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The Effect of Financial Management Knowledge and Business Digitalization on MSME Sustainability in Pangkep Regency

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Abstract

The sustainability of micro, small, and medium enterprises (MSMEs) is increasingly shaped by the interaction between internal financial capability and digital business adaptation. This study examines the effect of financial management knowledge and business digitalization on MSME sustainability in Pangkep Regency, South Sulawesi, a maritime-based local economy where small enterprises face market uncertainty, uneven digital infrastructure, and limited managerial resources. A quantitative cross-sectional survey was conducted with 120 active MSME owners selected through purposive sampling. The respondents were business owners or principal managers whose enterprises had operated for at least two years. Data were collected using structured questionnaires measured on a five-point Likert scale and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that financial management knowledge has a positive and significant effect on MSME sustainability (β = 0.318; t = 3.124; p = 0.002), while business digitalization has a stronger positive and significant effect (β = 0.497; t = 6.841; p < 0.001). Together, both variables explain 58.7% of the variance in MSME sustainability (R^2 = 0.587). These findings suggest that sustainable MSME development is not only determined by the owner's ability to budget, record transactions, and manage cash flow, but also by the enterprise's capability to use digital channels for marketing, transactions, and customer interaction. The study contributes to MSME sustainability literature by positioning financial management knowledge and digitalization as complementary capability-based resources for strengthening local business resilience.

Keywords: Financial Management Knowledge; Business Digitalization; MSME Sustainability; Pangkep Regency; PLS-SEM.

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INTRODUCTION

Micro, small, and medium enterprises (MSMEs) remain a strategic pillar of Indonesia's economic structure because they absorb a large share of labor, support household income, and contribute substantially to national output. Official Indonesian fiscal communication reported that MSMEs number approximately 64.2 million units, contribute 61.07% to gross domestic product, absorb around 117 million workers, and account for 60.4% of national investment. This macroeconomic position makes MSME sustainability more than a firm-level managerial issue; it is also a regional development concern, particularly in areas where local livelihoods depend on small trade, fisheries, culinary businesses, and household-based production.

Despite this strategic role, many MSMEs continue to face persistent managerial and technological constraints. Small enterprises often operate with limited working capital, incomplete financial records, weak separation between personal and business funds, and informal decision-making routines. These limitations reduce the owner's ability to monitor cash flow, calculate business margins, plan stock purchases, and evaluate whether the enterprise is growing or only surviving. Financial management knowledge therefore becomes a basic yet critical capability for business continuity because it supports liquidity control, cost discipline, and more rational investment decisions.

At the same time, business digitalization has become a major pathway through which MSMEs expand markets and improve operational responsiveness. The adoption of social media marketing, marketplace channels, digital payment systems, online customer interaction, and simple management applications can reduce geographic barriers and strengthen customer reach. This issue is particularly relevant for Pangkep Regency, South Sulawesi, whose economic landscape is influenced by maritime, coastal, and island-based characteristics. For MSMEs in such settings, digital tools are not merely promotional instruments but can also function as mechanisms for overcoming physical distance, payment frictions, and information asymmetry.

Recent literature supports the argument that digital transformation strengthens SME resilience during crisis conditions. Khurana et al. (2022) conceptualize resilience as a higher-order dynamic capability that emerges when SMEs use digital technologies to respond to disruption. Hokmabadi et al. (2024), through a systematic review, further show that digital transformation and marketing capabilities are central to small business resilience. In the Indonesian context, Daud et al. (2022) found that digital marketing, digital finance, and digital payment have positive and significant effects on SME financial performance. However, empirical studies that jointly examine financial management knowledge and business digitalization in a maritime local MSME context

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remain limited.

This study addresses that gap by testing the effect of financial management knowledge and business digitalization on MSME sustainability in Pangkep Regency. The study asks whether financial management knowledge significantly affects MSME sustainability, whether business digitalization significantly affects MSME sustainability, and whether both variables collectively explain sustainability outcomes. By combining financial capability and digital capability in one empirical model, this article offers a more integrated explanation of MSME sustainability at the local level.

