

Integrating Financial Education and Digital Innovation to Enhance Financial Behavior in Heritage-Based Microenterprises in Malang City

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ABSTRACT

The rapid growth of digital technology and the increasing importance of financial literacy have redefined entrepreneurial behavior, particularly among small business owners in developing countries. In Indonesia, many small and medium enterprises (SMEs) continue to face challenges in financial management and technology adoption, especially in heritage-based economies such as Kampoeng Heritage Kajoetangan, Malang City. This study aims to examine the relationship between financial education, digital innovation, and financial behavior among micro and small entrepreneurs operating within this cultural and economic setting. This research employs an explanatory quantitative design using survey data collected from 50 SMEs. The data were analyzed through Partial Least Squares (PLS) to test the structural relationships between the variables. The results reveal that both financial education and digital innovation have positive and significant effects on financial behavior, with financial education demonstrating a stronger influence. Entrepreneurs with higher financial literacy tend to exhibit more responsible financial decision-making, while digital innovation enhances financial efficiency and accessibility through technology-based operations. These findings underscore the complementary role of education and digital innovation in fostering rational and sustainable financial behavior among SMEs. The study highlights the importance of integrating financial literacy programs with digital capacity-building initiatives to strengthen entrepreneurial resilience. Policymakers are encouraged to design targeted interventions that expand access to financial education and digital infrastructure, particularly in cultural tourism areas where micro enterprises play a key role in local economic development.

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1. Introduction

Poor financial literacy critically constrains SMEs' performance and sustainability by limiting access to finance, effective risk management, and competitiveness, particularly in developing economies (Fatoki, 2021; Ye & Kulathunga, 2019). Entrepreneurs with limited financial knowledge often face difficulties in managing cash flow, allocating capital, and assessing risk, which can lead to poor

decision-making and business failure (Siskawati et al., 2024). In developing countries, limited financial capability restricts SMEs' innovation, productivity, competitiveness, and resilience to market shocks (Mang'ana et al., 2023). This challenge is especially evident among micro-enterprises in creative and tourism sectors, where weak bookkeeping and informal financial management remain prevalent.

The rise of digital transformation adds another layer of complexity. Digitalization has become essential for entrepreneurship, yet many SMEs struggle to adopt technologies effectively due to limited literacy, resources, and risk concerns (Skandalis & Skandali, 2025). While digital technologies offer opportunities for efficiency, access to finance, and market expansion, many entrepreneurs lack the skills and confidence to implement them effectively. Consequently, SMEs frequently encounter barriers in digital adoption due to inadequate skills, infrastructure limitations, and implementation costs (Seppänen et al., 2025). Digital transformation challenges traditional business models, forcing firms to rethink innovation, collaboration, and value creation approaches (Cravotta & Grottke, 2019). Digital capabilities enable SMEs to transform technological adoption into financial gains through innovation and strategic efficiency (Ullah et al., 2025). Successful digital transformation in SMEs depends not merely on technology adoption but on developing organizational capabilities, leadership commitment, and continuous learning (González-Varona et al., 2021). As a result, entrepreneurs with low digital literacy and limited financial knowledge are less capable of responding to rapidly changing market conditions, thereby constraining their potential for growth and innovation.

Previous studies have investigated the role of financial education or digital innovation independently in shaping entrepreneurial behavior. However, empirical evidence integrating both aspects—financial education and digital innovation—as simultaneous drivers of financial behavior among SMEs remains limited. Most prior works focus on urban-based or technology-intensive enterprises, overlooking the context of small-scale entrepreneurs embedded in traditional and cultural environments. In Malaysia, research has shown that SME owners often possess low levels of financial literacy and poor financial management skills, which hinder their ability to secure funding and manage risks effectively (Mohamed et al., 2024). At the same time, the rise of digital financial systems—such as social media-driven investment platforms and cryptocurrencies—demonstrates an urgent need for integrated financial education to navigate the challenges of the digital economy (González-Prida et al., 2025). This creates a research gap in understanding how entrepreneurs operating within semi-formal economic systems, such as heritage-based communities, adapt their financial behavior in response to the twin forces of education and technological change. Recent studies highlight this fragmentation: while financial literacy research underscores its critical role in enabling informed decision-making (Baño Hifóng et al., 2025), digital transformation studies emphasize the urgency of new education models for navigating emerging digital financial risks (Gomez & Bartolomé Muñoz de Luna, 2025). Integrating these two domains is essential to capture how education and technology interact to shape behavioral adaptation among entrepreneurs, especially within underrepresented contexts (Irene et al., 2025). This condition reflects the real challenges in developing a heritage-based economy while opening opportunities for research on the financial behavior of entrepreneurs in the area.

