

THE MEDIATING ROLE OF BUSINESS PERFORMANCE IN THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND BUSINESS SUSTAINABILITY AMONG MSMES IN MALANG INDONESIA

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Abstract

Background – This study investigates the relationship between financial literacy and business sustainability among Micro, Small, and Medium Enterprises (MSMEs) in Malang Regency/City, emphasizing the mediating role of business performance. The research aims to uncover how financial literacy affects operational decisions and outcomes, offering practical insights for improving long-term sustainability.

Aim – This study aims to explain in detail the effect of financial literacy on MSME sustainability, while considering the mediating role of business performance. The focus is to identify the extent to which financial knowledge influences operational efficiency and the long-term resilience of businesses.

Design / methodology / approach – A quantitative method was used with a sample of 300 MSMEs that have operated for at least one year. Using simple random sampling, data were collected and analysed with Structural Equation Modelling-Partial Least Squares (SEM-PLS).

Findings – The results indicate that financial literacy has a positive and statistically significant effect on MSME business performance ($\beta = 0.471$; $t = 8.708$; $p < 0.001$). Financial literacy also shows a direct positive effect on business sustainability ($\beta = 0.201$; $t = 3.536$; $p < 0.001$), while business performance demonstrates a stronger direct influence on sustainability ($\beta = 0.567$; $t = 12.719$; $p < 0.001$). The model explains 22.1% of the variance in business performance and 46.9% of the variance in sustainability, indicating acceptable explanatory power. These findings confirm that business performance acts as a critical mediating mechanism through which financial literacy enhances business sustainability, suggesting that improving entrepreneurs' financial capabilities contributes both directly and indirectly to sustainable MSME development.

Conclusion – The conclusion obtained in this study is that financial literacy has a positive and statistically significant effect on MSME business performance, financial literacy has a direct positive effect on business sustainability, and business performance has a critical mediating role between financial literacy and business sustainability.

Research implication – The results show that financial literacy significantly improves MSME performance ($\beta = 0.471$; $p < 0.001$) and sustainability ($\beta = 0.201$; $p < 0.001$), while performance strongly drives sustainability ($\beta = 0.567$; $p < 0.001$). These empirical patterns indicate that financial education initiatives should be prioritized because they improve performance first, which then strengthens sustainability. Policymakers are therefore encouraged to design targeted, practical financial programs linked to performance coaching.

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Limitations – *The study is limited to the Malang region and uses a quantitative design. It focuses on three variables, excluding factors like access to financing, government support, technology, and market dynamics.*

Keyword: *Financial Literacy, Business Performance, Sustainability, MSMEs, Mediation*

Abstrak

Latar Belakang – Penelitian ini mengkaji hubungan antara literasi keuangan dan keberlanjutan bisnis pada Usaha Mikro, Kecil, dan Menengah (UMKM) di wilayah Kabupaten/Kota Malang, dengan menekankan peran mediasi kinerja bisnis. Penelitian ini bertujuan untuk mengungkap bagaimana literasi keuangan memengaruhi pengambilan keputusan operasional dan hasil bisnis, serta memberikan wawasan praktis guna meningkatkan keberlanjutan jangka panjang.

Tujuan – Penelitian ini bertujuan untuk menjelaskan secara rinci pengaruh literasi keuangan terhadap keberlanjutan UMKM, dengan mempertimbangkan peran mediasi dari kinerja bisnis. Fokus utama adalah untuk mengidentifikasi sejauh mana pemahaman keuangan memengaruhi efisiensi operasional dan daya tahan bisnis dalam jangka panjang.

Desain / Metodologi / Pendekatan – Penelitian ini menggunakan metode kuantitatif dengan sampel sebanyak 300 UMKM yang telah beroperasi minimal satu tahun. Melalui teknik simple random sampling, data dikumpulkan dan dianalisis menggunakan metode Structural Equation Modeling–Partial Least Squares (SEM-PLS).

Temuan – Hasil penelitian menunjukkan bahwa literasi keuangan memiliki pengaruh positif dan signifikan secara statistik terhadap kinerja usaha UMKM ($\beta = 0,471$; $t = 8,708$; $p < 0,001$). Literasi keuangan juga menunjukkan pengaruh positif langsung terhadap keberlanjutan usaha ($\beta = 0,201$; $t = 3,536$; $p < 0,001$), sementara kinerja usaha memiliki pengaruh langsung yang lebih kuat terhadap keberlanjutan ($\beta = 0,567$; $t = 12,719$; $p < 0,001$). Model penelitian ini mampu menjelaskan 22,1% varians kinerja usaha dan 46,9% varians keberlanjutan usaha, yang menunjukkan daya jelaskan (explanatory power) yang memadai. Temuan ini menegaskan bahwa kinerja usaha berperan sebagai mekanisme mediasi yang penting dalam hubungan antara literasi keuangan dan keberlanjutan usaha, sehingga peningkatan kemampuan keuangan pelaku usaha berkontribusi baik secara langsung maupun tidak langsung terhadap pengembangan UMKM yang berkelanjutan.

Implikasi Penelitian – Hasil penelitian menunjukkan bahwa literasi keuangan secara signifikan meningkatkan kinerja UMKM ($\beta = 0,471$; $p < 0,001$) dan keberlanjutan usaha ($\beta = 0,201$; $p < 0,001$), sementara kinerja usaha memiliki pengaruh yang kuat terhadap keberlanjutan ($\beta = 0,567$; $p < 0,001$). Pola empiris ini menunjukkan bahwa inisiatif edukasi keuangan perlu diprioritaskan karena terlebih dahulu meningkatkan kinerja, yang pada akhirnya memperkuat keberlanjutan usaha. Oleh karena itu, pembuat kebijakan didorong untuk merancang program keuangan yang terarah dan praktis, yang diintegrasikan dengan pendampingan peningkatan kinerja usaha.

Kesimpulan – Kesimpulan yang didapat dari penelitian ini adalah literasi keuangan memiliki pengaruh positif dan signifikan secara statistik terhadap kinerja bisnis UMKM, literasi keuangan memiliki pengaruh positif langsung terhadap keberlanjutan bisnis, dan kinerja bisnis memiliki peran mediasi yang penting antara literasi keuangan dan keberlanjutan bisnis.

Batasan Penelitian – Penelitian ini terbatas pada wilayah Malang dan menggunakan pendekatan kuantitatif. Studi ini hanya fokus pada tiga variabel utama, sehingga belum mempertimbangkan faktor lain seperti akses pembiayaan, dukungan pemerintah, teknologi, dan dinamika pasar.

