Al-Kharaj: Journal of Islamic Economic and Business
Volume 8 (3), 2026: xxx - xxx
P-ISSN: 2686-262X; E-ISSN: 2685-9300

The Influence of Perceived Usefulness, Trust, and Ease of Access to Capital on MSME Business Sustainability: The Moderating Role of Business Owners' Education Level

Rachel Amanda Vinka Artamefia[1], Jeni Susyanti[2], Harun Alrasyid[3]
[1,2,3]*Universitas Islam Malang*
Email: 22201083039@unisma.ac.id, jenisusyanti@unisma.ac.id, harunrasyid@unisma.ac.id

Keywords: *perceived usefulness; trust; ease of access to capital; MSME business sustainability; education level*

Abstract
The business sustainability of MSMEs is a strategic issue in the Indonesian economy, considering their substantial contribution to Gross Domestic Product (GDP) and employment in Indonesia. However, MSME owners still face various obstacles in accessing formal financing, influenced by perceived usefulness, trust in institutions, and ease of service access. This study aims to analyze the impact of these three variables on MSME business sustainability and to examine the moderating role of the business owner's education level in this relationship. A quantitative approach with an explanatory design was employed, involving 268 MSME owners—selected via purposive sampling—who have used or are currently using financing from formal financial institutions. Data were collected using a Google Forms-based questionnaire distributed via social media and analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with SmartPLS software (version 4.1.1.6) to identify relationships between variables. Structural testing comprised two stages: the measurement model (outer loading, reliability, convergent validity, and discriminant validity) and the structural model (R-squared, Q^2 Predict, and effect size/f^2), followed by hypothesis testing. The analysis results indicate that trust in financial institutions and ease of access to capital have a significant positive effect on MSME business sustainability, whereas perceived usefulness do not have a significant effect. Education level only strengthens the influence of perceived usefulness on business sustainability but does not moderate the influence of trust or ease of access to capital. These findings underscore the importance of strengthening trust in financial institutions, improving ease of access to capital, and developing the educational capacity of business owners to support MSME business sustainability.

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economic structure, although they do not encompass the entire economy. Based on official data Kementerian Koperasi & UKM (2023), The cooperative and MSME sector contributes approximately 61.07% to the Gross Domestic Product (GDP) and employs over 117 million people, equivalent to 97% of Indonesia's total workforce. These data demonstrate that MSMEs are an integral part of inclusive economic growth and are difficult to replace with other sectors. Despite their significant contribution, MSME operations remain at risk of long-term failure due to various factors, such as limited capital, difficulties in accessing formal financial institutions, and low financial literacy among business owners (Bank Indonesia, 2026; Febrian, 2025; Riyanti & Aini, 2022).

Capital is a crucial factor determining the ability of MSMEs to develop new products, expand markets, and maintain operational stability. The 2023/2027 Roadmap for the Development and Strengthening of Indonesian Sharia Banking (RP3SI) emphasizes that increasing MSME access to capital is a top priority in national policy (Harrieti et al., 2024). Nevertheless, the number of MSMEs able to secure formal loans remains low. Many business owners continue to rely on informal funding sources due to structural barriers, ranging from difficulties in meeting complex administrative requirements to a lack of understanding regarding available formal financing mechanisms. This situation reflects a gap between financial inclusion policies and the realities on the ground—a gap that warrants empirical study (International Monetary Fund Asia and Pacific Department, 2023; Pamungkas & Bratamanggala, 2025).

Technology Acceptance Model (TAM) proposed by Davis (1989) provides a relevant theoretical framework for analyzing the factors influencing an individual's decision to use a service. In the context of MSME financing, 'perceived benefit' reflects the extent to which business owners believe that formal financing genuinely aids their business growth (Ardiansyah et al., 2025). Meanwhile, 'perceived ease of use' reflects how business owners view the accessibility of the provided service procedures (Chamidah et al., 2025). In addition to those two TAM dimensions, trust in financial institutions has also been shown to influence the continued use of banking services (Putri, 2025).

On the other hand, the demographic characteristics of business owners—particularly their education level—are thought to influence the relationship between the perceived usefulness of financial services and the desire to expand the business. Based on human capital theory (Becker, 2009), Individuals with higher levels of education tend to possess superior cognitive abilities for processing information, identifying risks, and optimally utilizing available services. Empirical research indicates that education reinforces the impact of financial literacy and access to capital on the achievements and expansion aspirations of MSMEs (Utrojah et al., 2026).

Previous studies have yielded inconsistent results. Some studies have found that perceived usefulness, trust, and ease of access to capital directly influence the intention to engage in business (Kwarto et al., 2025; Mulyati, 2023). However, no study has yet simultaneously examined the role of education as a moderating variable in the relationship between these three independent variables and business sustainability. This research gap serves as the primary motivation for this study.

Based on the identified research gap, this study aims to analyze how perceived usefulness, trust, and ease of access to capital influence the intention of MSME owners to expand their businesses. Furthermore, it examines how the business owners' education level moderates the relationships among these factors. The study's novelty lies in the inclusion of education—as a demographic factor—as a moderating variable within the Technology Acceptance Model (TAM) framework applied to the context of MSME development, an area that has received limited attention in Indonesian research. Theoretically, this study applies the TAM (Davis, 1989) and human capital theory (Becker, 2009) in the field of MSME financing. In practical terms, the findings of this study are expected to provide evidence-based recommendations for financial institutions, regulators, and policymakers to design more effective and targeted interventions.

In the context of MSMEs, business sustainability refers to the ability of small businesses to sustain themselves and grow steadily over the long term. This concept encompasses the capacity to manage finances effectively, maintain production continuity, adapt to market changes, and enhance business capacity (Kwarto et al., 2025). This construct is multidimensional; it is not determined solely by financial factors but is also influenced by how business owners perceive the quality of their interactions with formal financial institutions (Utrojah et al., 2026). In this study, business sustainability is measured across several dimensions: the contribution of financing to business growth, revenue growth, operational stability, product development, and resilience against economic pressure (Mulyati, 2023).

Perceived usefulness is a key concept in the Technology Acceptance Model (Davis, 1989), which refers to an individual's belief that using a system or service will enhance their capabilities and work performance. In the context of MSME financing, business owners who believe that formal financing services offer benefits tend to utilize those services on an ongoing basis. Research Saputra et al. (2025) It indicates that the perception of benefits is a primary factor driving MSME owners to adopt and utilize formal financial services to optimize their business operations. The findings demonstrate that awareness of tangible benefits—such as more structured capital management—significantly encourages business owners to continue utilizing long-term financing and pursue business growth.