Kampoeng Heritage Kajoetangan is located on Jalan Jenderal Basuki Rachmat Gang VI, Kauman, Klojen, Malang City, Indonesia, and has been designated as a cultural area by the Malang City Government. This area preserves valuable historical and cultural relics, including Dutch colonial architecture. Kampoeng Kajoetangan offers cultural-based tourism with historical educational content through its collection of antique items such as kitchenware, windows, lamps, bicycles, cameras, and old telephones, which are the main attractions. Its development has expanded since the issuance of Malang City Culture and Tourism Office Decree No. 171/2018 on the Establishment of the Kampoeng Heritage Kajoetangan Tourism Working Group. This designation is expected to increase the knowledge and skills of the working group members in managing tourism and related businesses. In addition to tourism, the community is also working to improve their standard of living through small businesses. However, most business owners do not yet understand the importance of financial record-keeping and are not yet proficient in utilizing digitalization for marketing.

This study aims to fill this gap by investigating the relationship between financial education, digital innovation, and financial behavior among small business owners in Kampoeng Heritage Kajoetangan, a historical tourism area located in Malang City, East Java, Indonesia. The area serves as a distinctive microcosm of Indonesia's heritage economy, where entrepreneurs strive to sustain livelihoods within a community that intertwines cultural preservation and small-scale commercial activities. Despite increasing recognition as a cultural tourism destination, many local entrepreneurs continue to encounter significant challenges in financial management practices and the adoption of digital technologies for marketing, transactional operations, and overall business administration. This environment therefore provides a compelling empirical context for examining how financial literacy and digital readiness interact to shape entrepreneurial financial behavior and adaptive capacity among micro-enterprises operating within heritage-based economies.

Financial Education and Financial Behavior

The relationship between financial education and financial behavior is grounded in the Theory of Planned Behavior (TPB) developed by Ajzen (1991), which posits that individual actions are guided by behavioral intentions formed through attitudes, subjective norms, and perceived behavioral control. Within this theoretical framework, financial education plays a pivotal role in shaping these determinants by enhancing individuals' cognitive understanding, attitudes, and confidence in managing financial decisions. Consequently, well-informed individuals are more likely to develop favorable evaluations of responsible financial practices and exhibit behaviors consistent with long-term financial goals, such as saving, budgeting, and prudent investment.

The causal mechanism underlying this relationship lies in the transformative impact of financial education on cognitive and behavioral domains, as financial knowledge significantly correlates with responsible financial behavior and informed decision-making (Kang et al., 2023). Knowledge acquisition through structured financial education strengthens self-efficacy, improves the ability to assess financial risks and benefits, and fosters rational decision-making. This increased competence enables individuals to manage resources effectively and engage in proactive financial planning, while cognitive style differences influence how financial education translates into behavioral outcomes and literacy development (Estelami & Estelami, 2024).

Empirical evidence substantiates this theoretical link. Xiao and Porto (2017) found that financial education enhances financial satisfaction through improved financial knowledge, behavior, and management ability. Likewise, Ramalho and Forte (2019) demonstrated that financial knowledge positively affects self-confidence, which subsequently influences behavior both directly and indirectly. Similarly, Zhou et al. (2016) confirmed that positive financial attitudes significantly predict responsible financial behavior, underscoring the mediating role of psychological factors between knowledge and action. Nonetheless, existing research predominantly focuses on urban and developed contexts, leaving a gap in understanding how financial education influences financial behavior among small-scale entrepreneurs in traditional or semi-formal economic environments. Addressing this contextual limitation is essential to broaden the applicability of TPB in explaining financial behavior across diverse socio-economic and cultural settings.

