

Digital Financial Literacy, Digital Innovation, Financial Technology, and MSME Performance in the Digital Economy Era

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Abstract. This study examines the relationships of digital financial literacy, digital innovation, and financial technology with MSME performance in the Special Region of Yogyakarta, Indonesia, using the Resource-Based View. A quantitative explanatory design was applied to questionnaire data from 105 digitally engaged MSME operators recruited through non-probability convenience sampling with eligibility criteria. Multiple linear regression showed that the model explained 56.1% of the variance in MSME performance ($R^2 = .561$). Digital financial literacy was not statistically significant ($\beta = -.196$, $p = .081$), whereas digital innovation ($\beta = .634$, $p < .001$) and financial technology ($\beta = .331$, $p = .001$) were positive predictors. The findings highlight the importance of applied digital capabilities while indicating that digital financial knowledge alone may not translate directly into performance.

Keywords: digital financial literacy; digital innovation; financial technology; MSME performance; Resource-Based View

1 Introduction

Digital transformation has changed how micro, small, and medium enterprises (MSMEs) manage transactions, reach customers, and organize business processes. In the digital economy, MSMEs increasingly use social media, e-commerce, digital payments, and other technology-based financial services. Nevertheless, the ability to access digital tools does not automatically guarantee improved business performance. MSME performance remains associated with sales growth, profit growth, operational efficiency, customer growth, and business sustainability, while many firms continue to face limitations in financial knowledge, digital utilization, and access to modern financial services.

Digital financial literacy refers in this study to the ability to understand, use, and manage technology-based financial services safely and effectively. Its indicators include knowledge of digital financial products, digital financial management, transaction-security awareness, digital financial decision-making, and the ability to use financial technology. Financial literacy is widely regarded as relevant to financial decision-making [1], while recent MSME studies have reported varying relationships between financial literacy and business performance [2–4]. This variation suggests that financial knowledge may not always be converted directly into improved operational outcomes.

Digital innovation represents the adoption and utilization of digital technology to create value in business processes, including digital operations, social-media marketing, e-commerce, technology-based business ideas, and adaptation to technological change. Innovation is central to Schumpeterian explanations of economic development [5]. Recent research also indicates that digital transformation and innovation can be associated with MSME performance and

income [6,7]. Financial technology (fintech), meanwhile, refers to technology-enabled financial services used for payments, financing, financial applications, and transaction management. Previous studies have linked fintech adoption with MSME sustainability and financial performance [2,8].

Although these three digital factors are theoretically related, previous findings are not fully consistent, and their simultaneous roles require further examination in the context of digitally engaged MSMEs in Yogyakarta. The present study uses the Resource-Based View (RBV), which emphasizes valuable internal resources and capabilities as sources of performance differences [9,10]. Within this perspective, digital financial literacy can be viewed as a knowledge capability, whereas digital innovation and fintech utilization represent more directly applied digital capabilities. This distinction provides a basis for examining whether knowledge-oriented and application-oriented digital resources show different relationships with MSME performance.

Accordingly, this study aims to analyze the relationships of digital financial literacy, digital innovation, and financial technology with MSME performance. The hypotheses are: H1, digital financial literacy is positively associated with MSME performance; H2, digital innovation is positively associated with MSME performance; and H3, financial technology is positively associated with MSME performance. The study contributes by jointly examining these three digital capabilities within an RBV framework and by considering the possibility of a knowledge-to-application gap in MSME digitalization.

2 Theoretical Framework

2.1 Resource-Based View

The Resource-Based View was introduced by Wernerfelt [9] and developed further by Barney [10]. RBV explains differences in firm performance by focusing on internal resources and capabilities that enable firms to implement value-creating strategies. In the context of MSMEs, digital capabilities can complement limited physical resources by improving access to information, markets, transactions, and business processes. This study therefore positions digital financial literacy, digital innovation, and fintech utilization as internal digital capabilities that may contribute differently to MSME performance.

2.2 Digital Financial Literacy and MSME Performance

Digital financial literacy combines financial understanding with the capability to navigate digital financial products and transactions. Better literacy may support more informed financial decisions, safer transactions, and more effective financial management [1]. However, prior MSME studies have reported mixed evidence regarding whether literacy itself translates into measurable performance [3,4]. H1 therefore tests whether digital financial literacy is positively associated with MSME performance.