THEORETICAL FRAMEWORK

The theoretical logic of this study is grounded in capability-based reasoning. In small enterprises, competitive advantage rarely emerges from large-scale resources; it is more often built from the owner's ability to combine limited resources, learn from market signals, and reconfigure business practices when the environment changes. Digital transformation research in SMEs shows that adaptability, digital awareness, strategic roadmapping, and continuous improvement are critical enablers of sustainable competitive advantage (Kahveci, 2025). This capability-based view is suitable for MSMEs because their sustainability depends on how owners translate knowledge and technology into practical routines.

Financial management knowledge refers to the owner's understanding of how to plan, record, monitor, and evaluate business finances. In MSMEs, this knowledge includes budgeting, cash-flow projection, separation of personal and business funds, daily transaction recording, and the use of simple financial statements for decision-making. Hilmawati and Kusumaningtias (2021) show that financial literacy and financial inclusion are associated with MSME performance and sustainability. Kurniasari et al. (2025) also connect financial literacy, financial technology adoption, access to finance, SME performance, and business sustainability. These findings indicate that financial knowledge is not only cognitive knowledge but also a managerial resource that enables business owners to act more strategically.

Business digitalization refers to the transformation of conventional business activities into digitally supported processes, including marketing, sales, payment, customer service, and internal administration. For MSMEs, digitalization may involve the use of social media, marketplaces, QR-based payments, e-ledgers, and simple mobile applications. In Indonesia, digital payments have become increasingly relevant because QRIS reached 57 million users and 39.3 million merchants in the first semester of 2025, with 93.16% of those merchants being MSMEs. This expansion

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indicates that digital payment infrastructure is becoming embedded in small business transactions, making digital capability increasingly important for MSME competitiveness.

MSME sustainability in this study is understood as the ability of an enterprise to maintain and develop its business activities over time. It includes sales growth, asset accumulation, customer retention, operational continuity during crisis or declining demand, and innovation in products or services. Agarwal et al. (2023) emphasize resilience-building as a key condition for MSME sustainability after the COVID-19 outbreak. In this sense, sustainability is not a static outcome; it is a dynamic condition produced by financial discipline, market adaptation, technological adoption, and continuous learning.

Based on the theoretical arguments above, the following hypotheses are proposed:

H1: Financial management knowledge has a positive and significant effect on MSME sustainability in Pangkep Regency.

H2: Business digitalization has a positive and significant effect on MSME sustainability in Pangkep Regency.

H3: Financial management knowledge and business digitalization simultaneously explain MSME sustainability in Pangkep Regency.

METHOD

This research used a quantitative approach with a cross-sectional survey design. The population consisted of active MSMEs in Pangkep Regency. The sample comprised 120 MSME owners or principal managers selected using purposive sampling. The inclusion criteria were that the enterprise had operated for at least two years, the respondent was directly involved in business decision-making, and the enterprise was located within the study area. This design was selected because the study aimed to test the structural influence of two managerial capability variables on MSME sustainability at one point in time.

Primary data were collected through structured questionnaires. Each construct was measured using a five-point Likert scale ranging from strongly disagree to strongly agree. Financial management knowledge was operationalized through budgeting, cash-flow projection, separation of personal and business funds, daily recording, and simple financial evaluation. Business digitalization was operationalized through the use of digital applications, social media marketing, marketplace participation, non-cash payment acceptance, and online customer interaction. MSME sustainability was operationalized through sales growth, asset growth, customer retention, operational continuity, and product or service innovation.

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Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The analysis consisted of the measurement model evaluation, model fit evaluation, and structural model testing. Convergent validity was assessed using outer loading and Average Variance Extracted (AVE), with AVE values above 0.50 indicating acceptable convergent validity. Reliability was assessed through Cronbach's Alpha and Composite Reliability, with values above 0.70 considered acceptable. The structural model was evaluated using coefficient of determination (R^2) and bootstrapping with 5,000 resamples. The acceptance criterion for hypothesis testing was t-statistics greater than 1.96 and p-values below 0.05.