Kata Kunci: Literasi Keuangan, Kinerja Bisnis, Keberlanjutan, UMKM, Mediasi

INTRODUCTION

Financial literacy has increasingly become a critical area of inquiry in small business and entrepreneurship research (Fatikhah, 2024). A growing number of studies emphasize the role of financial knowledge and behavior in enhancing the sustainability and performance of Micro, Small, and Medium Enterprises (MSMEs) (Aisyah, et al, 2024; Meldona, et al, 2023). In Indonesia, MSMEs represent the backbone of the national economy, contributing over 60% to GDP and absorbing the majority of the workforce (Naufal & Purwanto, 2022). Micro, Small, and Medium Enterprises (MSMEs) are the most effective economic sector in developing entrepreneurship and are the main drivers of the national economy (Hikmah et al., 2024). Yet despite their economic relevance, many Indonesian MSMEs continue to struggle with long-term business sustainability, raising concerns about the underlying factors affecting their performance and continuity. Previous literature has widely acknowledged that financial literacy defined as the ability to understand, evaluate, and use financial information for informed decision-making plays a pivotal role in MSME management. Well-informed MSME owners are more likely to engage in effective budgeting, risk management, and investment planning (Ayu & Gede, 2020). Financially literate entrepreneurs also tend to access financial services more easily and make better use of

credit facilities. Several empirical studies suggest a positive link between financial literacy and MSME outcomes such as profitability, growth, and operational efficiency (Aisyah, et al, 2024; Meldona, et al, 2023).

However, the empirical evidence remains inconclusive. While some studies affirm that financial literacy directly enhances MSME performance, others argue that the relationship is not straightforward. (Naufal & Purwanto, 2022) found no significant direct impact of financial literacy on MSME performance, suggesting that additional factors such as managerial ability, employee discipline, or contextual constraints may play a role. Likewise, (Harahap et al., 2024) observed that in North Sumatra, financial literacy had no direct effect on MSME welfare, indicating the presence of mediating variables in the relationship between financial literacy and sustainability outcomes.

Considering these mixed findings, scholars have increasingly turned to mediation-based models to explore the indirect effects of financial literacy. Recent studies highlight that financial literacy may influence sustainability through intermediate variables such as financial behavior (Widagdo & Sa'diyah, 2023), performance (Aribawa, 2016), and technology adoption (Budiarto et al., 2023).

This suggests that financial literacy may not necessarily produce direct results but can shape performance-related behaviours that ultimately drive business sustainability. However, few studies have empirically tested such mediation models, particularly in the context of Indonesia's MSME ecosystem.

East Java, and specifically Malang Regency/City, offers a unique empirical context for this investigation. As a major hub for MSME development, the region hosts more than 450,000 MSMEs (Amin, 2024) and has a relatively high financial inclusion rate (92.99%) and a financial literacy rate above the national average (Deny, 2024). Paradoxically, many MSME owners in this area still face difficulties in financial planning, resource allocation, and business continuity. This paradox high financial access but persistent sustainability challenges call for deeper explanation.

Although previous studies have examined the link between financial literacy, business performance, and sustainability, many still focus primarily on direct relationships or treat performance only as an outcome variable. As a result, the literature lacks clear empirical evidence demonstrating how financial literacy translates into sustainability and through which pathways this occurs. Moreover, few studies contextualize their analysis in regions where financial inclusion is already high, yet sustainability problems remain.

This study addresses these gaps by developing and empirically testing a mediation model in which business performance functions as the mechanism linking financial literacy to sustainability. The novelty of this research lies in three main contributions: (1) examining business performance explicitly as a mediating variable rather than solely an outcome; (2) situating the analysis within the MSME context of Malang, where financial inclusion is strong but sustainability challenges persist; and (3) providing empirical evidence using PLS-SEM to clarify when financial literacy effectively contributes to sustainable business outcomes.

LITERATURE REVIEW

Financial Literacy and MSME Performance

Financial literacy serves as a critical component for achieving positive financial outcomes and maintaining economic stability (Ashley B LeBaron-Black, Heather Kelley, 2025) (Ashley B LeBaron-Black, Heather Kelley, 2025). This essential capability contributes significantly to economic growth and financial inclusion (R. Muthu Lakshmi, 2023), enabling individuals to manage finances effectively, make sound decisions, and support national economic development (Gudjonsson, Jonsdottir, & Minelgaite, 2022). The concept encompasses comprehensive financial knowledge, skills,

attitudes, and behaviors that prove vital for sound financial management in dynamic economic conditions.

Enhanced financial literacy leads to improved financial decision-making, directly benefiting MSME performance (Fatoki, 2021). It facilitates proper bookkeeping and effective budgeting - crucial elements for sales growth, profitability, and overall business performance (Iramani, Fauzi, Wulandari, & Lutfi, 2018). When combined with financial technology and inclusion, financial literacy substantially boosts MSME outcomes (Gunawan, Jufrizen, & Pulungan, 2023) (Gunawan et al., 2023). Furthermore, it moderates the relationship between financing access and performance, suggesting that higher financial literacy levels amplify performance results (Fatoki, 2021).

H₁: Financial literacy positively influences MSME performance

Financial Literacy and Business Sustainability

Financial literacy plays a pivotal role in MSME sustainability, though its direct effects are often mediated by other factors (Widagdo & Sa'diyah, 2023). While some studies indicate financial literacy alone doesn't directly impact business sustainability, it influences mediating variables like financial behavior and technology adoption that ultimately affect sustainability (Harnida, 2024). Improved

financial decision-making capability supports business sustainability through risk mitigation and better financial management (Indrawati et al., 2025). This differs from research conducted by Ramadani (2025) which shows that financial literacy does not have a real direct impact on the sustainability of MSMEs. The combination of financial literacy and technological infrastructure also positively impacts sustainability (Harnida, 2024), though some research suggests its effects become significant only when combined with market orientation and government support (Budiarto, Prabowo, & Kartika, 2023).

H₂: Financial literacy positively influences MSME business sustainability

MSME Performance and Business Sustainability

MSME performance represents a strong determinant of business sustainability. Studies demonstrate that performance improvements, driven by dynamic capabilities and financial behavior, contribute to better sustainability outcomes (Supramono, Damayanti, & Adhitya, 2025). Post-crisis recovery speed significantly impacts sustainability, highlighting the importance of adaptive capacity (Supramono et al., 2025). Market orientation combined with financial literacy further enhances sustainability (Budiarto et al., 2023), with better-performing MSMEs demonstrating

greater long-term sustainability potential (Listyaningsih, 2024).

