

The Effects of Digital Literacy, Financial Literacy, and Financial Technology on Surakarta SMEs' Sustainability Plans



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ABSTRACT: The purpose of this study is to examine the relationship between the growth of SMEs in Surakarta and financial technology, digital literacy, and financial culture. At least 97 SME members must participate in the quantitative research approach. We used multiple regression to analyze the data. The analysis reveals that financial literacy and technology significantly improve SMEs' probability of success. This indicates that adopting efficient financial management, financial competence and leveraging technology can contribute to small business profitability. However, digital literacy has no noticeable impact on firm success. This may be due to a number of things, including ineffective use of digital technologies by firms or lack of access to robust digital infrastructure. According to this analysis, fintech use and digital literacy instruction need to be enhanced in order to increase the competitiveness of SMEs in Surakarta. We implore the government and pertinent institutions to give SMEs greater training and digital infrastructure so they can better handle the difficulties of the digital economy age.

KEYWORDS: Financial Literacy, Digital Literacy, Financial Technology, Business Sustainability, MSMEs.

I. INTRODUCTION

Small and medium-sized businesses (SMEs) have a significant positive impact on the national economy. Small and medium-sized businesses in Indonesia are essential to the nation's efforts to reduce poverty, create jobs, and increase GDP. The Ministry of Cooperatives and SMEs claims that SMEs produce more than 97% of all hours worked and contribute more than 60% of the country's GDP. SMEs are businesses that are easy to manage, require minimal funding, and are adaptable enough to evolve with the market. SMEs prioritize resolving community concerns and often depend on local resources, according to Tambunan [1]. MSMEs are therefore crucial for fostering economic growth, especially in rural areas.

Furthermore, according to BPS [2], MSMEs are classified according to the number of employees and working hours: small firms employ less than ten people, medium-sized organizations employ ten to fifty, and large enterprises employ fifty to two hundred and fifty. This classification places more organized firms and home-based businesses under the MSMEs umbrella, and MSMEs are better able to adapt to changes and handle the global economic crisis than giant corporations [3].

Micro, small, and medium-sized businesses (MSMEs) are essential to Indonesia's attempts to reduce poverty, create jobs, and grow its economy. Micro, small, and medium-sized businesses (MSMEs) are categorized based on their number of workers and length of operation. OJK [4], reports that microbusinesses with assets of fifty million (excluding land and buildings) reported revenues of little more than 300 million, whereas small companies with assets between fifty million and fifty million reported yearly sales of between 2.5 billion and fifty billion. Since MSMEs have easier access to formal financial institutions like banks, businesses, and fintech, OJK emphasizes the need of financial inclusion for them.

By integrating creative ideas into corporate strategy, the entrepreneurial spirit is applied to business, according to the United Nations Brundtland Commission's "Our Common Future" study [5]. Meeting current demands without endangering the capacity of future generations to satisfy their own needs is what defines it. According to Edward Barbier [6], businesses must put resource management first in order to protect future generations' capacity to meet their own requirements without sacrificing present resource usage. This is due to the capacity to reconcile the demands of natural resource exploitation with those of economic growth.

According to Hillary [7], learning in MSMEs allows students to apply large-scale learning strategies to small-scale business skills. MSMEs can focus on more efficient data management, language development, and environmental innovation to improve

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daily operations. Schaper [8] argues that MSMEs adopt suicide practices not only for social reasons, but also for business purposes. Adopting MSME practices can increase market value, enhance reputation, and foster stronger customer relationships.

Financial education, according to Bank Indonesia (BI) [9], is the collection of talents, skills, and information that support individuals in making wise financial decisions and enhancing their financial stability. Financial literacy is the capacity of individuals to understand, value, and produce efficient financial statements based on their understanding of financial ideas and aspects, according to Grana-Alvarez, J. C. [10]. To maintain financial equilibrium in both personal and professional contexts, special attention is paid to budgeting, loan regulation, investment planning and financial risk management. Mastering finance also strengthens an individual's ability to manage financial resources properly.