H1: Financial Education has a significant effect on financial behavior.

Digital Innovation and Financial Behavior

Digital innovation theory asserts that technological transformation reshapes organizational structures, processes, and behaviors by enhancing efficiency, connectivity, and value creation (Hsu, 2007)(Prabowo et al., 2024). Within this theoretical framework, digital innovation functions as a catalyst for behavioral change, enabling individuals and firms to access information, manage operations, and make data-driven financial decisions. The adoption of digital technologies—ranging from online payment systems to mobile financial applications—alters how entrepreneurs perceive, interpret, and act upon financial information, thereby promoting more informed and rational decision-making. Consequently, digital innovation is expected to influence financial behavior through increased accessibility to information and improved financial capability. This relationship operates through mechanisms of enhanced access, automation, and interactivity. The integration of digital platforms facilitates real-time monitoring of financial activities, supports transparent

transactions, and strengthens individuals' financial awareness. Moreover, digital innovations such as e-wallets, online banking, and financial management applications encourage experiential learning and consistent engagement with financial tools, fostering responsible financial habits and decision-making discipline.

Empirical evidence reinforces this theoretical connection. Sima et al. (2020) demonstrated that digitalization positively affects individuals' financial and consumption behavior by expanding access to information and increasing engagement with digital tools. Likewise, Setiawan et al. (2022) found that digital financial literacy significantly influences millennials' financial behavior, particularly in saving and spending. These studies confirm that digital innovation enhances both cognitive understanding and behavioral adjustment in financial management. Nevertheless, most existing studies focus on urban populations or advanced economies, leaving limited understanding of how digital innovation affects financial behavior among small-scale entrepreneurs in traditional or heritage-based communities. Addressing this gap is essential to contextualize the behavioral implications of digital transformation across diverse socio-economic settings.

H2: Digital Innovation has a significant effect on financial behavior

2. Methods

2.1 Type of Research, Population, and Sample

This research is classified as explanatory research, designed to examine and clarify the causal relationships among the studied variables. It aims to identify how one variable influences another and to explain the underlying mechanisms driving these relationships. In this context, the study specifically investigates the effect of financial education and digital innovation on financial behavior. By employing an explanatory approach, the research not only determines the presence of these relationships but also provides an analytical understanding of how financial education and digital innovation interact to shape financial behavior among micro, small, and medium enterprises (MSMEs).

Table 1: Population and Sample

Category	Unit
MSMEs in Kampoeng Heritage Malang City	125
MSMEs that have not received accounting training	90
Number of research samples	50
Percentage of research samples	55.5%

Source: Data processed by the author (2025)

Table 1 illustrates the population and sampling framework of this study. From a total of 125 micro, small, and medium enterprises (MSMEs) operating in Kampoeng Heritage, Malang City, 90 have not yet received accounting training. This indicates that a significant proportion of business owners lack formal exposure to financial management practices. Out of this population, 50 MSMEs were selected as research samples, representing 55.5% of those untrained in accounting. The sample proportion reflects a representative subset of the target population, allowing for meaningful analysis of financial literacy, education, and digital adaptation among heritage-based entrepreneurs in Malang City.

2.2 Data Collection and Measurement of Constructs

The data were primary and secondary data. The primary data were taken directly from 50 MSMEs with business locations in Kampoeng Heritage, Malang City. The primary data was explicitly collected through a questionnaire containing statements related to the study. At the same time, the secondary data of this study included supplementary data collected from various sources, such as the East Java Provincial Office of Cooperatives and Small and Medium Enterprises, Office of Cooperatives and Small and Medium Enterprises of Malang City, Ministry of Trade, Ministry of Industry, and other organizations related to this research. The following are the properties of the variables used in the study.