H3: MSME performance positively influences business sustainability

MSME Performance as Mediator Between Financial Literacy and Sustainability

MSME performance mediates the relationship between financial literacy and business sustainability (Zunairoh & Wijaya, 2024). Financial literacy enhances performance, which in turn strengthens sustainability (Gunawan et al., 2023). Research confirms that financial literacy affects performance through improved

financial management practices that subsequently support sustainability (Iramani et al., 2018). The combination of financial literacy with financial inclusion and technology indirectly promotes sustainability by first improving performance (Gunawan et al., 2023). This mediating effect underscores financial literacy's importance in driving performance improvements that lead to sustainable business practices (Listyaningsih, 2024).

H4: MSME performance mediates the relationship between financial literacy and business sustainability

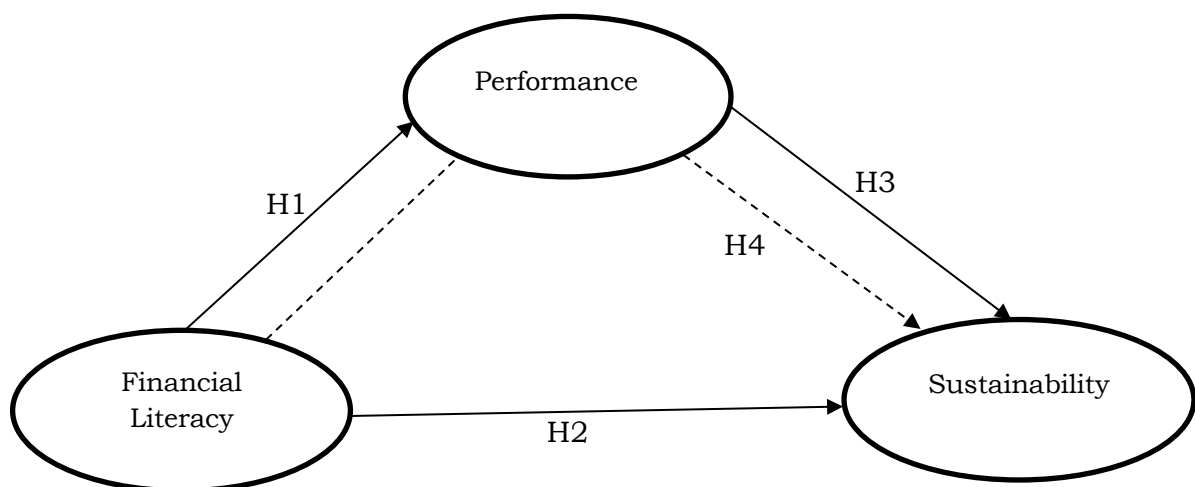


Figure 1. Research Framework

RESEARCH METHODS

This study employs a quantitative approach utilizing Structural Equation Modeling (SEM) to examine the predictive relationship between financial literacy and business sustainability, with business performance as

a mediating variable. The SEM method was selected for its robust capability to simultaneously analyze complex relationships between latent variables while comprehensively testing the overall model's validity and reliability.

The research location was purposively selected to focus on MSMEs in Malang Regency and City, East Java. This region represents an ideal research setting, with a total of 452,270 MSMEs recorded in 2024 - comprising 21,270 units in Malang City and 431,000 units in Malang Regency (Amin, 2024.) This substantial concentration of MSMEs, coupled with the area's diverse economic characteristics, makes it particularly suitable for this investigation.

The study employed purposive sampling technique to identify respondents that met specific criteria relevant to the research objectives. The research instrument consisted of a carefully designed questionnaire incorporating variable indicators adapted from established literature and previous studies. A sample size of 300 MSMEs in Malang Regency/City

was determined based on minimum sample requirements for SEM analysis. As noted by experts including (Alimin, Putra, Nasib, Salqaura, & Tambunan, 2025), a minimum of 200 respondents is recommended to obtain stable and accurate model estimates, making the selected sample size of 300 adequate to ensure the validity and reliability of the constructed model.

The methodological approach ensures a rigorous examination of the hypothesized relationships while accounting for the complex interplay between financial literacy, business performance, and sustainability in the MSME context. The substantial sample size and robust analytical technique enhance the study's ability to generate meaningful insights applicable to both academic discourse and practical MSME development strategies.

Table 1
 Functional Definitions of Variables

Variable	Indicator
Financial Literacy	<ol style="list-style-type: none"> 1. Understanding asset liquidity 2. Benefits of personal financial knowledge 3. Knowledge of net assets 4. Understanding income and expenses 5. Personal financial planning awareness 6. Characteristics of deposit products 7. Credit card interest comprehension 8. Compound interest calculation ability 9. Understanding savings benefits 10. Knowledge of loan types 11. Basic insurance concepts 12. Insurance premium understanding 13. Identification of high-risk population groups 14. Differentiation between insurance types 15. Awareness of insurance risks

Variable	Indicator
	16. Knowledge of stock types 17. Long-term investment principles 18. Understanding investment risks 19. Mutual fund comprehension 20. Price-investment relationship awareness
Performance	1. The existence of planned work that proceeds according to the work plan 2. Frequent work errors that lead to repetition 3. An increase in sales growth 4. A decrease in fixed costs 5. The ability to anticipate production if demand increases 6. Assurance of on-time delivery to customers 7. Product compliance with the offered specifications
Sustainability	1. Strategic business location selection 2. Break-even point (BEP) has been achieved 3. A system for tracking customer satisfaction is in place 4. A system for tracking employee/manager satisfaction is in place

RESULT AND DISCUSSION

Respondent Profile

The demographic characteristics of respondents by age group are presented in the following table 1. Based on data from 300 respondents, the majority were in the age range of 26–41 years, totaling 143 respondents (48%). The second-largest age group was 17–25 years, with 123 respondents (41%). Meanwhile, 22 respondents (7%) were over 41 years old, and 12 respondents (4%) were under 17 years old. This indicates that most respondents fall within the productive age group of 26–41 years.

Out of a total of 300 respondents, the majority of MSMEs operate in the Food and Beverage sector, with 117 respondents (39%). This is followed by the Fashion sector

with 43 respondents (14%), and the Handicraft sector with 39 respondents (13%). The Services sector accounts for 37 respondents (12%), and the Trade sector includes 32 respondents (11%). The Tourism and Transportation sectors each have 6 respondents (2%), while the Other sectors comprise 20 respondents (7%). Based on this data, it can be concluded that the Food and Beverage sector is the most dominant MSME sector in this research sample.