Trust represents a business owner's belief that an institution will act in accordance with expectations, maintain high service quality, and fulfill its promises (Othman et al., 2026). Procedural transparency, consistency in service delivery, and institutional reputation are crucial factors in building trust, which plays a vital role in fostering long-term relationships between MSMEs and financial institutions (Wijaya et al., 2026). A high level of trust in financial institutions has been shown to increase business owners' commitment to utilizing financing on a sustainable basis (Putri, 2025; Wijaya & Moro, 2022). This trust is built through experiences of honest and consistent service, thereby helping to maintain a positive relationship between MSMEs and formal financial institutions.

In this study, 'ease of access to capital' is a contextual adaptation of the 'perceived ease of use' concept from the Technology Acceptance Model (TAM), reflecting the perspectives of MSME operators regarding the practicality of procedures, the consistency of requirements, and the nature of formal financing services. Simple procedures and flexible requirements directly facilitate consistent access to financing for business owners Lestari et al. (2025) demonstrates that easy access to adequate capital significantly boosts the income and ensures the operational continuity of MSMEs. The issuance of OJK Regulation (POJK) Number 19 of 2025 supports these findings; the simplification of financing requirements and procedures—previously major obstacles for MSMEs—has demonstrably increased access to formal financing.

The education level of business owners is a crucial component of human capital that influences their decision-making regarding company management and finance. Based on human capital theory (Becker, 2009), Individuals with higher levels of education are generally better able to understand information, make decisions involving risk, and capitalize on available opportunities (Graña-Alvarez et al., 2024). In the context of MSMEs, business owners with higher levels of education tend to have a better understanding of financing mechanisms, be more adept at leveraging the resulting benefits, and be better able to build rational trust in financial institutions. (Mutasowifin & Sutisna, 2023; Rahmawati & Muharam, 2026). Utrojah et al. (2026) confirms that access to financial services plays a crucial role in the sustainability of MSMEs; furthermore, the ability of business owners to leverage such access depends heavily on cognitive skills shaped by education—consistent with the predictions of human capital theory. Mulyawan et al. (2025) A similar pattern was observed in a different context: education level positively influences an individual's ability to optimally utilize formal financial services. This indicates that educational background strengthens business owners' capacity to integrate their perceptions of the benefits of financial services into long-term business decision-making.

Based on the theoretical framework and findings of previous research, the hypotheses for this study are formulated as follows:

H1: Perceived usefulness have a positive effect on MSME business sustainability.

H2: Trust has a positive effect on MSME business sustainability.

H3: Ease of access to capital has a positive effect on MSME business sustainability.

H4: Education level moderates the effect of perceived usefulness on MSME business sustainability.

H5: Education level moderates the effect of trust on MSME business sustainability.

H6: Education level moderates the effect of ease of access to capital on MSME business sustainability.

Figure 1 below presents the research framework:

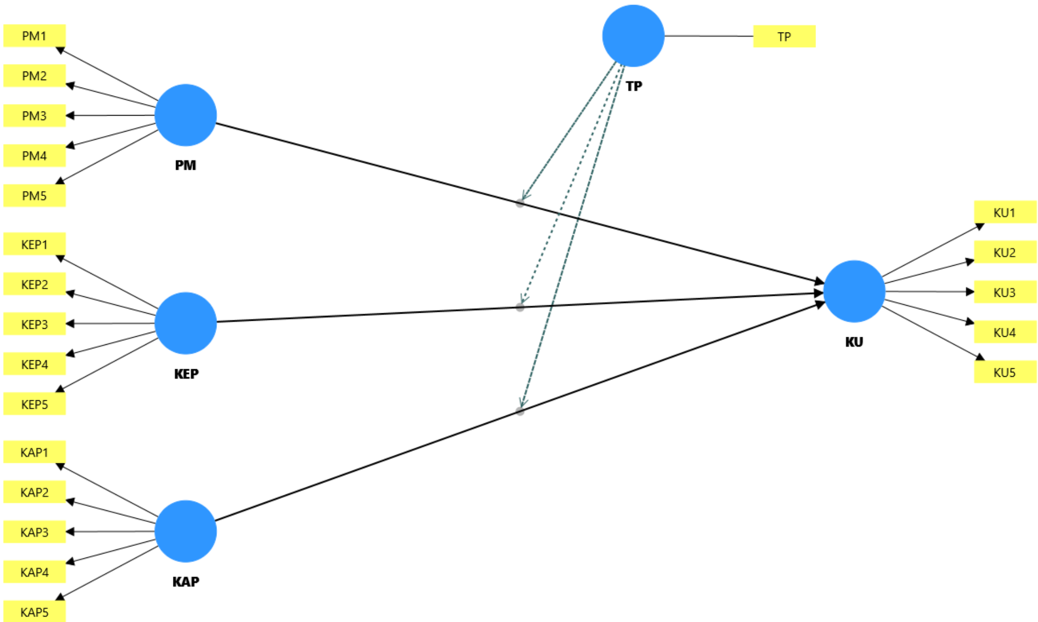

Figure 1. Research Framework

Source: Authors' elaboration based on the literature review.

METHODS

This study employs a quantitative approach with an explanatory research design, aiming to explain the causal relationships between variables based on formulated hypotheses. The study population consists of active MSME owners who have previously obtained or are currently obtaining financing from formal financial institutions in Indonesia. Purposive sampling was used based on two criteria: the MSMEs were operational at the time of the study, and they had experience using formal financing at least once. A total of 268 respondents were selected to meet the requirements for SEM-PLS analysis as outlined by Hair et al. (2022), ...namely, a minimum sample size of ten times the number of indicators for the construct with the highest number of indicators. Given that each construct comprises five indicators, the required minimum sample size is 50 respondents; thus, a sample of 268 respondents is considered adequate and capable of providing sufficient statistical power. Data were collected using a Google Forms-based questionnaire distributed online.

The variables were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The indicators for each research variable were adapted from relevant prior studies: perceived usefulness (Putri, 2025; Saputra et al., 2025); trust (Putri, 2025); ease of access to capital (Lestari et al., 2025; POJK Nomor 19 Tahun 2025); and business sustainabilty (Mulyati, 2023; Riyanti & Aini, 2022). Meanwhile, education level is measured as an ordinal categorical variable (primary school/equivalent, junior high school/equivalent, senior high school/equivalent, diploma, and bachelor's degree).