Table 2: Research Variable Measurements

Variable: Financial Education (X1)	Source
<ol style="list-style-type: none"> 1. My knowledge of financial matters is critical to the success of my business in the present and future. 2. Business assets easily converted to cash are reduced by debts that must be paid immediately, called the business's working capital. 3. I know about credit (loans) to avoid losses. 4. I know the benefit of a financial budget is the proper use of money to avoid waste. 5. A person's level of education in his work will affect his income. 6. If I have savings in the bank, I can use an ATM card. 7. To purchase large amounts of business goods, I can make an installment loan of less than 20% of the monthly profit. 8. The use of ATMs is not appropriate for paying for the purchase of large amounts of business goods. 9. Forms of securities can be stocks and bonds. 	(Xiao & Porto, 2017)
Variable: Digital Innovation (X2)	
<ol style="list-style-type: none"> 1. Do you agree that promotion needs to use technology (laptops, mobile phones) in business activities? 2. Do you agree that technology (laptops, mobile phones) is part of digitalization? 3. Do you always use technology (laptops, mobile phones) for business development? 4. Do you agree that using social media (Instagram, YouTube, etc.) is essential for entrepreneurs? 5. Do you agree that the use of social media (Instagram, YouTube, etc.) is part of digitalization? 6. Do you use social media (Instagram, YouTube, etc.) for business development? 	(Bowman et al., 2017)
Variable: Financial Behavior (X3)	
<ol style="list-style-type: none"> 1. I made a financial note. 2. I record daily receipts and expenses/shopping per date. 3. Before shopping, I look at the prices of the places I want to shop. 4. I'm trying to make expenses less than my income. 5. I keep funds for unexpected expenses in savings. 6. I have insurance. 7. I'm trying to pay taxes. 8. I pay regular bills such as electricity, water, and phone on time every month. 9. I am being frugal, determining the priority scale, and acting rationally in spending money. 10. I have a record of all the expenses I do. 	(Xiao & Porto, 2017)

Source: Processed by the Researchers (2025)

3. Results

3.1 Research Instrument Testing

3.1.1 Research Instrument Testing

Questionnaires used as data collection tools are the first and foremost tested research tools. The test performed is a test of validity and reliability. This test aims to measure the accuracy and reliability of the questionnaire as a data collection tool. The results of testing the validity and reliability of the research questionnaire can be explained as follows:

3.1.2 Instrument Validity Testing

Validity testing was performed by comparing the scores of each item/indicator with the total score using the Pearson correlation technique (Product-Moment). The test criterion determines whether the correlation coefficient (r_{iT}) \geq the panel correlation coefficient (0.279), meaning that the indicator is declared valid or capable of measuring the variables it measures so that it can be used as a data collection tool. Table 3 presents the summary of validity testing.

Table 3: Validity Test

Variable	Indicators	Correlation Coefficient	Information
Financial Education	X1.1	0.527	Valid
	X1.2	0.51	Valid
	X1.3	0.501	Valid
	X1.4	0.312	Valid
	X1.5	0.528	Valid
	X1.6	0.614	Valid
	X1.7	0.604	Valid
	X1.8	0.666	Valid
	X1.9	0.744	Valid
Digital Innovation	X2.1	0.899	Valid
	X2.2	0.858	Valid
	X2.3	0.86	Valid
	X2.4	0.883	Valid
	X2.5	0.847	Valid
	X2.6	0.832	Valid
Financial Behavior	Y.1	0.804	Valid
	Y.2	0.704	Valid
	Y.3	0.62	Valid
	Y.4	0.771	Valid
	Y.5	0.656	Valid
	Y.6	0.735	Valid
	Y.7	0.482	Valid
	Y.8	0.458	Valid
	Y.9	0.442	Valid
	Y.1	0.845	Valid

Source: Processed by the Researchers (2025)

Based on the summary of the results of testing the validity of the research tool, it is known that all correlation coefficients > correlation coefficient (0.279). Therefore, the indicators of financial education, digital innovation, and financial behavioral variables are declared valid or capable of measuring them for use as data collection tools in research.

3.1.3 Instrument Reliability Testing

Instrument reliability testing aims to determine the reliability and consistency of the research instrument as a measurement tool for the variables it measures. Reliability testing was performed using Cronbach's Alpha technique. The testing criteria determine that a Cronbach's Alpha coefficient ≥ 0.6 means that the indicator is claimed to be reliable or consistent in measuring the variables it measures. Table 4 presents the summary of reliability testing.

