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Enhancing MSME Competitive Performance in Indonesia: The Role of Digital Capability

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Abstract: This study aims to examine the effect of managerial competence, product differentiation, and institutional collaboration on the competitive performance of micro, small, and medium enterprises, with digital capability as a mediating variable. The study is motivated by the increasing importance of digital transformation in enhancing business competitiveness in a dynamic market environment. A quantitative approach was employed using survey data collected from micro, small, and medium enterprises, analyzed through variance-based structural equation modeling. The results indicate that managerial competence and institutional collaboration have a positive and significant effect on digital capability, while product differentiation does not show a significant effect. Digital capability significantly influences competitive performance and mediates the relationship between managerial competence and institutional collaboration on performance, but does not mediate the effect of product differentiation. The study concludes that digital capability plays a crucial role in strengthening competitiveness by transforming internal competencies and external collaboration into performance outcomes.

Keyword: Managerial Competence, Product Differentiation, Institutional Collaboration;, Digital Capability, MSME Competitive Performance

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in the Indonesian economy through their contribution to employment creation, income distribution, poverty reduction, and regional economic resilience. MSMEs dominate the national business structure and contribute significantly to economic activities across provinces. During periods of economic uncertainty, MSMEs often demonstrate greater flexibility than large firms because they are able to adapt more quickly to changing market conditions (OECD, 2021; Rampaul, 2025). Despite their important contribution, many Indonesian MSMEs continue to face challenges in achieving sustainable competitive performance. Common problems include limited managerial capability, weak product differentiation, restricted institutional support,

and uneven digital transformation. These constraints reduce the ability of MSMEs to compete effectively in increasingly dynamic and technology-driven markets (Kraus et al., 2022).

Competitive performance refers to the ability of firms to achieve superior outcomes compared with competitors through sales growth, customer expansion, innovation, market share, and profitability (Porter, 2008). In the MSME context, competitive performance is influenced not only by external market opportunities but also by internal strategic resources and organizational capabilities. The Resource-Based View argues that firms can achieve sustainable competitive advantage when they possess valuable, rare, inimitable, and organized resources (Barney, 1991). For MSMEs, managerial competence, product uniqueness, collaborative networks, and digital capability may serve as strategic resources that enhance competitiveness and business sustainability (Vu, 2020).

One important factor influencing MSME competitive performance is managerial competence. Managerial competence reflects the ability of business owners or managers to plan, organize, coordinate, make decisions, and manage business resources effectively (Vithayaporn et al., 2021). Since many MSMEs in Indonesia are owner-managed businesses, managerial competence becomes highly important in determining strategic direction and operational performance. Firms with stronger managerial competence are generally more capable of identifying market opportunities, responding to competition, managing financial resources, and maintaining customer relationships. Previous studies have shown that managerial capability contributes positively to business growth and organizational performance because competent managers are able to transform limited resources into productive outcomes (Mitchelmore & Rowley, 2013; Teece, 2018).

In addition to managerial competence, product differentiation is also essential for improving MSME competitiveness. According to Porter's competitive strategy perspective, differentiation enables firms to offer unique products or services that create greater customer value and are difficult for competitors to imitate (Porter, 2008). Product differentiation may include innovation, product quality, packaging, branding, design uniqueness, and customer experience. For MSMEs operating in highly competitive markets, differentiation is important because competition based solely on price may reduce profit margins and weaken long-term sustainability. Therefore, MSMEs that successfully develop differentiated products are more likely to strengthen customer loyalty and improve competitive performance (Kotler & Keller, 2011; Zhang et al., 2023).

Institutional collaboration also plays an important role in supporting MSME development. Institutional collaboration refers to cooperation between MSMEs and external stakeholders such as universities, government agencies, financial institutions, business associations, and digital platforms. Through such collaboration, MSMEs may gain access to training, financing, innovation support, market information, mentoring, and broader business networks (Nguyen et al., 2018). The Triple Helix perspective emphasizes the importance of interaction among universities, industry, and government in promoting innovation and economic development (Etzkowitz & Leydesdorff, 2000). In developing economies such as Indonesia, institutional collaboration can help MSMEs overcome resource limitations and strengthen their competitiveness (Sudirman & Nurfaisah, 2025).