Table 1. Measurement indicators of the research variables

Variable	Indicators	Measurement Basis
Financial Management Knowledge (X1)	Ability to prepare revenue and expenditure budgets; short-term cash-flow projection; separation of personal and business funds; daily transaction recording; evaluation of simple financial reports.	Adapted from financial literacy and MSME sustainability literature: Hilmawati & Kusumaningtias (2021); Kurniasari et al. (2025).
Business Digitalization (X2)	Use of digital applications for stock and finance; active social media marketing; marketplace participation; acceptance of non-cash payments; routine online customer interaction.	Adapted from digital marketing, digital finance, digital payment, and SME transformation literature: Daud et al. (2022); Kurniawati et al. (2021); Kahveci (2025).
MSME Sustainability (Y)	Consistent sales growth; asset growth; increase in repeat customers; operational continuity during crisis or declining demand; product or service innovation.	Adapted from MSME resilience and sustainability literature: Khurana et al. (2022); Agarwal et al. (2023); Hokmabadi et al. (2024).

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Source: Research instrument adapted from verified literature, processed by the authors (2025).

CONCEPTUAL MODEL

The conceptual model positions financial management knowledge and business digitalization as exogenous constructs that influence MSME sustainability. Adaptive capability is reflected in the ability of MSME owners to convert financial knowledge and digital practices into improved business continuity, customer reach, and innovation. The structural model is presented in Figure 1.

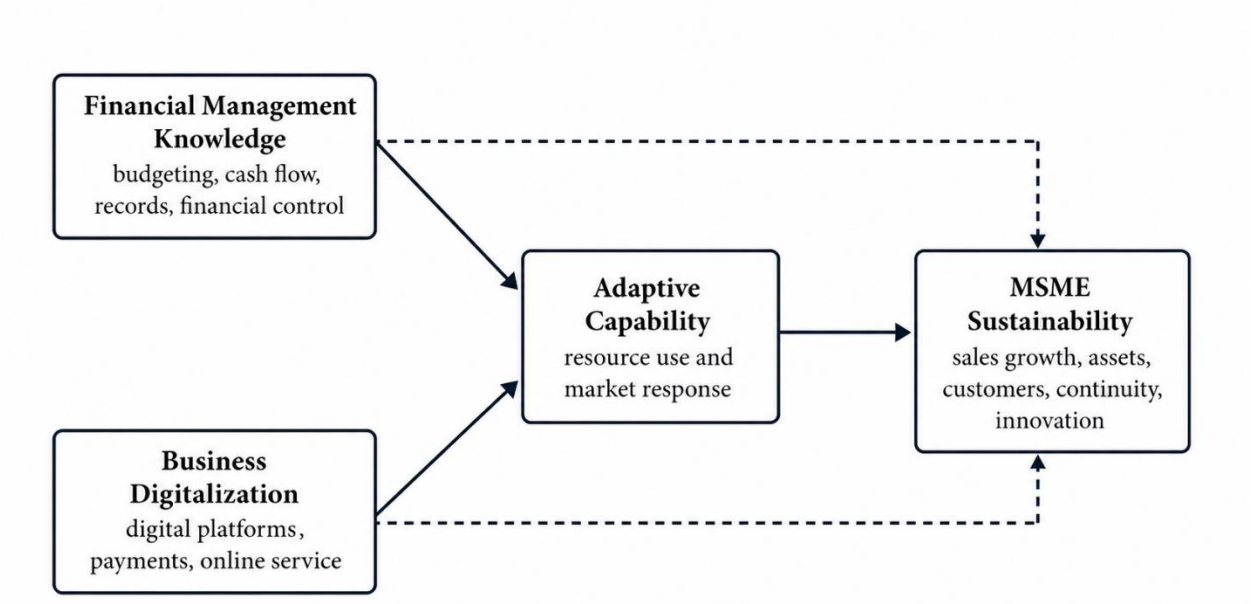


Figure 1. Conceptual model of the study

RESULTS

All 120 questionnaires were returned and considered valid for analysis. The respondent profile shows that the sample was dominated by female business owners, with the largest age group ranging from 31 to 45 years. Most respondents had completed senior high school or vocational education, and the largest business sector was trade and culinary activity. These characteristics indicate that the sample reflects the common structure of local MSMEs, where household-based and small-scale service or trading activities are dominant.