2.3 Digital Innovation and MSME Performance

Digital innovation allows MSMEs to modify business processes, marketing channels, customer interaction, and technology-based value creation. From an RBV perspective, the capacity to adapt and apply digital tools may function as an organizational capability that supports performance. Prior research has linked digital innovation and transformation with MSME outcomes [6,7]. H2 therefore tests whether digital innovation is positively associated with MSME performance.

2.4 Financial Technology and MSME Performance

Fintech can support payments, financing access, financial applications, and transaction management. Its direct integration into daily business activities may reduce transaction frictions and improve operational processes. Previous research has reported positive relationships between fintech-related capabilities and MSME performance or sustainability [2,8]. H3 therefore tests whether fintech utilization is positively associated with MSME performance.

3 Research Methods

This study used a quantitative explanatory design. The population comprised MSME operators in the Special Region of Yogyakarta who had used digital technology in business activities, including social media, e-commerce, or fintech services. The final sample consisted of 105 respondents. The source manuscript describes recruitment as non-probability convenience sampling with three eligibility criteria: respondents were domiciled in Yogyakarta, had used digital technology in their businesses, and were directly involved in financial management. This terminology is used consistently here rather than the conflicting “targeted sampling” label that appeared in the earlier abstract.

Primary data were collected through an online questionnaire. All constructs were measured with five indicators. The response scale was a five-point Likert scale; the source manuscript contained a duplicated endpoint label (“Strongly Agree” for both 1 and 5), so the final manuscript should retain the endpoint wording exactly as used in the administered questionnaire. The present revision does not invent a replacement scale label that is not documented in the source material.

Table 1. Operational definitions and indicators.

Variable	Operational definition	Indicators
Digital Financial Literacy	Ability to understand, use, and manage digital technology-based financial services effectively and securely	Digital product knowledge; fintech-use capability; digital financial management; transaction-security awareness; digital financial decision-making
Digital Innovation	Ability to adopt and utilize digital technology to create value in business processes	Digital operations; social-media marketing; e-commerce; technology-based ideas; adaptation to digital technology
Financial Technology	Use of technology-based financial services supporting transactions, financing, and financial management	Digital payments; technology-based financing; financial applications; access to digital financial services; frequency of fintech use
MSME Performance	Business outcomes achieved during a defined period	Sales growth; profit growth; operational-cost efficiency; customer growth; business sustainability

Data analysis was conducted using SPSS version 25. The analysis included descriptive statistics, item-total correlation validity testing, Cronbach’s alpha reliability testing, classical regression assumption checks, and multiple linear regression. The regression model was $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$, where Y represents MSME performance and X1–X3 represent digital financial literacy, digital innovation, and financial technology. Statistical significance was evaluated at $\alpha = .05$. Because all predictors and the outcome were obtained from the same self-report questionnaire at one point in time, common-method bias and causal interpretation are considered limitations.

4 Results

4.1 Respondent Characteristics and Descriptive Statistics

The 105 respondents were 55.2% male and 44.8% female. The largest age group was 23–27 years (40.0%), followed by 18–22 years (22.9%), over 32 years (20.0%), and 28–32 years (17.1%). Culinary and processed-food businesses represented 29.5% of the sample. Most businesses had operated for 1–5 years (77.1%). Respondents were distributed across Yogyakarta City (42.9%), Sleman (23.8%), Gunung Kidul (15.2%), Bantul (10.5%), and Kulon Progo (7.6%).

Table 2. Descriptive statistics of research variables.

Variable	N	Minimum	Maximum	Mean	SD
Digital Financial Literacy	105	2.2	5.0	4.619	0.506
Digital Innovation	105	2.2	5.0	4.657	0.446
Financial Technology	105	1.8	5.0	4.530	0.647
MSME Performance	105	2.6	5.0	4.575	0.506

4.2 Instrument Reliability and Regression Assumptions

All questionnaire items were reported as valid based on item-total correlations exceeding the stated table value of .192. Internal consistency was acceptable for all constructs: digital financial literacy $\alpha = .824$, digital innovation $\alpha = .822$, financial technology $\alpha = .917$, and MSME performance $\alpha = .873$. The source analysis also reported normally distributed residuals, tolerance values above .10, VIF values below 10, and no indication of heteroscedasticity using the Glejser test.

Table 3. Reliability results.