Table 4: Reliability Test

Variable	Cronbach Alpha	Information
Financial Education	0.726	Reliable
Digital Innovation	0.927	Reliable
Financial Behavior	0.844	Reliable

Source: Processed by the Researchers (2025)

Based on the summary of the results of the reliability test of the research instrument, it is known that all Cronbach's alpha > 0.6. Thus, financial education, digital innovation, and financial behavior indicators are declared reliable or consistent in measuring these variables to be used as data collection tools in this study.

3.1.4 Respondent's Identity

The identity of respondents by gender is informed through the following frequency distribution and explanation. Table 5 shows that among the 50 financial interest groups of

Kampoeng Heritage Kajoetangan Malang that participated in the study, 36% of the respondents were male, and 64% were female. This shows that most entrepreneurs in Kampoeng Heritage Kajoetangan Malang in this study are women.

Table 5: Respondent's Identity

Gender	Frequency	Percentage
Man	18	36%
Woman	32	64%
Total	50	100%

Source: Processed by the Researchers, 2025

3.2 Partial Least Square

3.2.1 Measurement Model Evaluation

This research model consists of three latent *variables*: *financial education, digital innovation, and financial behavior*. Measurement model evaluation is a stage to test the validity and reliability of a latent variable.

3.2.1.1 Convergent Validity

Convergent validity aims to determine the value of indicators in measured variables. The magnitude of the small factor loading indicates the convergent validity of each indicator in measuring the variables. An indicator is declared valid if the factor loading is favorable and more significant than 0.5. The results of the convergent validity test are presented in Table 6:

Table 6: Convergent Validity Test

Variable	Indicators	Loading Factor	ONE	P value	Loading Factor	ONE	P Value	Loading Factor
Financial Education	X1.1	0.649	0.11	<0.001	0.703	0.108	<0.001	0.703
	X1.2	0.472	0.118	<0.001				
	X1.3	0.468	0.118	<0.001				
	X1.4	0.34	0.124	0.004				
	X1.5	0.411	0.121	<0.001				
	X1.6	0.712	0.108	<0.001	0.886	0.101	<0.001	0.886
	X1.7	0.538	0.115	<0.001				
	X1.8	0.644	0.11	<0.001	0.636	0.111	<0.001	0.636
	X1.9	0.778	0.105	<0.001	0.822	0.103	<0.001	0.822
Digital Innovation	X2.1	0.905	0.1	<0.001	0.905	0.100	<0.001	0.905
	X2.2	0.874	0.101	<0.001	0.874	0.101	<0.001	0.874
	X2.3	0.842	0.102	<0.001	0.842	0.102	<0.001	0.842
	X2.4	0.889	0.1	<0.001	0.889	0.100	<0.001	0.889
	X2.5	0.867	0.101	<0.001	0.867	0.101	<0.001	0.867
	X2.6	0.808	0.104	<0.001	0.808	0.104	<0.001	0.808
Financial Behavior	Y.1	0.838	0.102	<0.001	0.861	0.102	<0.001	0.861
	Y.2	0.785	0.105	<0.001	0.833	0.103	<0.001	0.833
	Y.3	0.717	0.107	<0.001	0.74	0.106	<0.001	0.74
	Y.4	0.841	0.102	<0.001	0.836	0.103	<0.001	0.836
	Y.5	0.56	0.114	<0.001	0.573	0.113	<0.001	0.573
	Y.6	0.62	0.111	<0.001	0.598	0.112	<0.001	0.598
	Y.7	0.343	0.124	0.004				
	Y.8	0.446	0.119	<0.001				
	Y.9	0.492	0.117	<0.001				
	Y.10	0.874	0.101	<0.001	0.879	0.101	<0.001	0.879

Source: Processed by the Researchers (2025)

Table 6 shows that the financial education variables are still four valid indicators. After retesting, all indicators produced factor loading values greater than 0.5. Therefore, all these indicators are declared valid for measuring the variables of financial education. The digital innovation variable was measured using six indicators, with all indicators generating factor loading values greater than 0.5. Therefore, all these indices are declared valid for measuring numerical

inference variables. The financial behavioral variables still had seven valid indicators, where after retesting, all the indicators produced factor loading values greater than 0.5. Therefore, all these indices are declared valid for measuring financial behavioral variables. Additionally, the reworked tests do not include the following invalid flags:

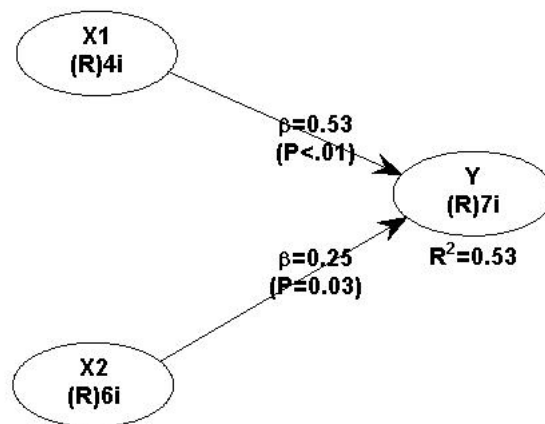


Figure 1: Path Diagram

Source: Processed by the Authors (2025)

Figure 1 presents the results of a structural model illustrating the relationship between two independent variables (X1 and X2) and the dependent variable (Y). The path coefficient from X1 to Y is $\beta = 0.53$ ($p < 0.01$), indicating a strong and statistically significant positive effect. Meanwhile, the path coefficient from X2 to Y is $\beta = 0.25$ ($p = 0.03$), also showing a significant but relatively weaker influence. The model explains 53% of the variance in Y ($R^2 = 0.53$), suggesting that both X1 and X2 together substantially contribute to predicting changes in the dependent variable.

Validity testing can also be known by AVE (Average Variance Extracted). An instrument is said to meet convergent validity tests with an average variance (AVE) greater than 0.5. The results of the convergent validity tests are presented in the following table:

Table 7: Validity Test

Variable	AVE
Financial Education	0.590
Digital Innovation	0.748
Financial Behavior	0.592

Table 7 shows that the variables of financial education, digital innovation, and financial behavior all produce an average variance extracted (AVE) value greater than 0.5. Therefore, indicators measuring financial education, digital innovation, and financial behavior are valuable.

3.2.1.2 Discriminant Validity

The value of the discriminant is calculated using the cross-loading method with the criterion that if the value of the loading factor is greater than the correlation between the indicator and other variables, the indicator is recognized as valid when measuring the corresponding variable. Based on the cross-impact measures in Table 8, it can be known that the overall indexes measuring financial education, digital innovation, and financial behavioral variables produce more excellent cross-impact coefficients. Compared to the cross-impact effects on other variables. Therefore, indicators measuring financial education, digital innovation, and financial behavior can be declared valid. The calculation results of the transverse load are given in Table 8:

Table 8: Discriminant Validity Test

Indicators	Financial Education	Digital Innovation	Financial Behavior
X1.1	0.703	0.527	-0.23
X1.6	0.886	-0.092	0.28
X1.8	0.636	-0.436	0.177
X1.9	0.822	-0.014	-0.242
X2.1	0.075	0.905	-0.189
X2.2	0.29	0.874	-0.314
X2.3	0.144	0.842	0.186
X2.4	-0.309	0.889	0.124
X2.5	0.068	0.867	-0.162
X2.6	-0.281	0.808	0.393
Y.1	0.052	0.194	0.861
Y.2	0.113	-0.038	0.833
Y.3	-0.502	0.455	0.74
Y.4	-0.059	0.01	0.836
Y.5	0.497	-0.508	0.573
Y.6	0.043	-0.379	0.598
Y.1	-0.033	0.043	0.879

3.2.1.3 Reliability Testing

Calculations that can be used to test construct reliability are composite reliability and Cronbach's alpha coefficient. The test criteria stipulate that the construct is declared reliable if the composite reliability is more significant than 0.7. On the other hand, if Cronbach's Alpha has a value greater than 0.6, the construct is declared reliable. Calculation results of Composite Reliability and Cronbach Alpha can be referred to through the summary in Table 8:

Table 8: Reliability Testing

Variable	Composite Reliability	Cronbach's Alpha
Financial Education	0.850	0.761
Digital Innovation	0.947	0.932
Financial Behavior	0.908	0.880

Table 8 shows that the value of *Composite Reliability* in financial education, digital innovation, and financial behavior variables is more significant than 0.7. Thus, all indicators measuring financial education, digital innovation, and financial behavior are declared reliable based on composite reliability calculations. *Cronbach's Alpha* values in variables financial education, digital innovation, and financial behavior are more significant than 0.6. Thus, all indicators measuring financial education, digital innovation, and financial behavior are declared reliable based on Cronbach's Alpha calculations.