Digital literacy, according to UNESCO [11] is the capacity to interact, engage, comprehend, integrate, and convey knowledge using digital technology in a suitable and understandable way. It also improves one's capacity to evaluate digital material critically. Digital literacy, according to Hague and Payton [12] is more than simply being proficient in technical skills; it also includes knowing how to use technology to improve learning, collaboration, and creativity in groups. Digital expertise is necessary to comprehend technology advancements, particularly when it comes to the growth of micro, small, and medium-sized enterprises (MSME). Through the application of digital technologies, such as internet commerce, MSMEs may increase market availability and operational efficiency [13].

In the article "The Influence of Financial Literacy and Financial Technology on Financial Performance: A Case Study of Kebun Kelapa Village" that was published in the International Journal of Management, Economic and Accounting, Ananda, G.C. [14], defines fintech as the application of technological innovations to make financial services more effective, accessible, and economical for all. Financial technology refers to the application of digital technology for financial services, such as loans, investments, savings, payments, and risk. More people can now work in the financial industry, especially those who previously had difficulty obtaining traditional financial services, thanks to technological improvements.

However, financial literacy has little impact on the future of MSME businesses, claim Kusuma, Narulitasari, and Nurohman, Y. A. [16] The study by Bongomin and Munene [15] highlights how crucial financial literacy is to MSME business performance. In contrast to Aulia's research findings [17] Safitri and Yuliani's [17] further research shows that digital literacy has a positive impact on company success and has no negative influence on the success of MSME firms. Although Tan & Syahwildan [19] assert that financial technology significantly improves MSEs, a research on the subject by Puspitasari [18] revealed no link between business performance and fintech.

In order to satisfy the needs of the contemporary technological era, Surakarta's MSMEs (micro, small, and medium-sized enterprises) need assistance. MSMEs in Surakarta require assistance in order to handle the difficulties of the modern world. Financial and digital literacy may help MSMEs become more competent and better prepared to manage the challenges of the digital and globalized world when combined with efficient financial technology. Government representatives, financial technology firms, and MSME workers must collaborate to create an environment that enhances corporate operations. This study's main goal is to demonstrate how financial education, digital education, and financial technology affect MSME operations, especially in light of the global economy's digitization and transition. It is envisaged that by comprehending these components, a successful strategy would be created to enable MSMEs as a source of funding.

II. LITERATURE REVIEW

a. Business Sustainability

According to John Elkington [20] sustainable enterprise refers to business activities that, in addition to economic benefits, also affect social and environmental factors through the development of operations and business decisions. According to Elkington, successful companies can only use these three factors to ensure that there are no long-term problems for society, business, and the environment.

The following indicators of business sustainability were coined by John Elkington [20]:

1. Economic Sustainability
2. Environmental Sustainability
3. Social Sustainability
4. Compliance with Regulations
5. Innovation and Adaptability

b. Financial Literacy

According to Huston [21] financial literacy is the capacity to balance theory (knowledge) and practice (competence) in order to achieve personal financial well-being. Huston also emphasizes that making wise financial decisions in all areas of life

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requires having a solid understanding of money. The capacity to effectively use knowledge and manage financial resources is known as financial literacy.

According to Huston [21] the following are indicators of financial literacy:

1. Ability to Create and Follow a Financial Budget
2. Understanding of Debt Management
3. Knowledge of Basic Financial Concepts
4. Ability to Read and Interpret Financial Information
5. Understanding of Investment and Risk

c. Digital Literacy

Digital literacy, according to Eshet-Alkalai, Y [22] is the ability to use a variety of technical, social, and cognitive skills to interact with information in a digital setting. According to Eshet-Alkalai, digital literacy encompasses the essential skills necessary to comprehend, use, create, and engage with digital technology. In the digital era, these skills are seen to be necessary for survival.

According to Eshet-Alkalai [22] the following are part of the digital literacy indicators:

1. Visual and Photo Literacy
2. Knowledge of Reproduction
3. Developing Literacy
4. Knowledge Information
5. Socio-Emotional Literacy

d. Financial Technology (Fintech)

According to Gomber, P., [23] financial technology is a technological innovation used for financial services and transactions. It includes various aspects of financial technology, such as digital payments, crowdsourcing, platform-based investment, risk management using technology, and data-driven financial services. FinTech is mainly focused on improving efficiency, accessibility, and user experience by using advanced technologies such as big data, blockchain, and intelligence.