Out of the total 300 respondents, the majority have a final educational background of a Diploma (D3) or Bachelor's degree (S1), totaling 150 respondents (50%). This is followed by 124 respondents (41%) whose highest education level is senior high school (SMA). Respondents with a junior high school (SMP) education or below

number 13 (4%). Additionally, there are 10 respondents (4%) with a Master's degree (S2), and only 3 respondents (1%) hold a Doctoral degree (S3). This data indicates that most respondents have a medium to high level of education, with a dominant proportion holding a Diploma or Bachelor's Degree.

Outer Model Analysis

In this study, hypothesis testing was conducted using the Partial Least Squares (PLS) data analysis technique with the SmartPLS 3.0 software. The outer model testing is used to determine the specification of the relationship between latent variables and their indicators (see figure 2). This test includes validity, reliability, and multicollinearity assessments.

An indicator is considered to have good convergent validity if the outer loading value is greater than 0.7. The following are the outer loading values of each indicator in the research variables. Based on table 2, many of the research variable indicators have outer loading values greater than 0.7. However, according to (Ghozali, 2015) outer loading values between 0.5 are considered sufficient to meet the criteria for convergent validity. The data shows that there are no indicators with outer loading values below 0.5, meaning that all indicators are considered appropriate or valid for use in the study and can be included in further analysis.

In this study, indicators that did not meet the outer loading criteria were previously eliminated. After four rounds of elimination, namely by removing indicators X1, X2, X3, X4, X5, followed by Y2, the filtered outer results were obtained as shown in Table 2 and figure 3. In addition to assessing outer loading values, convergent validity can also be evaluated by examining the Average Variance Extracted (AVE). An AVE value greater than 0.5 indicates that the construct has adequate convergent validity (Fornell and Larcker, 1981). Table 4 are the AVE values for each research variable. Based on table 4 presents the Average Variance Extracted (AVE) values for each variable in the study to assess convergent validity. All variables show AVE values above 0.5, namely: Financial Literacy (X) at 0.603, Business Performance (Z) at 0.567, and Business Sustainability (Y) at 0.531. Based on these values, all variables are considered valid as they meet the minimum AVE criterion of > 0.5 , indicating that the indicators of each variable are able to explain the variance of their respective constructs well.

Discriminant Validity

Discriminant validity is tested to ensure that each construct or latent variable is distinct from the others. This test uses cross-loading values. An indicator is said to meet the criteria for discriminant validity if its cross-loading value on its corresponding variable

is higher than its loading on other variables (Chin, 1998). Table 5 presents the cross-loading values for each indicator. Based on table 5, each indicator of the research variables has the highest cross-loading value on its corresponding construct compared to its loading on other constructs. Based on these results, it can be concluded that the indicators used in this study possess good discriminant validity in representing their respective variables.

Besides cross-loading, discriminant validity can also be measured using the HTMT test. The Heterotrait–Monotrait Ratio (HTMT) test is used to ensure that each construct in a study is truly distinct and does not overlap. A construct is said to have good discriminant validity if the HTMT value is below the recommended limit, which is <0.90 .

Table 6 shows the results of the Heterotrait–Monotrait Ratio (HTMT) test between the variables in the study, namely Financial Literacy, Performance, and Sustainability. The HTMT value between Financial Literacy and Performance is 0.518, between Financial Literacy and Sustainability is 0.530, and between Performance and Sustainability is 0.774. All of these values are below the recommended limit of 0.90, so it can be concluded that there are no discriminant validity issues between the constructs. These results indicate that each variable is able to represent different concepts and do not

overlap, so the measurement model in this study is declared feasible and can be used for further structural analysis.

Reliability Test

The reliability test shows the level of consistency and stability of a measurement tool or research instrument in measuring a concept or construct (Abdillah, 2015). In this study, reliability testing was conducted using Composite Reliability and Cronbach's Alpha. A variable can be declared to meet composite reliability and Cronbach Alpha if it has a value > 0.7 . Table 7 presents the composite reliability and Cronbach alpha values of each variable in this study.

Table 7 presents the Composite Reliability and Cronbach's Alpha values for each research variable, which are used to assess the internal consistency and reliability of the measurement instruments. All variables demonstrate values exceeding the recommended threshold of 0.7, indicating high reliability and good internal consistency. The Composite Reliability values are 0.943 for Financial Literacy (X), 0.901 for Business Performance (Z), and 0.870 for Business Sustainability (Y), while Cronbach's Alpha values are 0.931 for Financial Literacy (X), 0.871 for Business Performance (Z), and 0.818 for Business Sustainability (Y). These results confirm that all constructions in this study are reliable and suitable for further analysis.

Multicollinearity Test

Multicollinearity can be assessed using the tolerance value and the Variance Inflation Factor (VIF). Multicollinearity is detected when the tolerance value is less than 0.1 or the VIF value exceeds 10. In this study, multicollinearity is considered absent if the tolerance is > 0.1 or the VIF is < 10 . Table 8 shows the VIF values for each variable. Based on table 8, the results of the Collinearity Statistics (VIF) test for detecting multicollinearity show the following: the VIF value for Financial Literacy on Business Performance is 1.000; the VIF value for Financial Literacy on Business Sustainability is 1.285; and the VIF value for Business Performance on Business Sustainability is 1.285. Since all variables have tolerance values > 0.1 or VIF values < 5 , it can be concluded that there is no violation of the multicollinearity assumption.

Inner Model Analysis

The inner model is used to test the influence between one latent variable and another. Inner model evaluation can be conducted through three types of analysis: R^2 (R-square), Goodness of Fit (GoF), path coefficients, and specific indirect effects.

Model Fit Test (Goodness of Fit)

Structural model evaluation is conducted to show the relationships among manifest and latent variables of the main predictor,

mediator, and outcome variables in a complex model. The model fit test consists of two evaluations: R Square (R^2) and Q Square (Q^2).

The R^2 value indicates the determination of exogenous variables on endogenous variables. The higher the R^2 value, the greater the level of determination. According to (Ghozali, 2015), R^2 values of 0.75, 0.50, and 0.25 can be interpreted as strong, moderate, and weak models, respectively. Table show the R^2 (coefficient of determination) values in this study.

Based on table 9, the R-Square value is used to determine the extent to which Financial Literacy influences Business Performance, which is shown by a value of 0.221 or 22.1%. This indicates a weak relationship. The influence of Financial Literacy and Business Performance on Business Sustainability is shown by an R-Square value of 0.469 or 46.9%, which indicates a moderate relationship.

