

FINANCIAL LITERACY AND BUSINESS SUSTAINABILITY AMONG MSMEs IN DENPASAR CITY: THE MEDIATING ROLE OF ACCESS TO FINANCIAL SERVICES

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Abstract:

Purpose: This study examines the effect of financial literacy on business sustainability among MSMEs in Denpasar City, with access to financial services serving as a mediating variable.

Methodology: The study uses an exploratory quantitative approach. Primary data were collected through questionnaires from 300 MSME owners using a five-point Likert scale and analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0.

Findings: Financial literacy has a positive and significant effect on both business sustainability and access to financial services. Access to financial services also has a positive and significant effect on business sustainability and mediates the relationship between financial literacy and business sustainability.

Implication: Strengthening MSME owners' financial literacy and expanding practical access to formal financial services can support stronger and more sustainable long-term business development in Denpasar City.

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) can be considered a key component of the economic structure within the community, as they play a strategic role in generating income through job creation (Sofyan, 2017; Leatemia, 2023; Reza et al., 2024). Beyond contributing to the economy through employment, MSMEs demonstrate resilience in the face of economic challenges (Priyadi & Desiana, 2017). Furthermore, the MSME sector exhibits greater flexibility in responding to market changes, owing to its relatively low investment requirements and high labor intensity (Samsiyah et al., 2023). Given the sector's significant contribution to the economy and its inherent flexibility, further in-depth study is warranted to foster the sustainable capacity building of MSMEs.

Denpasar City is an area with a notably large number of MSMEs. Data from the Denpasar City Government's official portal indicates that, as of 2025, the total number of registered MSMEs stands at 33,036 business units. Figure 1 illustrates the number and fluctuations in MSME growth from 2019 to 2025. The number of MSMEs in Denpasar City fluctuated during this period; the count stood at 32,026 units in 2019 before declining to 29,549 units in 2021. Subsequently, the number of MSMEs increased from 2022 through 2025, reaching a total of 33,036 business units.



Fig 1. Growth in the number of MSMEs in Denpasar City

Fluctuations in the number of MSMEs in a given region can be influenced by various aspects, including both internal and external factors. Such fluctuations may reflect unstable business continuity. Business continuity within the MSME sector is crucial for ensuring the smooth functioning of the economy through job creation. MSME business continuity can be influenced by factors such as individual characteristics, business strategies, and the external environment (Dwiastanti & Mustapa, 2020), as well as digitalization (Destiari, 2025), financial literacy (Masdiantini et al., 2024), and access to financial services (Yunita et al., 2023).

Proper business financial management is a key factor in supporting business sustainability. One aspect of financial management is the financial literacy possessed by managers and business owners in the MSME sector. Research conducted by Dewi and Candraningrat (2022), Destiari (2025), and Idris et al. (2023) concludes that financial literacy has a positive and significant influence on MSME business sustainability. Another factor supporting MSME business sustainability is access to financial services. Hamzah (2025) as well as Anggara and Purnamawati (2023) explain that access to financial services has a direct, positive, and significant impact on MSME business sustainability. Access to financial services not only exerts a direct influence but can also mediate the impact of financial literacy on business sustainability. Yunita et al. (2023) conclude that access to financial services mediates the influence of financial literacy on business sustainability.

Previous studies have reached the opposite conclusion. Idawati and Pratama (2023) concluded that financial literacy has a positive and significant impact on MSME performance but does not influence business sustainability. Similarly, Ramadani et al. (2025) demonstrated that access to financial services does not mediate the effect of financial literacy on business sustainability. These divergent findings indicate that the roles of financial literacy and access to financial services regarding MSME sustainability remain inconclusive. This serves as the basis for the present study to further examine the direct and indirect roles of financial literacy and access to financial services in the sustainability of MSME businesses.

