on the results of the F test in the table above, the F value of 185,342 is greater than the F value of Table 2.68 with a significance level of 0.000 or < 0.05 . Simultaneously, the variables of Financial Literacy and Financial Technology have a significant effect on Business Performance.

Coefficient Determination Test

One crucial metric in regression that assesses how well a model can account for the variation of dependent variables is the coefficient of determination (R^2). When the coefficient of determination falls between zero and one, R^2 is insignificant and indicates that independent variables have a very limited capacity to explain variation. A value close to one means that independent variables provide almost all the information needed to predict the variation of dependent variables (Ghazali, 2016).

Table 3. Determination Coefficient Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.876 ^a	0,768	0,764	2,713

(Source: Software SPSS 2024)

Based on the table above, the Determination Coefficient (R^2) test results obtained an Adjusted R Square value of 0.764, or 76%, meaning that Financial Literacy and Financial Technology can affect MSME Business Performance. Other variables influence the remaining 24%.

Can the level of understanding related to financial literacy affect the business performance of MSME owners in Sidoarjo?

The financial literacy variable had a significance value of 0.000, well below the conventional significance level of 0.05, according to the survey analysis results. The β_1 value was 0.369, indicating that financial literacy and business performance were positively correlated, proving that H_1 was accurate and valid. The results of this study are consistent with previous research in the findings of Lestari & Hwihanus (2023), which states that there is a partial influence between financial literacy and MSME performance. In addition, simultaneously financial literacy variables also have a positive and significant effect on the performance of MSMEs. In the research of Fadilah et al. (2022), there were similar results where financial literacy had a positive effect on the performance of MSMEs

The results of this study are consistent with the resource-based view theory, which states that internal resources, such as financial literacy, can be a key factor in improving business performance and sustainability. In managing MSMEs, financial literacy provides a basis for strategic decision-making. This also means that the higher the level of financial literacy owned by MSME actors, the more their business performance will improve (Hilmawati & Kusumaningtias, 2021). According to the RBV theory, a competitive advantage arises when

resources are structured, valuable, uncommon, and difficult to copy. The study's findings are also consistent with the theory of financial behavior, which holds that judgments are made by taking into account social and psychological factors in addition to economic rationality. It is more likely that MSME actors will base their decisions on economic rationality if they have a solid understanding of financial literacy. Based on these findings, it can be said that MSME company performance will increase in proportion to the financial literacy of MSME actors.

Does financial technology influence the business performance of MSMEs in Sidoarjo?

Based on the results of the regression analysis, the financial technology variable shows a significance value of 0.000 which is far below the standard significance level of 0.05, the β_1 value is 0.488 which means that there is a positive influence between financial technology and business performance, so that H2 is proven to be correct and accepted. The results of this study are consistent with previous research, where the findings of Lestari & Hwihanus (2023) stated that there is a partial influence between financial technology and the performance of MSMEs.

In addition, simultaneously financial technology variables also have a positive and significant effect on the performance of MSMEs. In the research of Fadilah et al. (2022), there were similar results where financial technology had a positive effect on the performance of MSMEs. Fintech is an innovation in the financial sector that combines financial services and technology to provide faster, safer, and more efficient solutions. Utilizing fintech innovations can increase efficiency and accessibility and improve the business performance of MSMEs (Aswirah et al., 2024). In managing MSMEs, fintech-based innovations can facilitate transactions with customers. This technology allows consumers to use digital wallets and electronic money for various payment needs, while merchants can provide more effective and efficient services. With these results, it can be concluded that the use of fintech innovations owned by MSME actors can improve more effective and efficient services, thus having an impact on increasing MSME business performance.

CONCLUSION

The paper asserts that financial literacy is essential for enhancing MSMEs' ability to manage their finances, including cash flow, budgeting, debt, and investment decisions, all of which positively affect the long-term viability and prosperity of their companies. Financial technology (fintech), which offers digital access to financial services including accounting software, QRIS payments, and digital financing that boost productivity, market reach, and competitiveness, is also very beneficial to MSMEs. Future research should examine the combined effects of financial literacy and fintech adoption, namely through longitudinal studies assessing their influence on resilience and long-term business success. Studies comparing MSMEs in urban and rural areas may shed light on contextual issues, and the possibility of using AI-based financial tools to reduce literacy disparities presents encouraging avenues for inclusive, scalable solutions.

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