The next test is the Q-Square test. The Q^2 value in structural model testing is assessed through Predictive Relevance (Q^2). The Q^2 value is used to evaluate how well the observed values generated by the model and its parameters can be predicted. A Q^2 value greater than 0 indicates that the model has predictive relevance, while a value less than 0 indicates that the model lacks predictive relevance.

Table 10 presents the results of the Q-Square (Q^2) predictive relevance test for the

endogenous variables in the model, namely Business Performance and Business Sustainability. The Q^2 value for Business Performance (Z) is 0.120, indicating that the model has adequate predictive relevance in explaining variations in business performance. Meanwhile, Business Sustainability (Y) shows a higher Q^2 value of 0.239, indicating a stronger predictive ability of the model in predicting sustainability outcomes.

Since both Q^2 values are greater than zero, it can be concluded that the structural model shows acceptable predictive relevance for both endogenous variables, with better predictive power observed for Business Sustainability.

Hypothesis Testing

Path Coefficient Testing

Path coefficients were tested using the bootstrapping procedure to examine the t-statistics or p-values (critical ratios), as well as the original sample values obtained through this process. A p-value < 0.05 indicates a significant direct effect between variables, while a p-value > 0.05 indicates no significant direct effect. In this study, the significance level used is a t-statistic of 1.96 (significance level = 5%). If the t-statistic > 1.96, the effect is considered statistically significant. Table 11 presents the path coefficient values from the analysis.

Based on table 11, the interpretations are as follows. The first hypothesis shows

that Financial Literacy has a positive and significant effect on Business Performance. The table indicates a t-statistic value of 8.708, an effect size of 0.471, and a p-value of 0.000. Since the t-statistics are greater than 1.96 and the p-value is less than 0.05, it can be concluded that Hypothesis 1 is accepted, indicating a positive and significant relationship between Financial Literacy and Business Performance.

The second hypothesis shows that Financial Literacy has a positive and significant effect on Business Sustainability. The table shows a t-statistic value of 3.536, an effect size of 0.201, and a p-value of 0.000. With the t-statistic > 1.96 and p-value < 0.05, it can be concluded that Hypothesis 2 is accepted, confirming a positive and significant relationship between Financial Literacy and Business Sustainability.

The third hypothesis indicates that Business Performance has a positive and significant effect on Business Sustainability. The table shows a t-statistic value of 12.719, an effect size of 0.567, and a p-value of 0.000. Since the t-statistic > 1.96 and the p-value < 0.05, Hypothesis 3 is accepted, indicating a positive and significant relationship between Business Performance and Business Sustainability.

Indirect Effect Testing

The next step is testing the indirect effect, which can be assessed through the specific indirect effect results. If the p-value < 0.05,

the effect is significant. This means that the mediating variable mediates the influence of an exogenous variable on an endogenous variable — in other words, the effect is indirect. If the p-value > 0.05, the effect is not significant, indicating that the mediating variable does not mediate the relationship, and the effect is direct (Juliandi, 2018). Table 12 presents the specific indirect effect values from the model.

Based on table 12, the interpretation is as follows. Hypothesis 4 indicates that Performance partially mediates the

relationship between Financial Literacy and Business Sustainability. The table shows a t-statistic value of 7.328 and a p-value of 0.000. Since the t-statistics are greater than 1.96 and the p-value is less than 0.05, Hypothesis 4 is accepted, indicating that Performance significantly mediates the relationship between Financial Literacy and Business Sustainability. This result suggests that Financial Literacy influences Business Sustainability both directly and indirectly through Performance, confirming the presence of partial mediation.

Table 2
Respondent Profile

Criteria	Frequency	Percentage
Age Distribution		
< 17 years	12	4 %
17-25 years	123	41 %
26-41 years	143	48 %
> 41 years	22	7 %
MSME Sector		
Food and Beverage	117	39 %
Handicrafts	39	13 %
Fashion	43	14 %
Tourism	6	2 %
Trade	32	11 %
Services	37	12 %
Transportation	6	2 %
Others	20	7 %
Highest Level of Education		
Junior High School or below	13	4 %
Senior High School	124	41 %
Diploma/Bachelor's Degree (D3/S1)	150	50 %
Master's Degree (S2)	10	4 %
Doctoral Degree (S3)	3	1 %

Source: Processed primary data, 2025

Table 3
 Outer Loading Values After Elimination

Variable	Indicator	Outer Loading	Description
Financial Literacy (X)	X.6	0,659	Valid
	X.7	0,732	Valid
	X.8	0,539	Valid
	X.9	0,867	Valid
	X.10	0,870	Valid
	X.11	0,877	Valid
	X.12	0,845	Valid
	X.13	0,803	Valid
	X.14	0,807	Valid
	X.15	0,796	Valid
Performance Usaha (Z)	X.16	0,675	Valid
	Z.1	0,786	Valid
	Z.2	0,797	Valid
	Z.3	0,730	Valid
	Z.4	0,653	Valid
	Z.5	0,820	Valid
	Z.6	0,772	Valid
Sustainability Usaha (Y)	Z.7	0,698	Valid
	Y.1	0,551	Valid
	Y.3	0,725	Valid
	Y.4	0,807	Valid
	Y.5	0,786	Valid
	Y.6	0,788	Valid
	Y.7	0,682	Valid

Source: Processed primary data, 2025

Tabel 4
 Value Average Variance Extracted

Variable	AVE (Average Variance Extracted)	Description
Financial Literacy (X)	0,603	Valid
Performance Usaha (Z)	0,567	Valid
Sustainability Usaha (Y)	0,531	Valid

Source: Processed primary data, 2025

Table 5
 Cross Loading

Variable	Financial Literacy (X)	Performance (Z)	Sustainability (Y)
X.6	0,659	0,322	0,288
X.7	0,732	0,342	0,326
X.8	0,539	0,297	0,331

Variable	Financial Literacy (X)	Performance (Z)	Sustainability (Y)
X.9	0,867	0,437	0,401
X.10	0,870	0,416	0,405
X.11	0,877	0,376	0,371
X.12	0,845	0,374	0,368
X.13	0,803	0,378	0,356
X.14	0,807	0,350	0,375
X.15	0,796	0,344	0,368
X.16	0,675	0,351	0,378
Y.1	0,189	0,456	0,551
Y.3	0,396	0,562	0,725
Y.4	0,405	0,494	0,807
Y.5	0,394	0,416	0,786
Y.6	0,396	0,448	0,788
Y.7	0,224	0,487	0,682
Z.1	0,416	0,786	0,475
Z.2	0,377	0,797	0,459
Z.3	0,390	0,730	0,611
Z.4	0,294	0,653	0,458
Z.5	0,368	0,820	0,519
Z.6	0,302	0,772	0,471
Z.7	0,309	0,698	0,459