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Table 2. Respondent profile (n = 120)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Female	74	61.7
	Male	46	38.3
Age	≤ 30 years	22	18.3
	31–45 years	57	47.5
	> 45 years	41	34.2
Education	Elementary/Junior High School	19	15.8
	Senior High/Vocational School	58	48.3
	Diploma/Bachelor	43	35.8
Business Sector	Trade and Culinary	74	61.7
	Marine and Fisheries	26	21.7
	Crafts and Others	20	16.7
Business Age	2–5 years	43	35.8
	6–10 years	48	40.0
	> 10 years	29	24.2

Source: Primary data processed by the authors (2025).

The measurement model was assessed through convergent validity and reliability. The AVE values of all constructs exceeded 0.50, indicating that each latent variable captured sufficient variance from its indicators. Financial management knowledge had an AVE of 0.741, business digitalization had an AVE of 0.718, and MSME sustainability had an AVE of 0.703. These results indicate that the measurement model satisfies the convergent validity criterion.

Table 3. Convergent validity results

Variable	AVE	Interpretation
Financial Management Knowledge (X1)	0.741	Valid
Business Digitalization (X2)	0.718	Valid

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Variable	AVE	Interpretation
MSME Sustainability (Y)	0.703	Valid

Source: SmartPLS output processed by the authors (2025).

Reliability testing shows that all constructs exceeded the minimum threshold of 0.70 for Cronbach's Alpha and Composite Reliability. This result confirms that the indicators used in the model were internally consistent and suitable for further structural analysis.

Table 4. Reliability test results

Variable	Cronbach's Alpha	Composite Reliability	Interpretation
Financial Management Knowledge (X1)	0.908	0.916	Reliable
Business Digitalization (X2)	0.924	0.931	Reliable
MSME Sustainability (Y)	0.889	0.897	Reliable

Source: SmartPLS output processed by the authors (2025).

The model fit indicators also support the adequacy of the model. The Standardized Root Mean Square Residual (SRMR) value was 0.058, below the recommended maximum of 0.08. The Normed Fit Index (NFI) value was 0.917, exceeding the recommended threshold of 0.90. These results indicate that the model has an acceptable level of fit for hypothesis testing.

Table 5. Model fit results

Indicator	Threshold	Result	Interpretation
SRMR	< 0.08	0.058	Fit
NFI	> 0.90	0.917	Fit

Source: SmartPLS output processed by the authors (2025).

The coefficient of determination shows that financial management knowledge and business digitalization jointly explain 58.7% of the variance in MSME sustainability. The adjusted R^2 value of 0.580 indicates that the explanatory power of the model remains stable after

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adjustment. The remaining 41.3% of the variance may be explained by other factors such as access to capital, entrepreneurial orientation, market competition, supply-chain conditions, institutional support, and infrastructure quality.

Table 6. Coefficient of determination

Endogenous Variable	R^2	Adjusted R^2
MSME Sustainability (Y)	0.587	0.580

Source: SmartPLS output processed by the authors (2025).

Hypothesis testing was conducted through bootstrapping with 5,000 resamples. The results show that financial management knowledge has a positive and significant effect on MSME sustainability ($\beta = 0.318$; $t = 3.124$; $p = 0.002$). Business digitalization also has a positive and significant effect on MSME sustainability ($\beta = 0.497$; $t = 6.841$; $p < 0.001$). Thus, both H1 and H2 are supported. Because the R^2 value is 0.587, H3 is also supported at the model level, indicating that both predictors jointly explain a substantial proportion of sustainability variance.

Table 7. Hypothesis testing results

Path	Path Coefficient (β)	t-statistics	p-values	Decision
Financial Management Knowledge (X1) → MSME Sustainability (Y)	0.318	3.124	0.002	H1 supported
Business Digitalization (X2) → MSME Sustainability (Y)	0.497	6.841	< 0.001	H2 supported

Source: SmartPLS output processed by the authors (2025).