Data analysis was conducted using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) method with SmartPLS software (version 4.1.1.6). The structural analysis comprised two stages. The first stage involved evaluating the measurement model (outer model), encompassing reliability tests (Cronbach's Alpha and Composite Reliability), convergent validity (Average Variance Extracted and outer loadings), and discriminant validity (Heterotrait-Monotrait Ratio/HTMT). The second stage involved evaluating the structural model (inner model), covering the coefficient of determination (R^2), predictive relevance (Q^2 predict), effect size (f^2), and hypothesis testing via a bootstrapping procedure with 1,000 subsamples. Moderation effect testing was performed using the product-indicator approach in PLS-SEM, in accordance with recommendations Hair et al. (2022).

Table 1. Operational Definitions of Variables

Variables	References	Indicators	Code
Perceived Usefulness	Saputra et al. (2025)	1. Increased business efficiency 2. Financing support for operational activities 3. Increased business productivity 4. Tangible benefits of financing for the business 5. Financing support for business growth	**PM**
Trust	Putri (2025)	1. Trust in the integrity of financing services 2. Institutional integrity in service delivery 3. Transparency of financing information 4. Institutional reliability in fulfilling commitments 5. Security and regulatory compliance	**KEP**
Ease of Access to Capital	Lestari et al. (2025)	1. Ease of accessing financing information online 2. Ease of understanding financing application procedures 3. Simplicity of the financing application process 4. Responsiveness of the financing institution's service 5. Ease of finding financing information	**KAP**
Business Sustainability	Mulyati (2023); Riyanti & Aini (2022)	1. Financing supports business expansion 2. Increase in business revenue 3. Enhanced business stability 4. Capital support for product development	**KU**

	5.	Ability to withstand economic challenges
Education Level		**TP**

Source: Saputra et al. (2025); Putri (2025); Lestari et al. (2025); Mulyati (2023); Riyanti & Aini (2022)

RESULTS AND DISCUSSION

Table 2 below presents a summary of respondent characteristics, including gender, age, business sector, business duration, education level, and business scale.

Table 2. Respondent Characteristics

Item	Frequency	Persentase
Gender		
Male	129	48.1%
Female	139	51,9%
	268	**100%**
Age		
15-25 years	86	32,1%
26-40 years	142	53,0%
>40 years	40	14,9%
	268	**100%**
Business Fields		
Trade	100	37,3%
Services	95	35,4%
Reseller/Dropshipper	44	16,4%
Agriculture	19	7,1%
Fisheries	10	3,7%
	268	**100%**
Duration of Business Operations		
1-3 years	113	42,2%
4-5 years	135	50,4%
6-8 years	14	5,2%
>8 years	6	2,2%
	268	**100%**
Education Level		
SD / Sederajat	1	0,4%
SMP / Sederajat	3	1,1%
SMA / Sederajat	154	57,5%
D1 / D3	55	20,5%
S1/S2	55	20,5%
	268	**100%**
Business Scale		
Micro enterprises	252	94%
Medium sized enterprises	12	4,5%
Large enterprises	4	1,5%
	268	**100%**

Source: Primary data processed using SmartPLS (2026)

As presented in Table 2, this study involved 268 MSME owners who have used or are currently using financing from formal financial institutions. Regarding gender, the respondents were predominantly female (51.9%), while males accounted for 48.1%. In terms of age, the majority of respondents fell within the 26–40 age range (53.0%), followed by the 15–25 age group (32.1%) and those over 40 (14.9%). Regarding education level, the largest group consisted of high school graduates or equivalent (57.5%), followed by holders of Diploma and Bachelor's degrees (20.5% each), while respondents with junior high school education or lower accounted for only 1.5%. In terms of business sector, the majority operated in trade (37.3%) and services (35.4%), followed by resellers/dropshippers (16.4%), agriculture (7.1%), and fisheries (3.7%). Regarding business tenure, most respondents had been operating their businesses for 4–5 years (50.4%) or 1–3 years (42.2%). Finally, regarding business scale, the respondents were predominantly micro-enterprises (94.0%), with the remainder consisting of medium and large enterprises.

Measurement Model (Outer Model) Test Results

In the Partial Least Squares Structural Equation Modeling (PLS-SEM) method, all indicators in this study were first analyzed through a measurement model evaluation. This evaluation aimed to ensure that each indicator validly and reliably represented its respective latent construct prior to structural model testing. The assessment of the measurement model encompassed convergent validity testing (using outer loading values and Average Variance Extracted/AVE), reliability testing (using Cronbach's Alpha and Composite Reliability), and discriminant validity testing (based on the Heterotrait-Monotrait Ratio/HTMT criterion).

Data processing results using SmartPLS 4 indicated that all indicators met the required outer loading values (>0.70); consequently, no indicators were eliminated from the research model. Furthermore, all constructs satisfied the criteria for reliability, convergent validity, and discriminant validity. The measurement model output is presented in Figure 2.

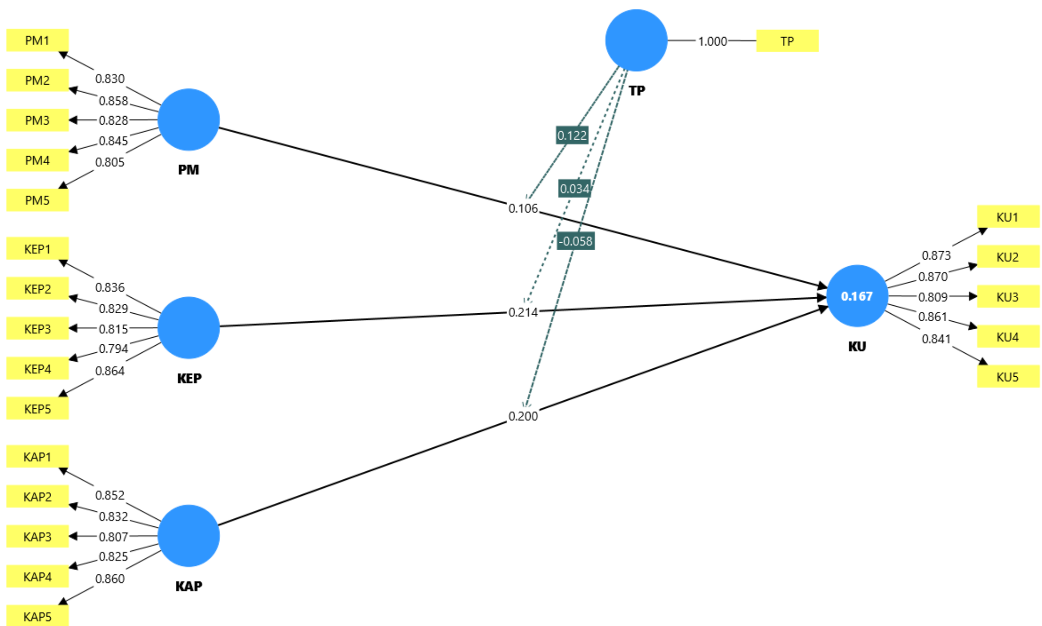

Figure 2. Measurement Model Output

Source: SmartPLS 4 Output (2026)

Convergent Validity Test: Outer Loadings

The convergent validity test is conducted to ensure that each indicator effectively represents the latent construct being measured. This assessment is performed by examining the outer loading value of each indicator. An indicator is considered to satisfy convergent validity if it has an outer loading value greater than 0.70 (Hair et al., 2022). The outer loading value reflects the strength of the relationship between an indicator and its latent construct; thus, the higher the value, the greater the indicator's ability to measure the construct it represents.