Source: Processed primary data, 2025

Table 6
Heterotrait-Monotrait Ratio (HTMT)

Variable	Financial Literacy	Performance	Sustainability
Financial Literacy (X)		0.518	0.530
Performance (Z)			0.774
Sustainability (Y)			

Source: Processed primary data, 2025

Table 7
Composite Reliability

Variable	Composite Reliability	Cronbach Alpha	Description
Financial Literacy (X)	0,943	0,931	Reliabel
Performance (Z)	0,901	0,871	Reliabel
Sustainability (Y)	0,870	0,818	Reliabel

Source: Processed primary data, 2025

Table 8
Collinearity Statistics (VIF)

	Performance	Sustainability
Financial Literacy (X)	1,000	1,285
Performance (Z)		1,285
Sustainability (Y)		

Source: Processed primary data, 2025

Table 9
R-Square Values

Variable	R-Square
Performance (Z)	0,221
Sustainability (Y)	0,469

Source: Processed primary data, 2025

Table 10
Q-Square Values

Variable	Model	Q-Square
Performance (Z)	$Q^2 (=1-SSE/SSO)$	0,120
Sustainability (Y)	$Q^2 (=1-SSE/SSO)$	0,239

Source: Processed primary data, 2025

Table 11
Path Coefficient (Direct Effect)

		Original Sample	t-Statistics	P Values	Description
Financial Literacy (X) → Performance (Z)	H1	0,471	8,708	0,000	Positive Significant
Financial Literacy (X) → Sustainability (Y)	H2	0,201	3,536	0,000	Positive Significant
Performance UMKM (Z) → Sustainability (Y)	H3	0,567	12,719	0,000	Positive Significant

Source: Processed primary data, 2025

Table 12
Specific Indirect Effects

		Original Sample	t-Statistics	P Values	Description
Financial Literacy (X) → Performance (Z) → Sustainability (Y)	H4	0,267	7,328	0,000	Positive Significant