The following are indicators of financial technology (fintech) according to Gomber, P., [23]:

1. Ease of Access to Financial Services
2. Efficiency of Financial Transactions
3. Innovation in Payment System
4. Security of Data and Financial Transactions
5. Access to Digital Funding

Hypothesis Development

The Effect of Financial Literacy on Business Sustainability

According to Ananda et al. [14], financial literacy is the capacity to understand and apply one's financial knowledge and abilities to make wise financial management choices. This implies that financial education is essential to enhancing economic performance, especially in the Coconut Plantation region, as it enables people and businesses to handle their money more effectively, which boosts operational efficiency.

According to the results of a research by Luo, W., & Cheng [24], literacy improves company success. After investigating the connection between financial literacy and company sustainability, Ananda et al. [14] came to the conclusion that financial literacy improves MSME enterprises' sustainability.

H1: Financial Literacy Has a Positive Effect on MSME Business Sustainability in Surakarta City

The Effect of Digital Literacy on Business Sustainability

Hague and Payton [12] assert that digital literacy encompasses more than just technical skills; it also involves knowledge of technology and how to utilize it to foster creativity, collaboration, and education. Dealing with technology advancements, particularly in the management of MSMEs, requires digital literacy.

Safitri et al.'s previous study on the subject [17]. discovered that digital literacy improved small and medium-sized business survival. Digital literacy enhances a company's sustainability, according to a research by Hidayah et al. [25].

H2: Digital Literacy Has a Positive Influence on MSME Business Sustainability in Surakarta City

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The Effect of Financial Technology on Business Sustainability

The use of technological innovation to make financial services more affordable, accessible, and effective for everyone is known as financial technology, or fintech, according to Ananda, G.C. [14]. More people may use digital technologies for financial services like risk management, loans, savings, payments, and investments, especially for those who previously had difficulty accessing traditional financial services.

Tan and Syahwildan's previous study on the topic of financial technology and corporate sustainability [19] shown that financial technology considerably enhances the sustainability of small and medium-sized firms. Additionally, Kisin and Setyahuni [26] discovered that financial technology enhances MSMEs' sustainability.

H3: Financial Technology Has a Positive Effect on MSME Business Sustainability in Surakarta City

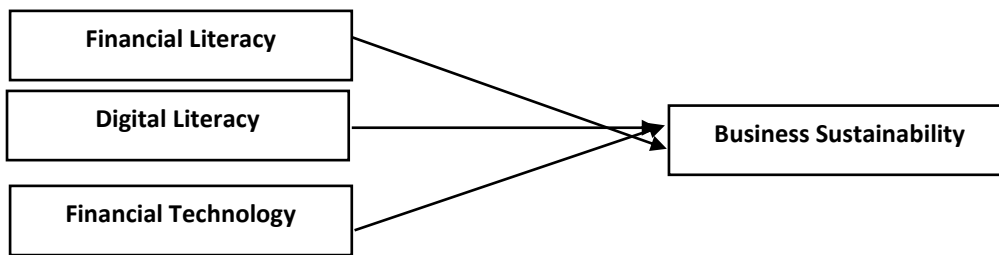


Figure 1. Framework of Thought

III. RESEARCH MOTODOLOGY

According to Hikmawati [27], quantitative research techniques are a type of study in which objectives are methodologically organized and sequentially arranged from the beginning to the creation of learning strategies. This study utilizes a quantitative research design that is based on primary data sources in a field study, through the distribution of questionnaires (flyers or Google Forms) to the participants. Another perspective to summarize quantitative research is as research that is largely based on statistics, starting with the collection of information, the study of data, and the presentation of findings. As there was no knowledge of the population size in this study, the Lemeshow-Swarjana formula [28] was used. Total sampling was the sampling technique used, and Lemeshow's method was used to obtain the sample size using the following formula:

$$n = \frac{z^2}{4(moe)^2}$$

Description:

n = Number of samples

Z = Z score at a certain significant level (95%) of 1,962

Moe = The greatest amount of mistake that may be accepted or the margin of error Five percent bias

the number of samples taken is:

$$n = \frac{1,962^2}{4(0,1)^2}$$

$$n = 96,23 = \text{rounded up } 97 \text{ respondents.}$$

According to the computations above, 97 respondents were utilized as samples.