3.2.1.4 Goodness of Fit Model

The Goodness of Fit model is used to determine the extent and ability of a variable exogenously to explain the variation of endogenous variables, in other words, to determine the extent to which exogenous variables influence endogenous variables. The importance model for PLS analysis uses the coefficient of determination (R-squared) and the Q-squared predictive importance (Q2). The results of the goodness-of-fit models are summarized in the Table. 9.

Table 9. Goodness of Fit Model

Endogenous	R Square	Q Square
Financial Behavior	0.530	0.525

The R-squared financial behavior variable is 0.530 or 53.0%. It can be shown that the financial behavior variable that can be explained by the financial education and digital innovation variables is 53.0%, or in other words, the contribution of the financial education variables and digital innovation to financial behavioral variables is 53.0%. In comparison, the remaining 47.0%

contributed to other factors not mentioned in this study. Then, the financial behavior variable Q squared is 0.525. It shows that diverse financial education and digital innovation strongly predict financial behavioral variables.

3.2.2 Direct Influence Hypothesis Testing

Direct effect hypothesis testing is used to test the direct effect of exogenous variables on endogenous variables. If the p-value is ≤ significance level (alpha = 5%), then according to the test criteria, the exogenous variable has a significant effect on the endogenous variable. The following table shows the results of the hypothesis testing:

Table 10. Hypothesis Testing

Exogenous	Endogenous	Path Coefficient	ONE	P Value
Financial Education	Financial Behavior	0.527	0.115	<0.001
Digital Innovation	Financial Behavior	0.247	0.129	0.03

Based on the tests listed in the table above, it is known that the influence of financial education on financial behavior produces a p-value of <0.001. The test results showed the p-value < the significance level (alpha = 5%). It means financial education has a significant influence on financial behavior. The influence of digital innovation on financial behavior results in a p-value of 0.03. The experimental results show the p-value < Significance level (alpha = 5%). It means that digital innovation has a significant influence on financial behavior.

3.2.3 Convert Path Diagrams into Structural Models

The conversion of path diagrams in structural models is intended to predict how exogenous variables affect endogenous variables, as presented in the following table:

Table 11: Structural Model Testing

Exogenous	Endogenous	Path Coefficient
Financial Education	Financial Behavior	0.527
Digital Innovation	Financial Behavior	0.247

Description: * (Significant)

The structural equation derived from the model is:

$$Y = 0.527 X1 + 0.247 X2 \dots\dots\dots (1)$$

This equation (1) indicates that financial education has a stronger positive effect on financial behavior than digital innovation, suggesting that increased financial literacy contributes more significantly to responsible financial practices among respondents. This finding serves as the foundation for a more detailed interpretation of the direct effects of each variable presented in Equation (1) as follows:

- i. The coefficient of a direct effect of financial education on financial behavior** of 0.527 states that financial education has a positive and significant effect on financial behavior. It means that the better financial education is, it tends to increase financial behavior.
- ii. The coefficient of a direct effect of digital innovation on the financial behavior** of 0.247 states that digital innovation has a positive and significant effect on financial behavior. It means that the higher the digital innovation, the more it tends to increase financial behavior.

4. Discussion

4.1 The Influence of Financial Education on Financial Behavior

Based on statistical tests, the effect of financial education on economic behavior can give a p-value of <0.001. The test results show the p-value and level of significance (alpha = 5%). This means that financial education has a significant impact on financial behavior.