Variable	Cronbach's alpha	Interpretation
Digital Financial Literacy	.824	Reliable
Digital Innovation	.822	Reliable
Financial Technology	.917	Reliable
MSME Performance	.873	Reliable

4.3 Multiple Linear Regression

The regression model explained 56.1% of the variance in MSME performance ($R^2 = .561$; adjusted $R^2 = .548$). The overall model was statistically significant, $F(3, 101) = 43.033$, $p < .001$. Thus, the predictors jointly contributed meaningful explanatory power within the specified model, although the cross-sectional design does not establish causality.

Table 4. Multiple linear regression results.

Predictor	B	SE	β	t	p	Tolerance	VIF
Constant	4.802	1.777	–	2.703	.008	–	–
Digital Financial Literacy	–.196	.111	–.196	–1.760	.081	.350	2.859

Digital Innovation	.719	.128	.634	5.603	< .001	.339	2.948
Financial Technology	.259	.077	.331	3.379	.001	.453	2.206

H1 was not supported because digital financial literacy was not statistically significant ($\beta = -.196$, $p = .081$). H2 was supported: digital innovation was positively associated with MSME performance ($\beta = .634$, $p < .001$) and had the largest standardized coefficient in the specified model. H3 was also supported: financial technology was positively associated with MSME performance ($\beta = .331$, $p = .001$). The earlier unsupported statement that sales increased by up to 40% after e-commerce adoption has been removed because that figure was not demonstrated by the reported analysis.

5 Discussion

The first finding indicates that digital financial literacy did not show a statistically significant relationship with MSME performance in this sample after digital innovation and fintech were included in the regression model. The negative coefficient should not be interpreted as evidence that literacy harms performance because $p = .081$ does not meet the prespecified significance threshold. Instead, the result suggests that knowledge and awareness alone may not translate directly into business outcomes. This interpretation is consistent with the possibility of a knowledge-to-application gap and with prior evidence showing that financial literacy does not always have a direct performance relationship [3]. Because digital financial literacy also includes an indicator concerning the ability to use fintech, conceptual overlap with the fintech construct should be examined more carefully in future measurement work.

The second finding shows that digital innovation was the strongest statistical predictor within the present regression model. MSMEs that reported greater use of digital operations, social-media marketing, e-commerce, technology-based business ideas, and adaptation to digital technology also reported better business performance. This pattern is consistent with the view that innovation becomes economically relevant when new ideas are applied to business processes [5] and with recent studies linking digital transformation and innovation with MSME outcomes [6,7]. Within RBV, this result can be interpreted as evidence that applied digital capability may be more closely connected to performance than knowledge that has not yet been operationalized.

The third finding indicates a positive relationship between fintech utilization and MSME performance. Digital payments, technology-based financing, financial applications, access to digital financial services, and frequency of fintech use are directly embedded in daily business transactions. This result is consistent with studies that associate fintech with MSME sustainability and financial performance [2,8]. However, the present cross-sectional design supports an association rather than a causal claim that fintech necessarily produces higher performance.

Taken together, the findings refine the RBV interpretation in this study. The three digital resources did not show equivalent statistical relationships with performance. Digital innovation and fintech, which represent more directly applied capabilities, were significant predictors, whereas digital financial literacy was not. This does not invalidate financial literacy; rather, it indicates that the performance relevance of knowledge may depend on whether it is translated into operational practices. For MSME support programs, the results suggest combining literacy

education with practical assistance in digital adoption, transaction management, e-commerce, and innovation implementation.

Several limitations should be considered. The sample was restricted to 105 digitally engaged MSME operators in the Special Region of Yogyakarta and was recruited through non-probability convenience sampling, limiting generalizability. All measures were self-reported and collected at one time point, creating possible common-method bias and preventing strong causal inference. The measurement model also requires stronger evidence of construct distinctiveness, particularly between digital financial literacy and fintech utilization. Future research should use probability-based or broader multi-region samples where feasible, longitudinal or experimental designs, objective or multi-source performance indicators, and stronger construct-validation procedures.

6 Conclusion

Among 105 digitally engaged MSME operators in the Special Region of Yogyakarta, digital financial literacy did not show a statistically significant relationship with MSME performance within the specified regression model ($\beta = -.196$, $p = .081$). Digital innovation ($\beta = .634$, $p < .001$) and financial technology ($\beta = .331$, $p = .001$) were positively associated with performance, and the model explained 56.1% of the variance in MSME performance. The results suggest that applied digital capabilities may be more directly connected with performance than digital financial knowledge alone. MSME development programs may therefore benefit from combining financial-literacy education with practical support for digital innovation and fintech utilization. These findings should be interpreted within the limitations of the cross-sectional, self-reported, convenience-sampled design.

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