Therefore, the entire sample for this study consists of 97 (ninety-seven) survey respondents. The data analysis method used, multiple regression, ensures that each element is accurately and completely included. Prior to completing multiple regression analysis, the data inquiry aims to conduct standard hypothesis testing, including tests for normality, heteroscedasticity, and multicollinearity. The t-test was used to assess each independent variable's relative significance to the dependent variable. For this investigation, IBM SPSS version 25 was employed.

RESULT AND DISCUSSION

Validity Test

Table 1 Validity Test

Variabel	Statement	R _{count}	R _{table}	Description
Financial Literacy	X1.1	0,802	0,1975	Valid
	X1.2	0,842	0,1975	Valid

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	X1.3	0,867	0,1975	Valid
	X1.4	0,834	0,1975	Valid
	X1.5	0,699	0,1975	Valid
Digital Literacy	X2.1	0,820	0,1975	Valid
	X2.2	0,882	0,1975	Valid
	X2.3	0,891	0,1975	Valid
	X2.4	0,849	0,1975	Valid
	X2.5	0,829	0,1975	Valid
Financial Technology	X3.1	0,820	0,1975	Valid
	X3.2	0,834	0,1975	Valid
	X3.3	0,846	0,1975	Valid
	X3.4	0,755	0,1975	Valid
	X3.5	0,714	0,1975	Valid
Business Sustainability	Y1	0,744	0,1975	Valid
	Y2	0,770	0,1975	Valid
	Y3	0,760	0,1975	Valid
	Y4	0,735	0,1975	Valid
	Y5	0,555	0,1975	Valid

Source: Statistical analysis results from IBM SPSS 25

Table 1 demonstrates that every indicator utilized to assess the variable statements in this study has a correlation coefficient higher than $R_{table} = 0.1975$, indicating the validity of every indicator.

Reability Test

Table 2 Reability Test

Variabel	Cronbach's Alpha	Description
Financial Literacy (X1)	0,867	Reliabel
Digital Literacy (X2)	0,906	Reliabel
Technology Financial (X3)	0,850	Reliabel
Business Sustainability (Y)	0,758	Reliabel

Source: Statistical analysis results from IBM SPSS 25

The reliability of each individual variable in the questionnaire has been tested, ensuring that the items in each variable concept have the use as a valid measurement instrument, according to the reliability test results abovef each parameter's Cronbach's Alpha is higher than 0.60.

Classical assumption test

According to Gani & Amalia [29] statistical difficulties must be resolved using the Classical Assumption Test. Furthermore, the regression model will reduce statistical errors to guarantee that the specified parameters are calculated and verified. Regression analysis is required for three acceptance tests: autocorrelation, heteroscedasticity, and multicollinearity.

a. Normality Test

A collection of data or variables' regularity is determined using the normalcy test [30].

Table 3 normality test

One-Sample Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		97
Normal Parameters ^{a,b}	Mean	0.000000
	Std. Deviation	2.23110374

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Most Extreme Differences	Absolute	0.054
	Positive	0.054
	Negative	-0.052
Test Statistic		0.054
Asymp. Sig. (2-tailed)		0.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Source: Statistical analysis results from IBM SPSS 25

In accordance with the normality test findings displayed in Table 1, the Kolmogorov-Smirnov test results indicate that the residual data is normally distributed, with a significance value of 0.200 that is more than the probability value of 0.05.

b. Multicollinearity Test

The regression model's independent variables have a strong linear connection, according to the multicollinearity test [31]. This might lead to inconsistent regression coefficients and questionable estimate outcomes. Administration—such as removing variables or altering data—becomes crucial when multicollinearity is present.

Table 4 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Literasi Keuangan (X1)	0,567	1,764
Literasi Digital (X2)	0,420	2,378
Financial Technology (X3)	0,425	2,353

Dependen Variabel : Keberlanjutan Usaha (Y)

Source: Statistical analysis results from IBM SPSS 25

Given that the tolerance is more than 0.05 and the VIF is less than 10, it can be inferred from the preceding table that multicollinearity is absent.

c. Heteroscedasticity Test

The heteroscedasticity test, according to Sugiyono [31] looks at whether the residuals of the regression model differ unevenly between observations. The regression model is considered adequate if the residual variance remains constant, which indicates homoscedasticity.