In the digital era, the effectiveness of managerial competence, product differentiation, and institutional collaboration may depend on digital capability. Digital capability refers to the ability of firms to adopt and utilize digital technologies in business operations, marketing activities, customer communication, and innovation processes (Warner & Wäger, 2019). The rapid growth of e-commerce, digital marketplaces, social media, and online payment systems has transformed the competitive environment for MSMEs. Firms with stronger digital capability are generally more capable of reaching broader markets, improving operational efficiency, responding quickly to consumer preferences, and enhancing customer engagement

(Verhoef et al., 2021). From the perspective of Dynamic Capability Theory, digital capability enables firms to integrate, build, and reconfigure internal and external resources in rapidly changing environments (Teece, 2018).

Although previous studies have examined MSME performance from various perspectives, several important research gaps remain. First, prior studies tend to analyze managerial competence, product differentiation, and institutional collaboration separately rather than integrating them into a comprehensive framework (Vu, 2020). Second, many studies focus on financial or organizational performance, while limited attention has been given specifically to competitive performance (Sudirman & Nurfaisah, 2025). Third, the mediating role of digital capability in transforming strategic resources and collaborative mechanisms into competitive performance remains underexplored, particularly in the context of MSMEs in developing economies (Krause & Schnitzler, 2022; Verhoef et al., 2021). These limitations indicate the need for a more integrated investigation combining strategic management, marketing, collaboration, and digital transformation perspectives.

This study contributes theoretically by developing an integrated strategic capability framework that combines managerial competence, product differentiation, and institutional collaboration through the mediating role of digital capability. Unlike previous studies that examined these variables independently, this study explains how digital capability transforms internal and external strategic resources into competitive performance within the context of Indonesian MSMEs. The study therefore extends the Resource-Based View and Dynamic Capability Theory in explaining MSME competitiveness during digital transformation.

Based on these arguments, this study aims to analyze the effects of managerial competence, product differentiation, and institutional collaboration on MSME competitive performance and to examine the mediating role of digital capability. The findings are expected to contribute theoretically to the development of strategic management and MSME competitiveness literature, while also providing practical recommendations for MSME owners, policymakers, universities, and supporting institutions in strengthening MSME competitiveness in Indonesia.

METHOD

This study employed a quantitative research approach with an explanatory research design to examine the causal relationships among managerial competence, product differentiation, institutional collaboration, digital capability, and MSME competitive performance in Indonesia. A quantitative approach was considered appropriate because it enables objective measurement of variables and statistical testing of hypotheses derived from established theoretical frameworks. The explanatory design was used to explain both direct and indirect relationships among the variables.

The population of this study consisted of Micro, Small, and Medium Enterprises (MSMEs) operating in Indonesia across various sectors, including trade, manufacturing, services, food and beverage, agriculture, and creative industries. Given the large number and broad geographical distribution of MSMEs, this study applied a purposive sampling technique. Respondents were selected based on several criteria: (1) MSME owners or managers directly involved in business decision-making, (2) businesses that had operated for at least two years, (3) active business operations during the research period, and (4) utilization of digital tools for marketing or operational activities.

The sample size was determined based on the recommendation of PLS-SEM analysis, which suggests a minimum sample of five to ten times the number of indicators used in the model (Hair et al., 2021). Since this study employed 25 measurement indicators, the minimum required sample ranged from 125 to 250 respondents. Therefore, this study used 250 MSME respondents to ensure sufficient statistical power and model stability.

The research was conducted from December 2025 to January 2026 across several Indonesian provinces representing urban and semi-urban MSME clusters, including Jakarta, West Java, Central Java, East Java, Yogyakarta, and Banten. These regions were selected because they represent areas with high MSME concentration and relatively active digital business adoption. The distribution of respondents across multiple provinces was intended to improve the representativeness and generalizability of the findings within the Indonesian MSME context.