Source: Processed primary data, 2025

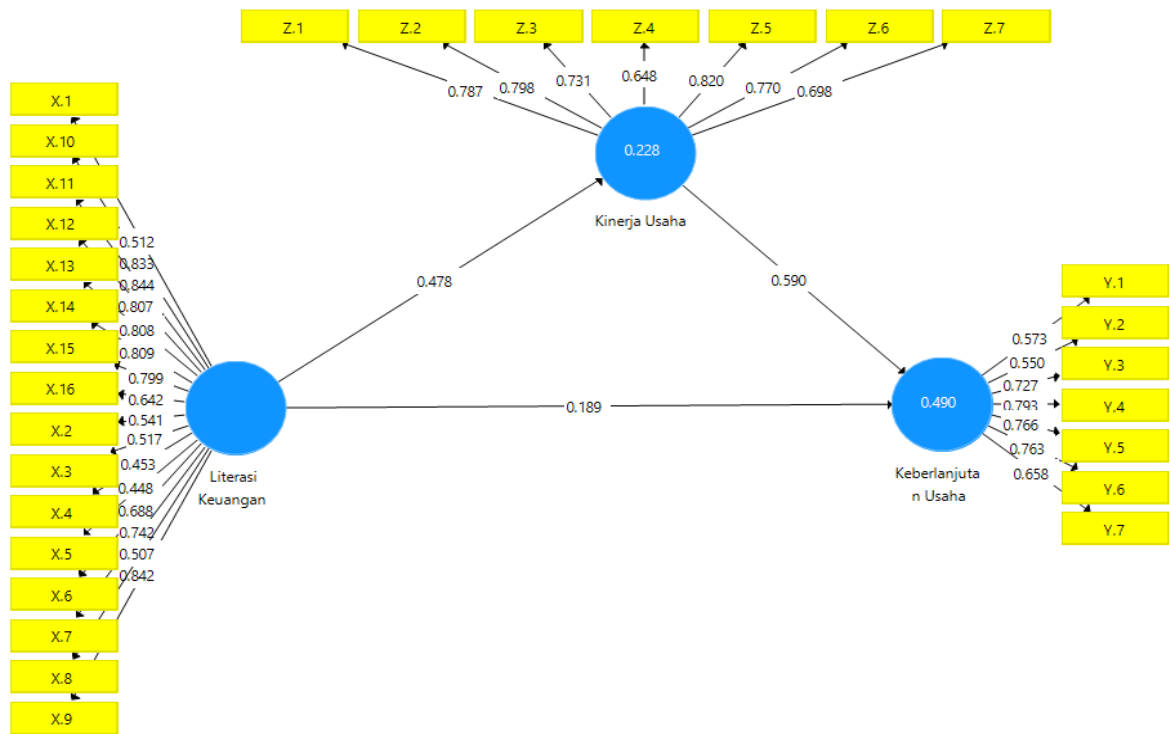


Figure 2. Outer Model Before Elimination

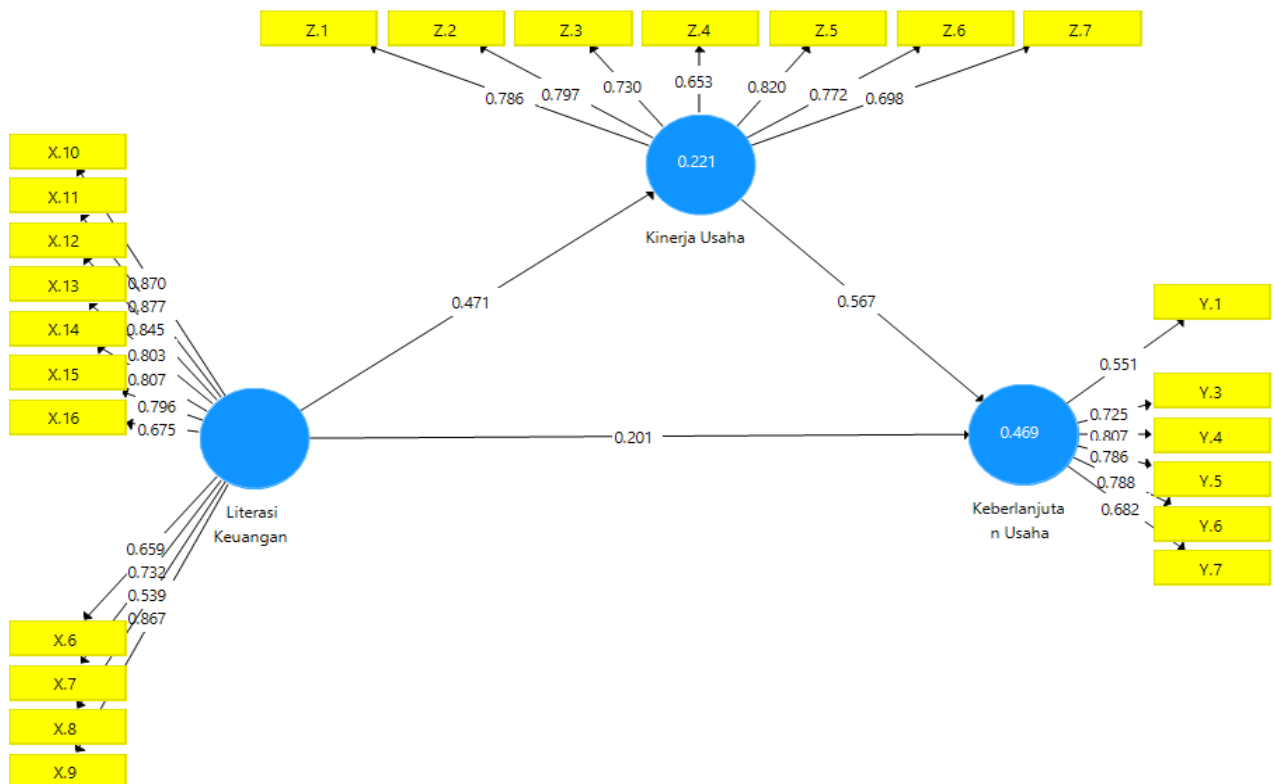


Figure 3. Outer Model After Elimination

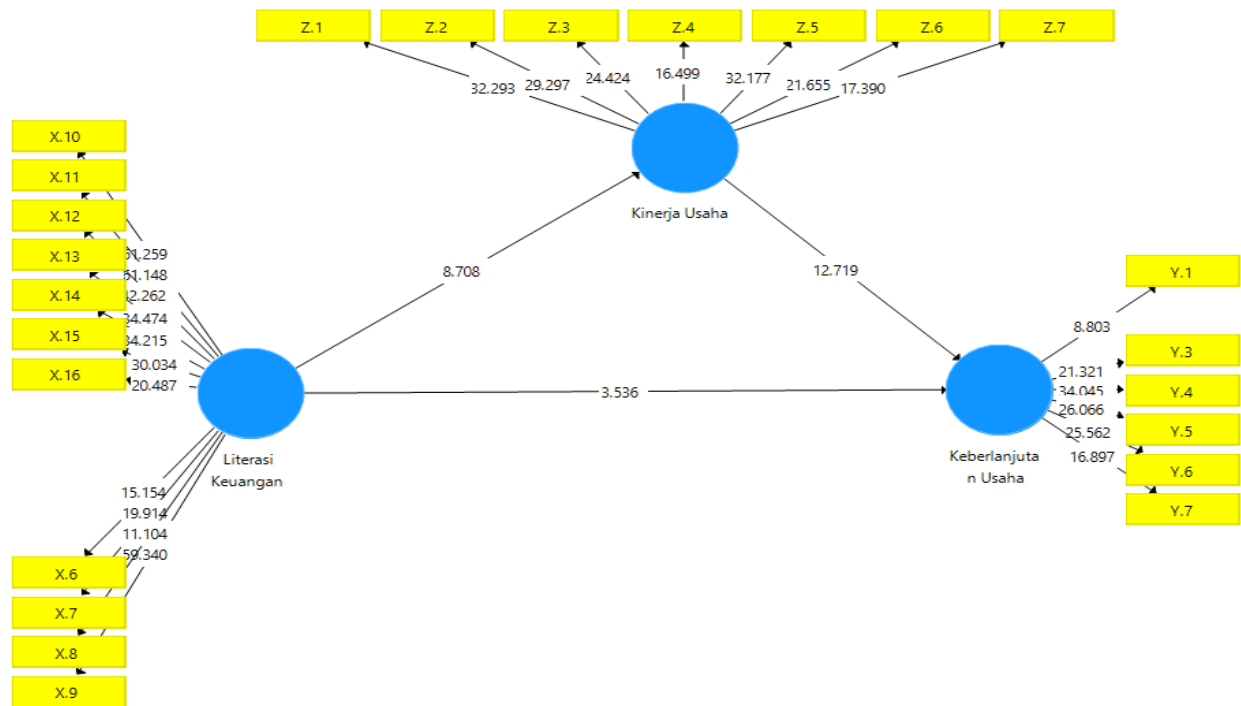


Figure 4. Inner Model

Discussion

The Effect of Financial Literacy on Business Performance

Financial literacy is a vital component for achieving positive financial outcomes and maintaining economic stability (Ashley B LeBaron-Black, Heather Kelley, 2025). It plays a critical role in economic growth and financial inclusion (R. Muthu Lakshmi, 2023). Financial literacy helps individuals manage finances, make informed decisions, and contributes to a country's economic development (Gudjonsson et al., 2022). Improved financial literacy encourages better financial decision-making, which positively impacts MSME performance

(Fatoki, 2021). It supports MSMEs in bookkeeping and effective budgeting—key aspects for sales growth, profit increase, and overall business performance (Iramani et al., 2018). When combined with financial technology and inclusion, financial literacy significantly enhances MSME performance (Gunawan et al., 2023).

From a theoretical perspective, the findings of this study can be explained using the Resource-Based View (RBV) theory. RBV posits that a firm's competitive advantage and performance are largely determined by its ability to acquire, develop, and utilize valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney,

1991). In this context, financial literacy can be considered an intangible strategic resource possessed by MSME owners. Financial knowledge, skills, and capabilities enable business actors to manage financial resources more effectively, optimize capital allocation, and mitigate financial risks. When MSMEs in Malang Regency/City possess higher levels of financial literacy, they are better equipped to leverage their internal resources to improve operational efficiency and business performance. This supports the RBV argument that superior internal capabilities such as financial competence serve as key drivers of firm performance and long-term competitiveness.