Table 5 Heteroscedasticity Glejser test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.674	0.884		4.154	0.000
	Financial literacy	-0.059	0.052	-0.152	-1.135	0.259
	Digital literacy	-0.035	0.048	-0.114	-0,734	0.465
	Financial Technology	0.001	0.056	0.004	0.027	0.979

a. Dependent Variable: Abs_reg

Source: Statistical analysis results from IBM SPSS 25

If the probability value is higher than 0.05, the table shows that there is no heteroscedasticity.

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d. Autocorrelation Test.

According to Sugiyono [31] the Durbin-Watson autocorrelation test is a statistical technique used in regression analysis to identify autocorrelation in residuals. This can occur when an observation's residuals are compared to those of a prior observation, particularly when time series are used.

According to the Durbin-Watson table, a DW value of 1.948 would be greater than the upper limit (du) of 1.7335 but less than $(4 - 1.7335 = 2.2665)$, meaning $1.7335 < 1.948 < 2.2665$, indicating no autocorrelation, given a sample size of 97 (n) and three independent variables ($k=3$).

Multiple linear Regression Analysis

To evaluate the impact of many independent factors on Chandrarin, a single dependent variable, different linear regression techniques are employed [30].

Table 7 Multiple linear Regression Analysis

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.256	1.502		4.830	0.000
	Literasi keuangan	0.279	0.089	0.308	3.146	0.002
	Literasi digital	0.147	0.082	0.204	1.795	0.076
	Financial technology	0.247	0.095	0.293	2.592	0.011

a. Dependent Variable: keberlanjutan usaha (Y)

Source: Statistical analysis results from IBM SPSS 25

The following outcomes are derived from the aforementioned findings:

$$Y = 7,256 - 0,3084 X1 + 0,204 X2 + 0,293 X3$$

a. A fixed number of 7,256 represents the baseline value of Business Continuity (Y) when all independent variables (X1, X2, and X3) are equal to zero. In summary, without financial technology, digital literacy, or financial literacy, business continuity is estimated to reach 7,256 (value 0).

b. 0.308 is the financial literacy level (X1). According to this association, if all other factors stay the same, a one unit improvement in Financial Literacy (X1) will translate into a 0.308 rise in Business Sustainability (Y).

c. The coefficient of Digital Literacy (X2) is 0.204, which means that, assuming all other variables remain constant, a gain of 0.204 in Business Stability (Y) is anticipated for every unit increase in Digital Literacy (X2).

d. With a coefficient of 0.293 for Financial Technology (X3), Business Sustainability (Y) increases by 0.293 for every unit increase in X3, while all other variables remain unchanged.

Coefficient of Determination (R²)

A statistical method for determining which particular independent variables could best explain the dependent variable is the R-Square test, sometimes referred to as the coefficient of determination. More accurate models are those that forecast the dependent variable with an R-Square between 0 and 1 [31].

Table 8 R² test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
	0.798 ^a	0.636	0.624	1.700	1.948

Source: Statistical analysis results from IBM SPSS 25\

With a coefficient of determination (R²) value of 0.636, the calculation results above show that variables or factors outside the model explain for 63% of the variance in the sustainability of MSME companies in Surakarta. The independent variables in the model include financial literacy, financial technology, and digital literacy.

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Hypothesis Testing

Based on Table 7 above, the partial test (t-test) findings for each variable can be interpreted as follows:

- a. The test results for the financial knowledge variable (X1) show that the computed t value of 3.146 is higher than the t table value of 1.986, with a significance level (Sig.) of 0.002. Nevertheless, since the (Sig.) value is less than 0.05, we can still draw the conclusion that financial education significantly and favorably affects the long-term viability of MSMEs in Surakarta. These results support the validity of hypothesis 1.
- b. At a significance level (Sig.) of 0.076, the digital literacy variable (X2) test results show that the t-count value of 1.795 is less than the t-table of 1.986. Digital literacy has no appreciable effect on the survival of MSMEs in Surakarta, according to the Sig. value, which is more than 0.05. Hypothesis 2 is rejected as a result of these findings.
- c. The research on the financial technology variable (X3) reveals that, at a significance level (Sig.) of 0.011, the computed t-value of 2.592 is greater than the table t-value of 1.986; nevertheless, hypothesis 3 can be accepted since the Sig. value is less than 0.05, suggesting that financial technology has a significant and positive impact on the sustainability of MSMEs in Surakarta.