METHODS

Population and Sample

This study employs a quantitative approach utilizing primary data. It was conducted in Denpasar City, which has a total population of 33,036 MSMEs. The study utilized a sample size of 300. The sample size was determined based on considerations of adequacy to ensure the collection of comprehensive data supporting the study's analysis. Purposive sampling was employed as the sampling technique. Purposive sampling allows researchers to select respondents based on specific characteristics, thereby yielding data that is more relevant and specific (Subhaktiyasa, 2024). The sample characteristics for this study consist of MSMEs that have been in operation for three years or longer.

Operational Definition

An operational definition can be defined as the translation of research variables into a more measurable form, enabling their measurement during the study (Ridha, 2017). This study involves three variables, the operational definitions of which are presented in Table 1.

Table 1. Operational Definitions of Research Variables

No	Variable		Questionnaire Statement
1	Financial Literacy (X1)	(OECD, 2016; Tangi et al, 2025)	1) Understanding the requirements set by financial institutions for business financing. 2) Understanding the importance of savings and investment 3) Ability to use financial services 4) Understanding the importance of budget preparation in business financial planning. 5) Understanding of how to prepare business financial statements 6) Understanding the amount of income and expenses incurred in business activities.

2	Access to Financial Services (M1) (OECD, 2016; Ristanti & Sari, 2026)	1) Easy access to financial services, both in-person and digitally
		2) The fees charged are commensurate with the business's capacity
3	Business Sustainability (Y) (Wickham, 2016; Tangi et al 2025)	3) Financial services provide features that support businesses
		4) Ease of obtaining information on financial products
		1) Consistent asset growth
		2) Operating profit increases over time
3	Business Sustainability (Y) (Wickham, 2016; Tangi et al 2025)	3) Production volume has consistently increased
		4) The number of customers is increasing consistently
		5) The workforce has increased alongside business growth
		6) The business is located in a strategic position

Data Analysis Technique

This study employs a data analysis method based on the Partial Least Squares (PLS) structural equation modeling approach, utilizing a 5-point Likert scale—ranging from (1) strongly disagree to (5) strongly agree—to measure the variables. SmartPLS 4.0 software is used to obtain comprehensive results by analyzing the relationships between the variables under study.

RESULTS AND DISCUSSION

Measurement Model (Outer Model)

Testing of the measurement model (outer model) in this study was conducted to assess the validity and reliability of the research instruments. Convergent validity testing involved examining outer loading values—expected to exceed 0.70—and Average Variance Extracted (AVE) values greater than 0.50. Construct reliability was assessed using Cronbach's Alpha (expected to be above 0.60) and Composite Reliability (expected to exceed 0.70) (Hair et al., 2022).

Table 2. Outer Loading Values

Variable	Indicator	Outer Loading
Financial Literacy	X1.1	0.795
	X1.2	0.845
	X1.3	0.822
	X1.4	0.734
	X1.5	0.735
	X1.6	0.768
Access to Financial Services	M1.1	0.907
	M1.2	0.781
	M1.3	0.918
	M1.4	0.920
Business Sustainability	Y1.1	0.728
	Y1.2	0.851
	Y1.3	0.720
	Y1.4	0.812
	Y1.5	0.894
	Y1.6	0.777

Source: Processed Data (2026)

Based on the outer model test results, all indicators for each variable exhibited outer loading values above 0.70. This indicates that each indicator possesses adequate capability to reflect the construct being measured; consequently, all indicators in this study are deemed to have met the requirements for convergent validity.

Table 3. Average Variance Extracted (AVE) Values for Each Variable

Variable	Average Variance Extracted (AVE)
Financial Literacy	0.781
Access to Financial Services	0.575
Business Sustainability	0.523

Source: Processed Data (2026)

Table 3 presents the results of the Average Extracted Variance (AVE) test for all research variables, showing values above 0.50. This indicates that each construct is capable of explaining its indicators; thus, all constructs have met the criteria for convergent validity.

Table 4. Cronbach's Alpha and Composite Reliability Values

Variabel	Cronbach's Alpha	Composite Reliability
Financial Literacy	0.814	0.866
Access to Financial Services	0.906	0.934
Business Sustainability	0.846	0.887

Source: Data Processed (2026)

Based on Table 4, each research variable has Cronbach's Alpha and Composite Reliability values above 0.70. These results indicate that all constructs used in this study meet the reliability criteria. The indicators for each construct demonstrate good internal consistency and are capable of yielding consistent measurement levels.