Data were collected using a structured questionnaire distributed both directly and online through MSME communities, local business associations, and entrepreneurship networks. Prior to large-scale data collection, a pilot test involving 30 respondents was conducted to assess clarity, readability, and consistency of questionnaire items. To minimize the potential for common method bias (CMB), several procedural and statistical remedies were applied. Procedurally, respondents were assured of anonymity and confidentiality to reduce evaluation apprehension and social desirability bias. The questionnaire items were arranged systematically using clear and simple language to minimize ambiguity. Statistically, Harman's single-factor test was conducted to assess common method variance. The result showed that the first factor accounted for less than 50% of the total variance, indicating that common method bias was not a serious concern in this study (Podsakoff et al., 2003).

The questionnaire consisted of two main sections. The first section captured respondent demographic and business profiles, including age, gender, educational background, business sector, business age, and number of employees. The second section measured the research variables using a five-point Likert scale, where 1 indicated strongly disagree and 5 indicated strongly agree.

Managerial competence was operationalized as the ability of MSME owners or managers to plan, organize, lead, and control business resources effectively. Product differentiation referred to the ability of MSMEs to create unique products distinct from competitors through quality, design, innovation, and branding. Institutional collaboration was defined as cooperation between MSMEs and external institutions such as universities, government agencies, financial institutions, and business communities. Digital capability represented the ability of MSMEs to adopt and utilize digital technology for marketing, communication, and operational efficiency. MSME competitive performance referred to the level of business success in achieving superior market outcomes such as sales growth, customer growth, profitability, and competitive advantage.

Table 1. Operational Definition of Variables

Variable	Operational Definition	Indicators
Managerial Competence (ξ_1)	The ability of MSME owners/managers to manage business activities effectively through planning, organizing, directing, and controlling resources (Barney, 1991; Teece, 2018).	X1. Planning ability X2. Decision-making X3. Leadership X4. Resource management X5. Performance evaluation
Product Differentiation (ξ_2)	The ability to create products perceived as unique and superior compared with competitors (Kotler & Keller, 2011; Porter, 2008).	X6. Unique design X7. Product quality X8. Innovation X9. Attractive packaging X10. Distinctive characteristics
Institutional Collaboration (ξ_3)	Cooperation between MSMEs and supporting institutions to improve business capability and market access (Etzkowitz, 2003; Guerrero et al., 2016).	X11. University partnership X12. Government support X13. Access to finance X14. Business networking X15. Collaborative promotion
Digital Capability (η_1)	The ability of MSMEs to utilize digital technologies in business operations and	Y1. Social media use Y2. Marketplace usage

Variable	Operational Definition	Indicators
	market development (Teece, 2018; Warner & Wäger, 2019).	Y3. Digital promotion Y4. Business applications Y5. Technology adaptation
MSME Competitive Performance (η_2)	The ability of MSMEs to achieve superior competitive outcomes relative to competitors (Barney, 1991; Porter, 2008).	Y6. Sales growth Y7. Customer growth Y8. Market share Y9. Profitability Y10. Competitive position

The data analysis in this study was conducted using Structural Equation Modeling based on Partial Least Squares (PLS-SEM) with the assistance of SmartPLS software. This technique was chosen because it is suitable for analyzing complex causal relationships involving multiple latent constructs, direct effects, and mediation effects simultaneously. PLS-SEM is also appropriate for predictive-oriented studies, moderate sample sizes, and data that do not necessarily meet multivariate normality assumptions (Hair et al., 2021).

PLS-SEM was selected instead of covariance-based SEM because this study focuses on prediction-oriented analysis and the examination of complex relationships involving mediation effects. In addition, PLS-SEM is considered more appropriate for exploratory and theory extension research, particularly when the model includes multiple latent constructs and does not require strict multivariate normality assumptions (Hair et al., 2021). Furthermore, PLS-SEM provides robust estimation for studies involving MSME survey data characterized by heterogeneous respondent backgrounds and varying business conditions.