Table 3. Outer Loading

	KAP	KEP	KU	PM
KAP 1	0,852			
KAP 2	0,832			
KAP 3	0,807			
KAP 4	0,825			
KAP 5	0,860			
KEP 1		0,836		
KEP 2		0,829		
KEP 3		0,815		
KEP 4		0,794		
KEP 5		0,864		
KU 1			0,873	
KU 2			0,870	
KU 3			0,809	
KU 4			0,861	
KU 5			0,841	
PM 1				0, 830
PM 2				0,858
PM 3				0,828
PM 4				0,845
PM 5				0,805

Source: Primary data processed using SmartPLS (2026)

According to Hair et al. (2022), an indicator is considered to meet the requirement for convergent validity if it has an outer loading value greater than 0.70. Outer loading values between 0.40 and 0.70 may be retained if their removal does not significantly improve the quality of the model. Based on the data analysis results using SmartPLS presented in Table 3, all indicators show outer loading values above 0.70, ranging from 0.794 to 0.873. Consequently, all indicators for the variables of ease of capital access, trust, business sustainability, and perceived usefulness are deemed valid and capable of representing their respective constructs; thus, all indicators can be retained in the research model.

Discriminant Validity Test: Heterotrait-Monotrait Ratio (HTMT)

Discriminant validity is assessed using the Heterotrait-Monotrait Ratio (HTMT) criterion, which is a more accurate approach than the Fornell-Larcker criterion in the context of PLS-SEM. A construct is considered to possess good discriminant validity if the HTMT value is below 0.90 for conceptually distinct constructs, or, more conservatively, below 0.85 (Hair et al., 2022). A lower HTMT value indicates that the two constructs indeed measure different concepts.

Table 4. Discriminant Validity Test Results: HTMT

Construct	KAP	KEP	KU	PM	TP
Ease of Access to Capital (KAP)					
Trust (KEP)	0,281				
Business Sustainability (KU)	0,316	0,311			
Perceived Usefulness (PM)	0,280	0,290	0,224		
Education Level (TP)	0,016	0,087	0,106	0,045	

Source: Primary data processed using SmartPLS (2026)
Notes: KAP = Ease of Access to Capital; KEP = Trust; KU = Business Sustainability; PM = Perceived Usefulness; TP = Education Level.

Based on Table 4, the discriminant validity test results using the Heterotrait-Monotrait Ratio (HTMT) criterion indicate that all HTMT values between constructs fall below the 0.85 threshold. This demonstrates that each construct meets the discriminant validity criterion—meaning it can be effectively distinguished from other constructs without overlap. Consequently, the measurement model in this study satisfies the requirements for discriminant validity and is deemed suitable for proceeding to the structural model analysis stage.

Uji Reliabilitas: Cronbach's Alpha, Composite Reliability, dan AVE

Reliability and convergent validity testing were conducted simultaneously using Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) values. A construct is considered reliable if its Cronbach's Alpha and Composite Reliability values exceed 0.70, whereas convergent validity is established if the AVE value exceeds 0.50 (Hair et al., 2022).

Table 5. Convergent Validity and Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability (rho_c)	AVE	Information
Ease of Access to Capital (KAP)	0,892	0,920	0,698	Reliabel
Trust (KEP)	0,886	0,916	0,686	Reliabel
Business Sustainability (KU)	0,905	0,929	0,724	Reliabel
Perceived Usefulness (PM)	0,890	0,919	0,694	Reliabel

Source: Primary data processed using SmartPLS (2026)

Based on Table 5, the reliability test results indicate that all constructs have Cronbach's Alpha values above 0.70, ranging from 0.886 to 0.905. Composite Reliability values also exceed the minimum threshold of 0.70, ranging from 0.916 to 0.929. This demonstrates that all constructs in the study possess a good level of reliability, thereby enabling consistent measurement of the constructs. Furthermore, the convergent validity test results show that all constructs have Average Variance Extracted (AVE) values above 0.50, specifically between 0.686 and 0.724. Consequently, each construct meets the convergent validity criteria, as it is capable of explaining more than 50% of the variance in its constituent indicators. Based on these results, all constructs are deemed reliable and valid, making them suitable for use in the subsequent stage of analysis.

Structural Model (Inner Model) Test Results

Once the measurement model (outer model) is confirmed to be valid and reliable, testing proceeds to the structural model (inner model). The evaluation of the structural model aims to assess the predictive capability and the strength of relationships between latent variables within the proposed model. This evaluation encompasses the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and hypothesis testing via bootstrapping (Hair et al., 2022).

Coefficient of Determination (R^2)

Structural model evaluation begins by assessing the coefficient of determination (R^2), which indicates the extent to which the variance of endogenous variables is explained by exogenous variables in the model Hair et al. (2022) classify R^2 values as follows: >0.75 (strong), >0.50 (moderate), and >0.25 (weak).

Table 6. Coefficient of Determination Test Results (R^2)

Construct	R-square	R-square Adjusted
Business Sustainability	0,167	0,145

Source: Primary data processed using SmartPLS (2026)

Based on Table 6, the R^2 value of 0.167 indicates that the variables in the model—perceived usefulness, trust, ease of access to capital, education level, and three moderation interactions—collectively explain 16.7% of the variance in MSME business sustainability. The adjusted R^2 value of 0.145 confirms the consistency of this contribution after adjusting for the number of predictors. This low value indicates that MSME business sustainability is a multidimensional construct also influenced by variables outside the model, thereby offering opportunities for future research to expand the model by incorporating additional variables.

Predictive Relevance (Q^2 predict)

The model's predictive relevance is assessed via the Q^2 value obtained through the blindfolding procedure. A Q^2 value greater than zero indicates predictive relevance; the higher the Q^2 value, the more accurately the model predicts the values of the endogenous construct.