The path coefficient test shows a t-statistic of 8.708 (> 1.96), a coefficient of 0.471, and a p-value of 0.000 (< 0.05). This confirms that Financial Literacy significantly and positively affects Business Performance. These findings align with (Fatoki, 2021), who also found that increased financial literacy enhances financial decision-making and positively impacts MSME performance.

The Effect of Financial Literacy on Business Sustainability

Financial literacy enhances MSMEs' ability to make appropriate financing decisions, supporting business sustainability through risk mitigation and improved financial management (Indrawati et al., 2025). Additionally, when combined with technology infrastructure, financial literacy

positively affects MSME sustainability (Harnida, 2024).

From a theoretical standpoint, the findings of this study can be explained through the Resource-Based View (RBV) theory, which emphasizes that sustainable competitive advantage and long-term business continuity are driven by a firm's internal resources and capabilities (Barney, 1991). In this context, financial literacy represents an intangible and strategic resource that enables MSMEs to effectively manage financial assets, reduce uncertainty, and respond to environmental changes. Financial knowledge and financial management capabilities allow MSME owners to allocate resources efficiently, control financial risks, and design long-term strategies that support business sustainability. According to RBV, MSMEs that possess superior internal capabilities such as strong financial literacy are more likely to achieve sustained performance and long-term survival.

The research findings confirm that Financial Literacy has a positive and significant impact on MSME Business Sustainability in Malang. MSMEs with strong understanding of key financial concepts cash flow, planning, debt control, investment, and risk management are better positioned to ensure long-term continuity. In a dynamic and competitive market, financially literate MSMEs in Malang show adaptability and resource efficiency,

focusing not just on short-term profits but also on long-term strategies.

The path coefficient test shows a t-statistic of 3.536 (> 1.96), a coefficient of 0.201, and a p-value of 0.000 (< 0.05). This indicates a significant and positive influence of Financial Literacy on Business Sustainability. These results align with (Harnida, 2024), who concluded that financial literacy—especially when integrated with technology—supports sustainable MSME growth.

The Effect of Business Performance on Business Sustainability

Business performance is a strong determinant of business sustainability. Various studies show that improved performance driven by dynamic capabilities and sound financial behavior enhances long-term sustainability (Supramono et al., 2025). The speed of recovery after crises also plays a role, underlining the importance of adaptability. Market orientation and financial literacy further influence MSME performance and sustainability (Budiarto et al., 2023).

From a theoretical perspective, the relationship between business performance and business sustainability can be explained through the Resource-Based View (RBV) theory, which posits that firms achieve long-term sustainability by effectively leveraging internal resources and capabilities (Barney, 1991). Within this framework, business

performance reflects the firm's ability to utilize its tangible and intangible resources efficiently, including financial capital, human capital, organizational processes, and managerial capabilities. MSMEs that are able to transform these internal resources into superior performance outcomes are more likely to maintain competitiveness and achieve sustainable growth over time

This study found that Business Performance positively and significantly affects Business Sustainability of MSMEs in Malang. Strong performance, in terms of revenue growth, operational efficiency, product/service quality, and customer satisfaction, increases the chances for long-term survival and growth. High-performing MSMEs tend to be more stable, competitive, and innovative.

The path coefficient test shows a t-statistic of 12.719 (> 1.96), a coefficient of 0.567, and a p-value of 0.000 (< 0.05). This confirms that Business Performance significantly influences Business Sustainability. These findings are in line with Wisker and (Listyaningsih, 2024), who also concluded that MSME performance is a key predictor of business sustainability.

Effect of Financial Literacy on Business Sustainability Mediated by Business Performance

Financial literacy improves MSME performance, which in turn strengthens sustainability (Gunawan et al., 2023).

Several studies indicate that financial literacy enhances performance by promoting better financial management practices, which then support long-term sustainability (Iramani et al., 2018). When combined with financial inclusion and technology, financial literacy indirectly supports sustainability through performance improvement (Gunawan et al., 2023).

From a theoretical standpoint, the mediating role of Business Performance in the relationship between Financial Literacy and Business Sustainability can be explained through the Resource-Based View (RBV) theory. RBV argues that sustainable competitive advantage and long-term business continuity depend on a firm's ability to develop and utilize valuable intangible resources and capabilities (Barney, 1991). In this study, financial literacy represents a strategic intangible resource, while business performance reflects the firm's capability to effectively deploy that resource. Financial literacy alone does not automatically guarantee sustainability; rather, it must be translated into superior operational and financial performance to generate sustainable outcomes.

This study confirms that Business Performance partially mediates the relationship between Financial Literacy and Business Sustainability of MSMEs in Malang. Financially literate MSMEs tend to manage cash flow, budgeting, loans, and

strategic financial decisions more effectively, contributing to better performance such as operational efficiency, higher revenue, and customer satisfaction. Strong performance, in turn, is essential for achieving long-term business sustainability. The indirect effect test shows a t-statistic of 7.328 (> 1.96) and a p-value of 0.000 (< 0.05), indicating that Business Performance significantly mediates the relationship. These results align with (Zunairoh & Wijaya, 2024), who found that MSME performance acts as a mediator in the relationship between financial literacy and business sustainability.

CONCLUSION

Based on the research conducted using the Partial Least Squares (PLS) data analysis method, this study concludes that Financial Literacy has a positive and significant effect on Business Performance, indicating that higher levels of financial understanding contribute to improved operational outcomes. Financial Literacy also shows a positive and significant influence on Business Sustainability, highlighting its important role in supporting long-term business continuity. Furthermore, Business Performance is found to have a positive and significant effect on Business Sustainability, suggesting that well-performing businesses are more capable of sustaining their operations over time. In addition, the findings confirm that Business Performance

mediates the relationship between Financial Literacy and Business Sustainability, meaning that Financial Literacy enhances Business Sustainability both directly and indirectly through improved Business Performance.

RESEARCH IMPLICATION

The findings of this study provide important managerial implications for both MSMEs and local governments in Malang Regency/City. For MSME owners, the results emphasize the importance of financial literacy as a strategic capability that enhances business performance and supports long-term sustainability through better financial decision-making, efficient resource management, and improved operational outcomes. MSMEs are encouraged to strengthen financial management practices such as cash flow

control, budgeting, debt management, and financial planning to translate financial knowledge into superior performance. For local governments, these findings suggest the need to prioritize financial literacy development in MSME support programs by providing targeted training, mentoring, and practical financial management assistance. Such initiatives can help improve MSME performance, strengthen business sustainability, and ultimately contribute to sustainable regional economic growth and resilience.

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