The analysis was carried out in two major stages, namely the evaluation of the measurement model (*outer model*) and the structural model (*inner model*). The measurement model evaluation aimed to assess the validity and reliability of the constructs. Convergent validity was examined through outer loading values and Average Variance Extracted (AVE), where loading values above 0.70 and AVE values above 0.50 indicate acceptable validity. Reliability was assessed using Cronbach's Alpha and Composite Reliability, with threshold values above 0.70 indicating satisfactory internal consistency. Discriminant validity was further evaluated using the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT).

After confirming the adequacy of the measurement model, the structural model was evaluated to test the proposed hypotheses. The coefficient of determination (R^2) was used to assess the explanatory power of the model. Predictive relevance was examined using the Stone-Geisser Q^2 value, where values greater than zero indicate acceptable predictive capability. Effect size (f^2) was also calculated to determine the relative contribution of each exogenous variable to endogenous constructs.

Hypothesis testing was conducted using the bootstrapping procedure to generate t-statistics and p-values for each structural path. The relationship was considered statistically significant when the t-statistic exceeded 1.96 and the p-value was below 0.05 at the 5 percent significance level. To examine the mediating role of digital capability, indirect effect testing was also conducted using bootstrapping. Mediation was considered significant when the indirect effect between the independent variables and MSME competitive performance through digital capability was statistically significant.

The structural equations developed in this study are formulated as follows:

Model 1 (Mediation Model)

$$\eta_1 = \beta_1\xi_1 + \beta_2\xi_2 + \beta_3\xi_3 + \varepsilon_1$$

Model 2 (Main Structural Model)

$$\eta_2 = \beta_4\eta_1 + \beta_5\xi_1 + \beta_6\xi_2 + \beta_7\xi_3 + \varepsilon_2$$

Through these methodological procedures, the study is expected to produce valid, reliable, and robust empirical findings regarding the determinants of MSME competitive performance in Indonesia.

RESULT AND DISCUSSION

Measurement Model

The measurement model evaluation aims to assess the reliability and validity of the constructs, including convergent validity and indicator reliability. Convergent validity is examined through outer loading values, where a threshold of 0.70 is generally considered acceptable.

Figure 1 presents the outer model illustrating the relationship between latent constructs and their indicators. To provide a more detailed assessment of indicator reliability, the outer loading values for each construct are reported in Table 1.