Table 7. Q^2 Predict Test Results

Construct	Q^2 Predict	RMSE	MAE
Business Sustainability	0,115	0,950	0,752

Source: Primary data processed using SmartPLS (2026)

Based on Table 7, the Q^2 value for the Business Sustainability construct is 0.115 (>0), confirming that the model possesses adequate predictive relevance. Although this value is relatively low, the developed model demonstrates a superior ability to predict Business Sustainability values compared to a simple mean-based model.

Effect Size (f^2)

Effect size (f^2) is used to assess the relative contribution of each predictor variable to the endogenous variable within the model Hair et al. (2022) classifies f^2 values as follows: 0.02 (small), 0.15 (medium), and 0.35 (large).

Table 8. Effect Size Test Results (f^2)

Route Connection	f-square
Ease of Access to Capital – Business Sustainability	0,042

Trust – Business Sustainability	0,049
Perceived Usefulness – Business Sustainabilit	0,012
Education Level – Business Sustainabilit	0,008
Education Level Moderates the Relationship between Ease of Access to Capital and Business Sustainability	0,004
Education Level Moderates the Relationship Between Trust and Business Sustainability	0,001
Education Level Moderates the Relationship Between Perceived Usefulness and Business Sustainability	0,015

Source: Primary data processed using SmartPLS (2026)

Based on Table 8, the highest f² value is found in the Trust–Business Sustainability path (0.049), followed by the Ease of Access to Capital–Business Sustainability path (0.042). Both represent small yet meaningful effects. All moderation paths show very low values (less than 0.02), indicating a limited overall contribution of the moderation effect.

Hypothesis Testing: Direct Effects (H1, H2, H3)

Table 9. Direct Effect Hypothesis Test Results

Hypothesis	Track	Original Sampel (O)	Sampel Mean (M)	Standart Deviation (STDEV)	T Statistics (|O/STDEV|)	P Value	Information
H1	Perceived Usefulness – Business Sustainability	0,106	0,112	0,057	1,864	0,062	Rejected
H2	Trust – Business Sustainability	0,214	0,219	0,061	3,492	0,000	Accepted
H3	Ease of Accesss to Capital– Business Sustainability	0,200	0,203	0,059	3,394	0,001	Accepted

Source: Primary data processed using SmartPLS (2026)

Hypothesis testing regarding direct effects was conducted using a bootstrapping procedure with 1,000 subsamples. A hypothesis is accepted if the T-statistic value is >1.96 and the P-value is <0.05 at a 95% confidence level (Hair et al., 2022). Accordingly, the hypothesis test results are as follows:

(H1) The first test examined the effect of Perceived Usefulness on Business Sustainability. Based on Table 9, H1 has an original sample value of 0.106 and a P-value of 0.062. The P-value >0.05 indicates that Perceived Usefulness have a positive but insignificant effect on Business Sustainability. Thus, H1 is rejected.

(H2) The second test examined the effect of Trust on Business Sustainability. Based on Table 9, H2 has an original sample value of 0.214 and a P-value of 0.000. The P-value <0.05 indicates that Trust has a positive and significant effect on Business Sustainability. Thus, H2 is accepted.

(H3) The third test examined the effect of Ease of Access to Capital on Business Sustainability. Based on Table 9, H3 has an original sample value of 0.200 and a P-value of 0.001. The P-value <0.05 indicates that Ease of Access to Capital has a positive and significant effect on Business Sustainability. Thus, H3 is accepted.

Hypothesis Testing: Moderating Effect of Education Level

The moderating effect of education level was tested using the product indicator approach in PLS-SEM. The interaction between the independent variable and the moderating variable (Education Level) was calculated, and its significance was tested via bootstrapping with 1,000 subsamples.

Table 10. Hypothesis Test Results for the Moderating Effect of Education Level

Hypothesis	Track	Original Sampel (O)	Sampel Mean (M)	Standart Deviation (STDEV)	T Statistics (|O/STDEV|)	P Value	Information
H4	Education Level x Perceived Usefulness – Business Sustainability	0,122	0,123	0,059	2,058	0,040	Accepted
H5	Education Level x Trust – Business Sustainabilit	0,034	0,031	0,061	0,568	0,570	Rejected
H6	Education Level x Ease of Access to Capital – Business Sustainabilit	-0,058	-0,059	0,057	1,018	0,309	Rejected

Source: Primary data processed using SmartPLS (2026)

As explained by Hair et al. (2022), A hypothesis is considered accepted if the T-statistic value is >1.96 and the P-value is <0.05 at a 95% confidence level. Accordingly, the hypothesis testing results are as follows:

(H4) The first test examined the role of Education Level in moderating the effect of Perceived Usefulness on Business Sustainability. The results show an original sample value of 0.122 with a P-value of 0.040. The P-value of <0.05 indicates that Education Level positively and significantly moderates the effect of Perceived Usefulness on Business Sustainability. Thus, H4 is accepted.

(H5) The second test examined the role of Education Level in moderating the effect of Trust on Business Sustainability. The results show an original sample value of 0.034 with a P-value of 0.570. The P-value of >0.05 indicates that Education Level does not moderate the effect of Trust on Business Sustainability. Thus, H5 is rejected.

(H6) The third test examined the role of Education Level in moderating the effect of Ease of Access to Capital on Business Sustainability. The results show an original sample value of -0.058 with a P-value of 0.309. The P-value of >0.05 indicates that Education Level does not moderate the effect of Ease of Access to Capital on Business Sustainability. Thus, H6 is rejected.

Based on the tests conducted, the discussion of the findings is presented in the following section.