DISCUSSION

The Effect of Financial Literacy on Business Sustainability

Given the previous analysis of the partial hypothesis (t test), the expected t value of 3.146 is higher than the t table value of 1.986 with a significance level (Sig.) of 0.002. Despite the Sig. value being less than 0.05, the fact that H_0 is rejected and H_1 is allowed suggests that financial education has a significant and positive influence on the expansion of MSMEs in Surakarta. MSMEs, or entrepreneurs, may help their companies manage their finances more effectively by knowing how to handle cash flow, budgeting, and spotting excessive credit. They also take a more daring attitude to company risks and are more cautious when making investment selections. Entrepreneurs in Surakarta may boost their company's market share, preserve financial stability, and become more competitive by having a solid understanding of finance.

Our study's findings corroborate Ananda et al.'s assertion [14] that financial education has a positive and substantial impact on SMEs' sustainability. Additionally, financial education has a good effect on the long-term viability of MSMEs' operations, claim Bongomin and Munene [15] The results of Luo, W., and Cheng [24] which show that financial literacy improves company sustainability, lend more credence to this.

The Influence of Digital Literacy on Business Sustainability

A review of the partial hypothesis findings discussed above revealed that the t-value of 1.795 was less than the t-table value of 1.986 (t-test), and that the significance level (Sig.) of 0.076 is greater than 0.05, indicating that digital literacy has no discernible effect on Surakarta's SMEs. Consequently, H_2 is rejected while H_0 is approved. Digital literacy might be unsuccessful due to a number of factors. Inadequate use of technology, sectors that have not completely embraced digitalization, a lack of government assistance and technology availability, a lack of cooperation and job training, and a lack of support are some of these issues. As a result, while digital literacy is crucial, other, more critical concerns frequently impede business demands. The study's findings are consistent with those of a study conducted by Rosifa et al. [32] which revealed no discernible effect of digital literacy on MSMEs' sustainability. Additionally, Aulia [33] asserts that digital literacy has no impact on the viability of MSMEs.

The Influence of Financial Technology on Business Sustainability

With a significance level (Sig.) of 0.011, the results of the partial hypothesis test (t-test) show that the observed t-value of 2.592 is greater than the table t-value of 1.986. Financial technology has a positive and significant impact on the sustainability of micro, little, and medium-sized businesses (MSMEs) in Surakarta, according to the Sig. value of less than 0.05. Consequently, H_3 is approved while H_0 is refused. Fintech is crucial to the survival of Surakarta's MSMEs, or micro, small, and medium-sized businesses. Payment gateways and communal credit are examples of fintech services that streamline transaction processes and make financing acquisition easier. According to a Surakarta study, fintech has a big impact on SMEs' development and helps them expand and develop more. Fintech generally has a lot of promise to improve Surakarta's small and medium-sized businesses' (SMEs') sustainability. However, improving digital and financial education among MSME participants and having enough assistance in technology infrastructure are essential if these advantages are to be fully realized.

The study's conclusions align with those of Tan and Syahwildan's [19] investigation, which discovered that financial technology considerably improves small and medium-sized businesses' sustainability. The results of the Kisin and Setyahuni research [26] which showed that financial technology improves MSMEs' sustainability, are in line with this. According to a study by [34], financial technology significantly affects the sustainability of micro, small, and medium-sized businesses (MSMEs).

V. CONCLUSION

Based on the tests that have been carried out, the following conclusion can be drawn from this study:

1. The sustainability of MSMEs in Surakarta is positively and significantly influenced by financial literacy.
2. The sustainability factors of MSMEs in Surakarta are significantly and partially positively influenced by digital literacy.
3. The sustainability factors of MSME businesses in Surakarta are positively and significantly influenced by financial technology.

VI. ADVICE

The study's findings allow for the following comments or suggestions to be made:

1. The government and related organizations must provide more practical digital literacy training that meets the needs of SMEs in Surakarta. The training program should cover practical aspects such as digital marketing, the use of e-commerce platforms, and cybersecurity.
2. SMEs must do more to benefit from fintech services, particularly in the areas of currency exchange, capital access, and digital payments. Fintech policies that are easier to understand and more adaptable can facilitate SMEs' access to digital financial services.
3. Future research could delve deeper into examining other factors that are more dominant in the sustainability of MSME businesses. Qualitative studies can be conducted to understand the specific challenges faced by MSMEs in adopting digital literacy and fintech.

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