DISCUSSION

The first finding confirms that financial management knowledge significantly improves MSME sustainability. This means that MSME owners who understand budgeting, cash-flow

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monitoring, transaction recording, and financial evaluation are more capable of maintaining operational continuity. In practical terms, financial knowledge enables owners to distinguish business cash from household spending, estimate short-term liquidity needs, identify unproductive costs, and decide whether sales growth is accompanied by healthy margins. This finding is consistent with Hilmawati and Kusumaningtias (2021), who argue that financial literacy supports MSME performance and sustainability. It is also aligned with Kurniasari et al. (2025), who connect financial literacy and financial technology adoption with SME performance and sustainability.

The second finding shows that business digitalization has a stronger effect than financial management knowledge. The path coefficient for business digitalization (β = 0.497) is higher than that for financial management knowledge (β = 0.318), indicating that digital adaptation is a dominant predictor in the research model. This result can be interpreted through the changing nature of small business competition. MSMEs are no longer competing only through physical location or local customer networks; they are also competing through visibility in digital channels, speed of response, ease of payment, and the ability to maintain customer relationships online. Digital marketing, marketplace participation, and non-cash payment adoption expand the operational space of MSMEs and reduce dependence on conventional face-to-face transactions. The result is consistent with Daud et al. (2022), who found that digital marketing, digital finance, and digital payment positively influence the financial performance of Indonesian SMEs. It also strengthens the argument of Kurniawati et al. (2021) that digital transformation became a key adaptation strategy for Indonesian MSMEs during the pandemic. In Pangkep Regency, this effect may be especially important because coastal and island-based geographic characteristics can limit physical market access. Digital tools help MSMEs communicate with customers, display products, receive orders, and process payment without relying exclusively on direct physical interaction.

The joint explanatory power of the model suggests that MSME sustainability is best understood as the product of complementary capabilities. Financial management knowledge helps business owners maintain internal control, while digitalization helps them connect to external markets and transaction systems. One capability without the other may produce partial benefits. A digitally active MSME without financial discipline may generate sales but fail to maintain liquidity or profitability. Conversely, a financially disciplined MSME without digital adoption may survive locally but remain constrained by market reach. The policy implication is that MSME empowerment programs should avoid separating financial literacy training from digital acceleration programs. The two should be integrated into a single capacity-building

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framework.

CONCLUSION

This study examined the effect of financial management knowledge and business digitalization on MSME sustainability in Pangkep Regency. The findings show that financial management knowledge has a positive and significant effect on MSME sustainability. Owners who understand budgeting, cash-flow projection, transaction recording, financial separation, and simple financial evaluation tend to have stronger business continuity. Business digitalization also has a positive and significant effect, with a larger coefficient than financial management knowledge. This indicates that the ability to use digital marketing, marketplaces, digital payments, and online customer interaction is a crucial driver of sustainability in contemporary MSME development.

The two variables jointly explain 58.7% of the variance in MSME sustainability. This result confirms that sustainable MSME development requires an integration of financial discipline and digital adaptation. For local government and MSME development agencies in Pangkep Regency, the findings imply that training programs should combine financial recording, cash-flow management, digital marketing, QR-based payment adoption, and marketplace onboarding. Such integration is particularly important for maritime and coastal MSMEs that face geographic constraints and uneven market access.

This study has several limitations. First, the cross-sectional design captures MSME conditions at one point in time and cannot fully explain long-term causal dynamics. Second, the study used self-reported questionnaire data, which may be influenced by respondent perception. Third, the model focused on two main predictors and did not include other relevant variables such as access to finance, entrepreneurial orientation, institutional support, digital infrastructure quality, or competitive intensity. These limitations open space for further empirical development.

FUTURE DIRECTIONS

Future studies should consider longitudinal designs to examine whether improvements in financial management knowledge and digitalization lead to sustained performance over time. Future research may also test mediating variables such as access to finance, digital financial inclusion, innovation capability, or customer relationship capability. Comparative studies between mainland and island-based MSMEs in maritime regions would be valuable because geographic characteristics may shape digital adoption differently. In addition, future research should combine

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questionnaire data with objective business records, digital transaction data, or marketplace analytics to reduce self-reporting bias and strengthen empirical validity.

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