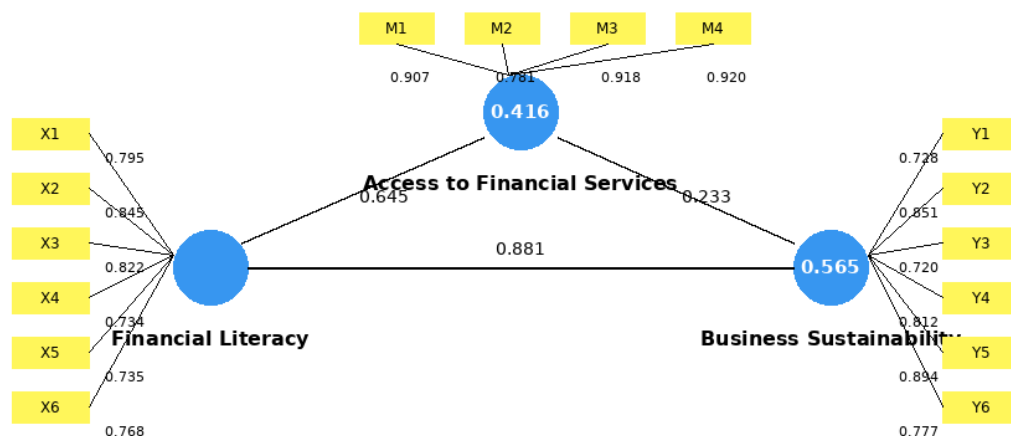


Fig 3. Results of The PLS Algorithm Test Using SmartPLS 4.0

Structural Model Testing (Inner Model)

The R-squared (R²) test is used to evaluate the ability of exogenous variables to explain changes in endogenous variables within the structural model. The R² value reflects the proportion of variance in the endogenous construct that can be explained by its predictor constructs. Hair et al. (2022) explain that an R² value of 0.75 is categorized as substantial, 0.50 as moderate, and 0.25 as weak. The results of the R-squared (R²) test in this study are presented in the following table.

Table 5. R-Square and Adjusted R-Square Values

Variable	R-Square	R-Square Adjusted
Access to Financial Services	0.416	0.414
Business Sustainability	0.565	0.562

Source: Data Processed (2026)

Based on the R-squared (R^2) results, the business sustainability construct obtained an R^2 value of 0.565, indicating that 56.5% of the variation in business sustainability is explained by financial literacy and access to financial services, while the remaining 43.5% is explained by factors outside the research model. The access to financial services construct obtained an R^2 value of 0.416, showing that 41.6% of the variation in access to financial services is explained by financial literacy, with the remaining 58.4% influenced by factors not included in the research model. The R^2 values in this study indicate that the model's explanatory power is at a moderate level.

Hypothesis Testing

Hypothesis testing in this study was conducted through statistical analysis using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method with the aid of SmartPLS software. The testing involved evaluating path coefficients and statistical test values to determine the direction, magnitude, and significance of the relationships between the variables under study.

Table 6. Direct and Indirect Effects on Each Variable

Hypothesis	Original Sample	t-Statistic	P-Values
Financial Literacy (X1) > Access to Financial Service (M1)	0.645	15.800	0.000
Financial Literacy (X1) > Business Sustainability (Y)	0.881	16.349	0.000
Access to Financial Service (M1) > Business Sustainability (Y)	0.233	3.855	0.000
Financial Literacy (X1) > Access to Financial Service (M1) > Business Sustainability (Y)	0.151	3.559	0.000

Source: Data Processed (2026)

Based on the bootstrapping test results, the t-statistic and p-value were obtained, as shown in Table 6. These results serve as the basis for discussing the significance of the relationships between variables in the research model, which are outlined as follows:

The Influence of Financial Literacy on Business Sustainability (H1)

The test results in Table 6 show that the relationship between financial literacy and business sustainability yields a t-statistic of 16.349—which exceeds the t-table value—and a p-value of 0.000, which is less than 0.05. These results indicate that financial literacy has a positive and significant effect on business sustainability. Therefore, the first hypothesis (H1) is accepted

The Influence of Financial Literacy on Access to Financial Services (H2)

Table 6 presents the results of the test regarding the relationship between financial literacy and access to financial services; the t-statistic value is 15.800—exceeding the t-table value—and the p-value is 0.000—which is less than 0.05. These values indicate that financial literacy has a positive and significant influence on access to financial services; thus, it can be concluded that the second hypothesis (H2) is accepted.

The Influence of Access to Financial Services on Business Sustainability (H3)

The hypothesis testing results presented in Table 6 indicate that the relationship between access to financial services and business sustainability yields a t-statistic of 3.855—exceeding the t-table value—and a p-value of 0.000,

which is below the 0.05 threshold. These values demonstrate that access to financial services has a positive and significant effect on business sustainability; thus, it is concluded that the third hypothesis (H3) is accepted.

The Role of Access to Financial Services in Mediating the Effect of Financial Literacy on Business Sustainability (H4)

Based on the indirect effect test results shown in Table 6, access to financial services was proven to positively and significantly mediate the effect of financial literacy on business sustainability. This is evidenced by a t-statistic of 3.559 and a p-value of 0.000 (less than 0.05), indicating that the indirect effect is statistically significant. The test results demonstrate that access to financial services mediates the impact of financial literacy on business sustainability; therefore, the fourth hypothesis (H4) is accepted.

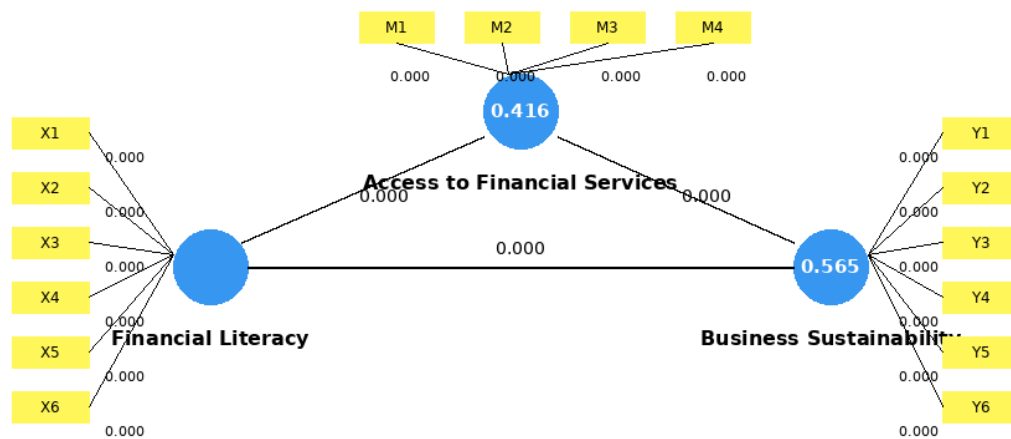


Fig 4. Bootstrapping Test Results

CONCLUSION

The research results indicate that financial literacy and access to financial services have a positive and significant impact on business sustainability within the MSME sector in Denpasar City. The findings further conclude that access to financial services not only plays a direct role in business sustainability but also acts as a mediator in the relationship between financial literacy and business sustainability. These findings demonstrate that enhancing financial literacy and access to financial services can exert both direct and indirect influences on the sustainability of MSMEs in Denpasar City.

From a theoretical perspective, this study contributes to the literature on the MSME sector by highlighting that the financial literacy of business owners and operators, combined with access to quality formal financial services, constitutes a fundamental factor in maintaining business viability. Practically, the study offers recommendations to MSME operators, financial institutions, and the government to promote greater understanding and facilitate access to financial products and services tailored to the needs of MSMEs in Denpasar City.

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