DISCUSSION

The Influence of Perceived Usefulness on Business Sustainability

The test results indicate that perceived usefulness have a positive but insignificant effect on MSME business sustainability ($\beta = 0.106$; $p = 0.062$); thus, the first hypothesis is rejected. These findings suggest that MSME owners' beliefs regarding the benefits of formal financing do not directly enhance business sustainability. Based on the Technology Acceptance Model (TAM), perceived benefit is defined as the belief that using a system or service will improve the user's performance (Davis, 1989). However, within the TAM framework, perceived usefulness plays a greater role in shaping the intention to use a service than in directly impacting long-term performance. Business sustainability is influenced by various factors—such as managerial capability, financial literacy, market conditions, and access to resources—meaning that perceived usefulness does not automatically translate into business success. This aligns with research Mulyati (2023), which indicates that the perception of benefits has a stronger influence on the intention to use financial services when mediated by trust. The study Saputra et al. (2025) and Putri (2025) also found that perceptions influence the adoption of mobile banking services, although both studies focused on behavior rather than business sustainability. Furthermore, the study by Husna & Susyanti (2024) indicates that MSME sustainability is determined not only by perceptions of a service or technology but also by business owners' ability to implement business development strategies through the digitalization of business processes. These findings suggest that perceived usefulness do not necessarily translate into a direct impact on business sustainability unless accompanied by the implementation of appropriate business strategies. Besides that, Mulyawan et al. (2025) It explains that a positive perception of financial services does not necessarily lead to optimal utilization if not supported by financial literacy and business management skills. In the context of Indonesian MSMEs, the majority of business owners still face limitations regarding financial management and business development, despite the continued increase in access to formal financing (Bank Indonesia, 2026; Kementerian Koperasi & UKM, 2023). Therefore, enhancing the perception of benefits must be accompanied by the strengthening of managerial capacity, financial literacy, and business mentoring, so that the benefits of financing can be translated into improved business sustainability.

The Influence of Trust on Business Sustainability

The research results indicate that trust has a positive and significant effect on the business sustainability of MSMEs ($\beta = 0.214$; $p < 0.001$); thus, the second hypothesis is accepted. This coefficient value is the highest among the independent variables, demonstrating that trust is the most dominant factor in enhancing business sustainability. Within the framework of the Technology Acceptance Model, trust is viewed as a crucial factor capable of reducing perceived risk and increasing user confidence in utilizing financial services (Davis, 1989). MSME owners who place a high level of trust in formal financial institutions are generally more willing to establish long-term financing relationships, as they are confident in the transparency, security, and quality of the services provided. This aligns with the characteristics of formal financing, which typically entails long-term commitments and administrative obligations. Research Saputra et al. (2025) shows that trust has a positive influence on the adoption of mobile banking among MSME owners, while Putri (2025) also identified trust as a key determinant in shaping the intention to use digital financial services. This finding is reinforced by Mulyati (2023), which shows that trust plays an important mediator in the relationship between service perception and intention to use QRIS among MSMEs. In addition, OJK (2025) It is emphasized that increasing public trust in financial institutions is a key factor in expanding formal financing for MSMEs. Higher levels of trust facilitate business owners' access to financing, boost business investment, and ensure business sustainability. Therefore, financial institutions must continue to enhance transparency, service quality, consumer protection, and communication to strengthen the confidence of MSME players, thereby supporting long-term business sustainability.

The Influence of Ease of Access to Capital on Business Sustainability

The test results indicate that ease of access to capital has a positive and significant effect on MSME business sustainability ($\beta = 0.200$; $p = 0.001$); thus, the third hypothesis is accepted. These findings demonstrate that the easier it is for MSME operators to obtain funding, the greater their chances of sustaining and expanding their businesses. In the Technology Acceptance Model, the concept of 'perceived ease of use' posits that a service is more readily accepted when the process of using it is simple and requires minimal effort (Davis, 1989). This concept is relevant to access to financing, as simple procedures, easy requirements, and fast disbursement processes encourage MSMEs to utilize financing options. The results of this study align with Lestari et al. (2025), which found that access to financial services and fintech plays a crucial role in increasing financial inclusion and supporting business sustainability. This finding is supported by Riyanti & Aini (2022), which states that ease of obtaining working capital is a key factor in helping MSMEs survive various economic pressures. Furthermore, Bank Indonesia (2026) explaining that expanding access to financing is a strategy to boost MSME competitiveness and sustainable growth. Peraturan OJK Nomor 19 Tahun 2025 also emphasized the importance of simplifying financing procedures to facilitate MSME access to formal financial institutions. This issue remains relevant, given that limited access to banking services continues to be a major challenge for MSME development in Indonesia. (Infobank News, 2026). Conversely, the growing number of MSMEs successfully transitioning from the informal to the formal sector demonstrates that easy access to financing can foster sustainable business development (AntaraJATIM, 2025). Therefore, the digitalization of financing services, the simplification of administrative requirements, and the acceleration of fund disbursement processes need to be continuously enhanced so that more MSMEs can leverage formal financing to drive their business growth.

The Moderating Role of Education Level on the Effect of Perceived Usefulness on Business Sustainability

The test results indicate that education level positively and significantly moderates the effect of perceived usefulness on business sustainability ($\beta = 0.122$; $p = 0.040$); thus, the fourth hypothesis is accepted. These findings demonstrate that the impact of perceived usefulness on business sustainability is stronger among MSME owners with higher levels of education. Based on Human Capital Theory, education serves as an investment that enhances an individual's knowledge, skills, and ability to make decisions more effectively (Becker, 2009). In the context of this research, education helps MSME owners understand the benefits of formal financing and optimize its use to support business development. Higher levels of education correlate with better abilities in developing financial plans, managing cash flow, and determining productive capital utilization strategies. Conversely, business owners with lower levels of education tend to struggle to translate positive perceptions of financing benefits into business decisions that support sustainability. These results are supported by Mulyawan et al. (2025), who found that education increases an individual's ability to utilize financial services more optimally. This finding is supported by Utrojah et al. (2026), which explains that education plays a role in increasing financial literacy, thereby strengthening the resilience and sustainability of MSMEs. Furthermore, Davis (1989) It is explained that individual characteristics can influence the relationship between user perceptions and usage behavior within the Technology Acceptance Model framework. Thus, education level can be viewed as a factor that strengthens a business owner's ability to translate perceived usefulness into concrete actions that support business sustainability. Therefore, financial literacy programs and MSME support initiatives need to be tailored to the business owners' education levels to optimize the benefits of formal financing and generate a greater impact on business sustainability.

The Moderating Role of Education Level on the Influence of Trust on Business Sustainability

The test results indicate that the interaction between education level and trust does not have a significant effect on business sustainability ($\beta = 0.034$; $p = 0.570$); thus, the fifth hypothesis is rejected. These findings suggest that the impact of trust on business sustainability remains relatively consistent across MSME owners, regardless of their education level. Based on Human Capital Theory, education primarily enhances an individual's ability to comprehend information and make decisions through cognitive processes (Becker, 2009). However, trust is more influenced by experience, service quality, institutional reputation, and long-term relationships than by individual academic ability. Consequently, business owners with both low and high levels of education can build trust in financial institutions based on their actual experiences. These results align with Putri (2025), which shows that trust is formed through service quality and user experience, not solely influenced by demographic characteristics. This finding is supported by Saputra et al. (2025), which explains that trust is a major factor in the use of digital financial services, regardless of the user's education level. Furthermore, OJK (2023) It is emphasized that enhancing public trust in financial institutions is a strategy aimed at all segments of society, regardless of educational background. Consequently, building trust requires a consistent approach that entails improving transparency, service quality, and legal certainty, as well as ensuring consumer protection. The study's findings indicate that trust is a universal factor capable of driving business sustainability for MSMEs, irrespective of the diverse educational backgrounds of the business owners. Therefore, financial institutions need not differentiate their trust-building strategies based on customers' education levels; instead, they should focus on consistently enhancing service quality for all MSMEs.