Financial knowledge can be obtained from formal education, such as schools, seminars, and training, as well as from informal education, such as parents, friends, family, work experiences, and personal (Jin & Chen, 2020; Quadria & Jahan, 2025). Experiencing financial education involves acquiring the ability to understand, analyze, and manage economic resources effectively in order to

make sound financial decisions and prevent potential financial difficulties (Mountain et al., 2021). Additionally, mandated high school economics and personal finance courses have been shown to enhance both subjective and objective financial knowledge, particularly benefiting younger individuals directly exposed to such education (Quadria & Jahan, 2025). In other words, financial knowledge positively affects financial behavior. Financial literacy is linked to improved long-term financial behaviors, emphasizing the need for tailored educational programs to foster better financial outcomes (Pham & Le, 2023; Rodríguez-Correa et al., 2025). Individuals with low financial literacy, particularly women, low-income earners, and the less educated, struggle to understand financial issues, increasing their vulnerability during economic crises (Lusardi et al., 2021). Financial education not only makes a person spend money wisely, but it can also benefit the economy.

4.2 The Influence of Digital Innovation on Financial Behavior

The influence of digital innovation on financial behavior results in a p-value of 0.03. The test results showed the p-value < the significance level (alpha = 5%). It means there is a significant influence of digital innovation on financial behavior. The evolution of technology, from industrialization to the digital age, has transformed social processes and altered individuals' cognitive and emotional responses, reflecting broader shifts in societal norms and behaviors (Alfaraz & Tully, 2025)(Hamamura, 2020). Information and communication technology is a system or technology that can retrieve, move, analyze, present, store, and convey data into information. Internet development significantly boosts financial inclusion, particularly when user proportions exceed certain thresholds, thereby improving access to financial services for underserved populations (Zhang et al., 2023). The ongoing revolution in digital technology has transformed financial services enhancing accessibility, personalization, and user convenience while improving overall service quality for consumers worldwide (Arora et al., 2023)(Noreen et al., 2023). The advancement of digital technology as an innovation disruption has changed the world's face in conducting social interactions and personal relationships. Disruption of innovation is the answer to the times that demand everything is fast-paced, easy, convenient, and practical. The development of digitalization is faster than the development of other sectors, including the industrial and agricultural sectors. The development of digital technology affects the improvement of the internet-based economy, making it easier for customers to find financial information, and customers can make financial transactions in digital devices or media patterns. The development of digitalization is driving cost savings and convenience for new users. With the advent of the internet, offline business is no longer the only alternative for people in transacting. The presence of the Industrial Revolution 4.0 has changed society's way of life and behavior. It can be seen from the changes in community activities carried out from manuals to automation through a combination of digital technology. Digital-based information technology became an essential and integral part of business behavior in the era of the Industrial Revolution 4.0

5 Conclusion

This study aimed to examine the relationship between financial education, digital innovation, and financial behavior among small business owners in Kampoeng Heritage Kajoetangan, Malang City, Indonesia. Using an explanatory quantitative model based on Partial Least Squares (PLS), the research explored how financial literacy and technological adoption shape entrepreneurs' financial practices in a heritage-based economy. The model integrates two key drivers—financial education and digital innovation—to understand their combined influence on rational, responsible, and sustainable financial behaviors among micro, small, and medium enterprises (MSMEs). The findings reveal that both financial education and digital innovation significantly affect financial behavior, with financial education exerting a stronger influence. Improved financial literacy enables entrepreneurs to make informed financial decisions, manage resources efficiently, and plan strategically. Meanwhile, digital innovation supports these behaviors by providing tools that simplify transactions, enhance financial monitoring, and expand market access. Together, these results demonstrate that financial competence and digital readiness operate synergistically in shaping adaptive entrepreneurial behavior.

Theoretically, this study contributes to the refinement of the Theory of Planned Behavior (TPB) by demonstrating that financial education and digital innovation jointly reinforce attitudes and perceived behavioral control toward responsible financial actions. Moreover, it extends the discourse on SME sustainability by integrating digital innovation as a behavioral enabler, complementing traditional financial literacy models. Practically, the findings suggest that policymakers and local governments should strengthen integrated financial literacy and digital training programs for heritage-based MSMEs. Such initiatives can improve their financial decision-making capacity and competitiveness in the digital economy. Finally, although this study offers valuable insights, its focus on single research setting and specific sample characteristics presents opportunities for broader validation in future studies. Future research should expand the model to different cultural and economic contexts, incorporate mediating variables such as financial self-efficacy, and adopt longitudinal designs to capture behavioral changes over time.

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