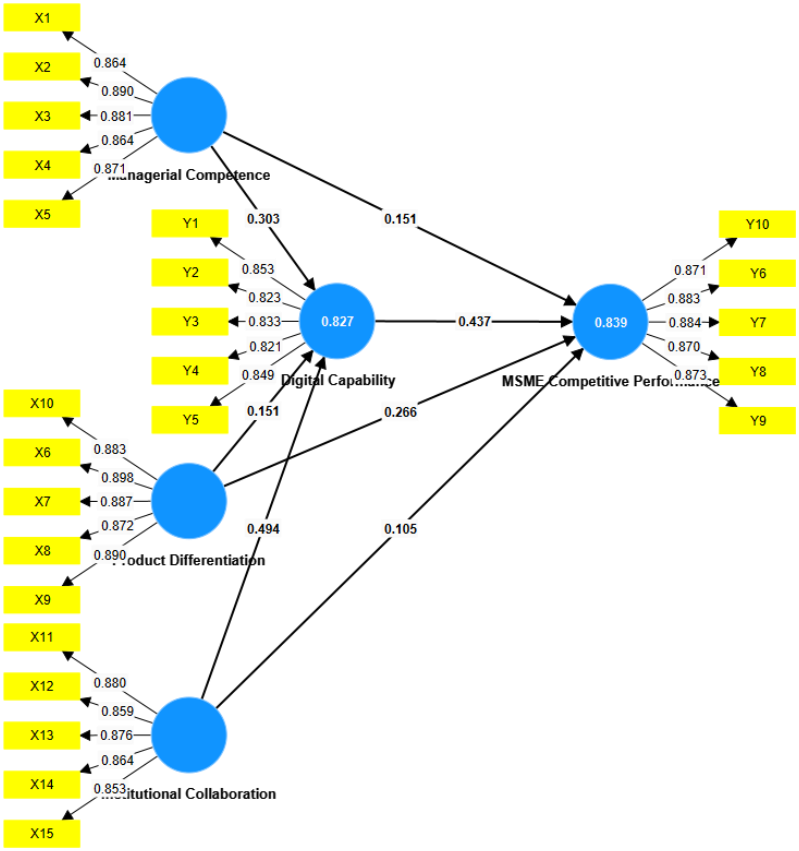

Figure 1. Measurement Model with Indicator Loadings

Based on the results presented in Table 2, all indicators exhibit outer loading values above 0.80, indicating strong indicator reliability. Specifically, the Managerial Competence construct (X_1–X_5) shows loading values ranging from 0.864 to 0.890, suggesting that all indicators strongly reflect the underlying construct.

Table 2. Outer Loading Values of Measurement Model

	Managerial Competence	Product Differentiation	Institutional Collaboration	Digital Capability	MSME Competitive Performance
X1	0,864				
X2	0,890				
X3	0,881				
X4	0,864				
X5	0,871				
X6		0,898			
X7		0,887			
X8		0,872			
X9		0,890			
X10		0,883			
X11			0,880		
X12			0,859		
X13			0,876		
X14			0,864		
X15			0,853		
Y1				0,853	
Y2				0,823	
Y3				0,833	
Y4				0,821	
Y5				0,849	
Y6					0,883
Y7					0,884
Y8					0,870
Y9					0,873
Y10					0,871

Source: Processed primary data using SmartPLS 4.0.9.9

Similarly, the Product Differentiation construct (X_6–X_{10}) demonstrates high loadings between 0.872 and 0.898, confirming adequate convergent validity. The Institutional Collaboration construct (X_{11}–X_{15}) also meets the recommended threshold, with values ranging from 0.853 to 0.880.

For the endogenous constructs, Digital Capability (Y_1–Y_5) presents loading values between 0.821 and 0.853, while MSME Competitive Performance (Y_6–Y_{10}) shows loadings ranging from 0.870 to 0.884. These results indicate that all measurement items are valid and reliable in explaining their respective latent variables.

Overall, since all outer loading values exceed the minimum requirement of 0.70, it can be concluded that the measurement model satisfies the criteria for convergent validity. Therefore, no indicators need to be removed from the model.

Table 3 presents the results of the measurement model evaluation, including internal consistency reliability and convergent validity. Internal consistency is assessed using Cronbach's alpha and composite reliability (rho_a and rho_c), while convergent validity is evaluated through the Average Variance Extracted (AVE).

The results indicate that all constructs meet the recommended threshold for reliability. Specifically, Cronbach's alpha values range from 0.892 to 0.932, exceeding the minimum requirement of 0.70. Similarly, composite reliability values (rho_c) range between 0.921 and 0.948, indicating a high level of internal consistency among the indicators.

Table 3. Construct Reliability and Convergent Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Digital Capability	0,892	0,892	0,921	0,699
Institutional Collaboration	0,917	0,917	0,938	0,751
MSME Competitive Performance	0,925	0,927	0,943	0,768
Managerial Competence	0,923	0,923	0,942	0,764
Product Differentiation	0,932	0,934	0,948	0,785

Source: Processed primary data using SmartPLS 4.0.9.9

Furthermore, the AVE values for all constructs range from 0.699 to 0.785, which are above the recommended threshold of 0.50. This confirms that each construct explains more than half of the variance of its indicators, thereby satisfying the criteria for convergent validity.

Overall, these findings demonstrate that the measurement model is both reliable and valid, and thus suitable for further analysis in the structural model.

Table 4 presents the discriminant validity assessment using the Fornell–Larcker criterion. This approach requires that the square root of the Average Variance Extracted (AVE) for each construct should be higher than its correlations with other constructs.