The Moderating Role of Education Level on the Effect of Ease of Access to Capital on Business Sustainability

The research results indicate that education level does not moderate the effect of ease of access to capital on business sustainability ($\beta = -0.058$; $p = 0.309$); thus, the sixth hypothesis is rejected. Although the interaction coefficient shows a negative direction, the effect is not statistically significant and therefore cannot be interpreted as a meaningful relationship. These findings suggest that the benefits of easy access to capital are experienced relatively evenly by MSME owners across various education levels. Based on Human Capital Theory, education exerts a greater influence on activities requiring analytical skills and complex information processing (Becker, 2009). In contrast, ease of access to capital is specifically designed to reduce administrative barriers and simplify the financing application process, thus eliminating the need for high-level cognitive abilities. Therefore, when financing procedures are simplified, MSME owners of all educational levels have an equal opportunity to benefit from the service. This finding aligns with Lestari et al. (2025), which found that easy access to technology-based financial services increases financial inclusion for business actors with varying levels of literacy. This finding is supported by Kwarto et al. (2025), which explains that simplifying access to business resources is a form of empowerment that can be felt equally by all MSMEs. Furthermore, Peraturan OJK Nomor 19 Tahun 2025 emphasizing that simplifying access to financing aims to expand financial inclusion for all MSMEs, regardless of the business owner's educational background. This view is also supported by Bank Indonesia (2026), which identifies ease of access to financing as a key strategy for expanding capital access for MSMEs in Indonesia. Thus, the study's findings indicate that ease of access to capital is an inclusive factor benefiting all MSME players; meanwhile, efforts to improve human resource quality through education are more appropriately directed toward financial literacy and business management rather than the simplification of financing procedures.

CONCLUSION

This study analyzes the determinants of MSME business sustainability within the context of access to formal financing, with education level serving as a moderating variable. Based on an SEM-PLS analysis of 268 MSME respondents, several key conclusions can be drawn. First, trust in financial institutions proved to be the strongest determinant of MSME business sustainability, followed by ease of access to capital. Both variables were consistently significant and have direct implications for financial inclusion development strategies. Second, perceived usefulness were not found to have a significant direct effect on business sustainability, indicating that the influence of perceived usefulness is conditional. Third, regarding moderation, education level significantly strengthened the effect of perceived usefulness on business sustainability, consistent with the predictions of human capital theory. Conversely, education level did not moderate the effects of trust or ease of access to capital, suggesting that these two variables operate universally across different educational segments. From a theoretical perspective, this study contributes by extending the application of the Technology Acceptance Model (TAM) to the context of MSME business sustainability—specifically by integrating demographic factors as moderating variables to explain the heterogeneity of business owners' responses—and by empirically validating the integration of human capital theory into the TAM framework. Practically, the study yields three key recommendations: financial institutions should prioritize trust-building through procedural transparency and service consistency as a primary strategy to enhance MSME customer loyalty; capital access procedures need to be further simplified to ensure inclusive reach across all MSME segments; and financial literacy programs should be tailored to business owners' educational backgrounds to maximize the conversion of perceived usefulness into sustainable managerial actions. The study has certain limitations, as the relatively low explanatory power of the model suggest the existence of other explanatory variables not captured by the model, while the lack of strict geographic boundaries limits the generalizability of the findings. Future research is advised to consider additional variables—such as digital financial literacy, social capital, or innovation capabilities—and to expand the geographic scope while employing a longitudinal approach to capture the dynamics of business sustainability more comprehensively.

REFERENCE

AntaraJATIM. (2025, December 17). Kementerian UMKM catat 14,6 juta UMKM naik kelas dari sektor informal ke formal. *AntaraJATIM*. *Https://Jatim.Antaranews.Com/Berita/1014868/Kemen-Umkm-Catat-146-Juta-Umkm-Naik-Kelas-Dari-Sektor-Informal-Ke-Formal.*

Ardiansyah, K. S., Susyanti, J., & Novianto, A. S. (2025). The Effect Of Reputation, Storage Security And Trust On Customers'preferences In Choosing Sharia Gold Pawning. *Proceedings of the International Conference of Islamic Economics and Business (ICONIES)*, *11*(1), 1357–1364. https://conferences.uin-malang.ac.id/index.php/iconies/article/view/3547

Bank Indonesia. (2026). *Akses Pembiayaan UMKM*. Bank Indonesia. Https://Www.Bi.Go.Id/Id/Umkm/Pembiayaan/Default.Aspx.

Becker, G. S. (2009). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press. https://books.google.co.id/books?id=9t69iICmrZ0C

Chamidah, A. N., Susyanti, J., & Hidayah, N. (2025). The Influence of Financial Literacy, Inclusion, and Tax Knowledge on the Financial Performance of MSMEs. *BASKARA : Journal of Business and Entrepreneurship*, *8*(1). https://doi.org/10.54268/baskara.v8i1.23437

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319–340. https://doi.org/10.2307/249008

Febrian, S. (2025). Ketimpangan Daya Saing antara Pelaku Usaha besar dan UMKM dalam Pasar Monopoli di Kabupaten Sumbawa. *Jurnal Ekonomi Dan Bisnis*, *13*(2), 190–199. https://doi.org/10.58406/jeb.v13i2.2114

Graña-Alvarez, R., Lopez-Valeiras, E., Gonzalez-Loureiro, M., & Coronado, F. (2024). Financial literacy in SMEs: A systematic literature review and a framework for further inquiry. *Journal of Small Business Management*, *62*(1), 331–380. https://doi.org/10.1080/00472778.2022.2051176

Hair, Jr. J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publishing.

Harrieti, N., Ikhwansyah, I., & Ahmad, A. A. (2024). The role of Sharia banking in strengthening the assets of village-owned enterprises in Indonesia. *Cogent Social Sciences*, *10*(1). https://doi.org/10.1080/23311886.2024.2350557

Infobank News. (2026, April 8). Keterbatasan Akses Pembiayaan masih menjadi Tantangan UMKM. *Infobank News. Https://Infobanknews.Com/Keterbatasan-Akses-Pembiayaan-Masih-Jadi-Tantangan-Umkm.*

International Monetary Fund Asia and Pacific Department. (2023). Financing Barriers and Performance of Micro, Small, and Medium Enterprises (MSMES). In *In IMF Staff Country Reports* (Vol. 24, Number 271). https://doi.org/10.5089/9798400284663.002.A002

Kementerian Koperasi & UKM. (2023). *Perkembangan Data Usaha Mikro, Kecil, Menengah (UMKM) dan Usaha Besar Tahun 2021-2022*. Kemenkop UKM. Https://Indonesia.Go.Id/Kategori/Indonesia/Dalam-Angka/7525/Menuju-Saya-Tunggal-Umkm.

Kwarto, F., Minanari, M., & Suprapto, S. (2025). Pemberdayaan Usaha Mikro, Kecil, dan Menengah (UMKM) melalui Implementasi Customer Lifetime Value (CLV): Sebuah Kegiatan Pengabdian Masyarakat di Kembangan Selatan, Indonesia. *PRIMA: Portal Riset Dan Inovasi Pengabdian Masyarakat*, *4*(4), 135–142. https://doi.org/10.55047/prima.v4i4.1827

Lestari, E. D., Kurniasari, F., & Loebiantoro, I. Y. (2025). Financial Literacy and FinTech Access as Drivers of Financial Inclusion and Business Sustainability among Women Entrepreneurs. *Indonesian Journal of Sustainability Accounting and Management*, *9*(1). https://doi.org/10.20448/ijsam.v9i1.7270

Mulyati, O. D. (2023). *Pengaruh Persepsi Manfaat, Persepsi Kemudahan Penggunaan, Dan Persepsi Risiko Terhadap Minat Penggunaan Yang Dimediasi Oleh Kepercayaan Layanan Transaksi Quick Response Code Indonesian Standard (Qris) Pada Umkm Di Jawa. 2023* [Tesis, Sekolah Tinggi Ilmu Ekonomi YKPN]. http://repositorybaru.stieykpn.ac.id/1916/

Mulyawan, I. B. A. P., Asana, G. H. S., & Oktaviani, L. (2025). Pengaruh Literasi Keuangan dan Tingkat Pendidikan Terhadap Penggunaan Pinjaman Online Dengan Risiko Kredit Sebagai Variabel Moderasi. *Balance : Jurnal Akuntansi Dan Manajemen*, *4*(1), 236–245. https://doi.org/10.59086/jam.v4i1.739

Mutasowifin, A., & Sutisna, C. (2023). MSME's Financing Decisions and the Roles of Financial Literacy and Microbusiness Demographics. *Jurnal Ilmiah Manajemen Kesatuan*, *11*(2), 445–460. https://doi.org/10.37641/jimkes.v11i2.2104

OJK. (2023, November 27). Roadmap Pengembangan dan Penguatan Perbankan Syariah Indonesia 2023-2027. *Otoritas Jasa Keuangan. Https://Ojk.Go.Id/Id/Publikasi/Roadmap-Dan-Pedoman/Syariah/Perbankan-Syariah-Indonesia/Pages/Roadmap-Pengembangan-Dan-Penguatan-Perbankan-Syariah-Indonesia-2023-2027.Aspx.*

OJK. (2025). *Laporan Perkembangan Keuangan Syariah Indonesia 2024*. https://ojk.go.id/id/kanal/syariah/data-dan-statistik/laporan-perkembangan-keuangan-syariah-indonesia/Pages/Laporan-Perkembangan-Keuangan-Syariah-Indonesia-2024.aspx

Othman, B. A., Abdalla, R. J., & Rashed, S. O. (2026). Constructing Digital Financial Trust in SMEs within Emerging Economies: A Grounded Theory Study. *JMM17 : Jurnal Ilmu Ekonomi Dan Manajemen*, *13*(1), 106–115. https://doi.org/10.30996/jmm17.v13i1.133489

Pamungkas, A. D., & Bratamanggala, R. (2025). Access To Capital For Micro, Small, and Medium Enterprises (MSMES/UMKM) Through Formal and Informal Financial Institutions. *Jurnal Multidisiplin Indonesia*, *3*(2), 12–18. https://ejournal.alhafiindonesia.co.id/index.php/JOUMI/article/view/478/422

Peraturan Otoritas Jasa Keuangan Nomor 19 Tahun 2025 Tentang Kemudahan Akses Pembiayaan Kepada Usaha Mikro, Kecil Dan Menengah, BPK RI (2025).

Putri, E. N. (2025). Perceived Ease of Use, Perceived Usefulness and Perceived Trust on Behavior Intention to Use Mobile Banking. *Amkop Management Accounting Review (AMAR)*, *5*(2), 547–554. https://doi.org/10.37531/amar.v5i2.2362

Rahmawati, C. H. T., & Muharam, H. (2026). The Use of Digital Financial Services by MSMEs: The Role of Financial Literacy through Trust Mediation. *Journal of Management and Entrepreneurship Research*, *7*(1), 131–142. https://doi.org/10.34001/jmer.2026.3.07.1-94

Riyanti, B., & Aini, N. A. N. (2022). Strategi Keberlangsungan Usaha Umkm Kampung Singkong Pada Masa Pandemi Covid-19. *Among Makarti*, *15*(2). https://doi.org/10.52353/ama.v15i2.309

Saputra, P. R., Rosadi, M. U., & Sa'adah, I. (2025). Pengaruh Perceived Usefulness, Perceived Ease of Use, dan Trust terhadap Adopsi Mobile Banking pada UMKM di Kabupaten Malang. *MUSYTARI: Neraca Akuntansi Manajemen, Ekonomi*, *25*(2). https://cibangsa.com/index.php/musytari/article/view/9058/7827

Utrojah, R., Aprila, N., & Susanto, D. (2026). Literasi Keuangan dan Keberlanjutan UMKM: Mediasi Ketangguhan Kewirausahaan dan Akses terhadap Keuangan. *Owner*, *10*(2), 1426–1444. https://doi.org/10.33395/owner.v10i2.3161

Wijaya, I. F., & Moro, A. (2022). Trustworthiness and margins in Islamic small business financing: Evidence from Indonesia. *Borsa Istanbul Review*, *22*, S35–S46. https://doi.org/10.1016/j.bir.2022.10.010

Wijaya, I. F., Widjajanto, A., & Prabowo, M. A. (2026). Building trust: evidence from small business financing in Indonesia. *Journal of Innovation and Entrepreneurship*, *15*(1), 17. https://doi.org/10.1186/s13731-026-00634-9