Table 4. Discriminant Validity Assessment

	Digital Capability	Institutional Collaboration	MSME Competitive Performance	Managerial Competence	Product Differentiation
Digital Capability	0,836				
Institutional Collaboration	0,888	0,866			
MSME Competitive Performance	0,889	0,864	0,876		
Managerial Competence	0,851	0,842	0,843	0,874	
Product Differentiation	0,867	0,915	0,872	0,869	0,886

Source: Processed primary data using SmartPLS 4.0.9.9

The results indicate that all constructs meet the Fornell–Larcker criterion. Specifically, the diagonal values (square root of AVE), such as 0.836 for Digital Capability, 0.866 for Institutional Collaboration, 0.876 for MSME Competitive Performance, 0.874 for Managerial Competence, and 0.886 for Product Differentiation, are greater than the corresponding inter-construct correlations. This demonstrates that each construct has a higher level of shared variance with its own indicators than with other constructs, thereby confirming adequate discriminant validity.

With the measurement model demonstrating satisfactory reliability and validity, the analysis proceeds to the structural model evaluation. Figure 2 presents the inner model, highlighting the path relationships among constructs and serving as the basis for hypothesis testing.

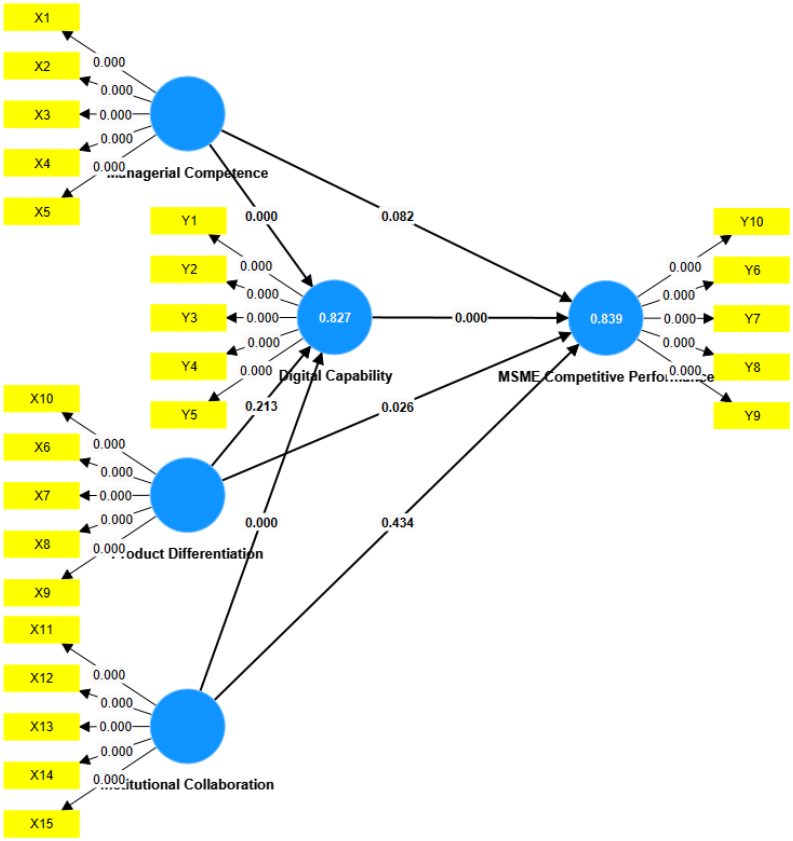

Figure 2. Structural Model Illustrating the Relationships among Constructs

Table 5 presents the results of the structural model evaluation, including direct, indirect, and total effects among the constructs.

Table 5. Direct, Indirect, and Total Effects

	Direct Effect		Indirect Effect		Total Effect	
	Original Sample (O)	P Values	Original Sample (O)	P Values	Original Sample (O)	P Values
Managerial Competence -> Digital Capability	0,303	0,000			0,303	0,000
Product Differentiation -> Digital Capability	0,151	0,213			0,151	0,213
Institutional Collaboration -> Digital Capability	0,494	0,000			0,494	0,000
Managerial Competence -> Digital Capability -> MSME Competitive Performance	0,151	0,082	0,133	0,004	0,284	0,001
Product Differentiation -> Digital Capability -> MSME Competitive Performance	0,266	0,026	0,066	0,267	0,332	0,004
Institutional Collaboration -> Digital Capability -> MSME Competitive Performance	0,105	0,434	0,216	0,000	0,321	0,014
Digital Capability -> MSME Competitive Performance	0,437	0,000			0,437	0,000

Source: Processed primary data using SmartPLS 4.0.9.9

The direct effect results indicate that managerial competence has a positive and significant effect on digital capability ($\beta = 0.303$, $p < 0.001$), while institutional collaboration also shows a significant positive effect on digital capability ($\beta = 0.494$, $p < 0.001$). In

contrast, product differentiation does not have a significant effect on digital capability (β = 0.151, p = 0.213).

Furthermore, digital capability has a significant positive effect on MSME competitive performance (β = 0.437, p < 0.001), indicating its critical role in enhancing firm competitiveness.

Regarding mediation effects, digital capability significantly mediates the relationship between managerial competence and MSME competitive performance (indirect effect β = 0.133, p = 0.004), as well as between institutional collaboration and MSME competitive performance (indirect effect β = 0.216, p < 0.001). However, digital capability does not mediate the relationship between product differentiation and MSME competitive performance (indirect effect β = 0.066, p = 0.267).

The total effects further confirm that managerial competence and institutional collaboration have significant overall impacts on MSME competitive performance, while product differentiation shows a weaker and partially insignificant influence.

Table 6 presents the evaluation of the structural model, including the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2).

Table 6. Model Fit and Predictive Relevance Assessment

	F-Square		Q-Square	R-Square Adjusted
	Digital Capability	MSME Competitive Performance		
Managerial Competence	0,123	0,029	0,000	
Product Differentiation	0,017	0,056	0,000	
Institutional Collaboration	0,218	0,009	0,000	
Digital Capability		0,205	0,565	0,825
MSME Competitive Performance			0,623	0,836

Source: Processed primary data using SmartPLS 4.0.9.9

The R^2 values indicate that the model has strong explanatory power. Specifically, digital capability has an R^2 value of 0.825, suggesting that 82.5% of its variance is explained by managerial competence, product differentiation, and institutional collaboration. Similarly, MSME competitive performance shows an R^2 value of 0.836, indicating that 83.6% of its variance is explained by the model.

In terms of predictive relevance, the Q^2 values for digital capability (0.565) and MSME competitive performance (0.623) are both greater than zero, confirming that the model has strong predictive relevance.

Furthermore, the effect size (f^2) results reveal that institutional collaboration has a moderate effect on digital capability (f^2 = 0.218), while managerial competence shows a small-to-moderate effect (f^2 = 0.123). In contrast, product differentiation has a weak effect (f^2 = 0.017). Additionally, digital capability demonstrates a moderate effect on MSME competitive performance (f^2 = 0.205).

Overall, these findings indicate that the structural model is robust, with strong explanatory and predictive capabilities.

Although the R^2 values for digital capability and MSME competitive performance are relatively high, these findings should be interpreted cautiously. The high explanatory power may indicate that the constructs included in the model are conceptually closely related, particularly within the context of MSMEs undergoing digital transformation. In addition, the use of perceptual self-reported measures may contribute to stronger interrelationships among variables. Nevertheless, the high R^2 values also suggest that managerial competence, institutional collaboration, and digital capability collectively represent central strategic mechanisms in explaining MSME competitiveness in emerging market contexts.

Managerial Competence, Digital Capability, and MSME Performance

The findings indicate that managerial competence significantly enhances digital capability. This result is consistent with the Resource-Based View, which posits that internal capabilities such as managerial knowledge, experience, and decision-making skills serve as strategic resources that enable firms to build competitive advantage.

Empirically, this finding aligns with studies by (Teece, 2018), which emphasize that managerial capability plays a crucial role in sensing and seizing digital opportunities. Similarly, (Warner & Wäger, 2019) found that managerial competencies significantly influence firms' digital transformation processes.

Furthermore, the mediating role of digital capability supports the Dynamic Capability Theory, which argues that firms must reconfigure internal competencies to adapt to changing environments. This result is in line with (Vial, 2019), who highlights that digital transformation is driven by the ability of management to integrate technology into business processes.

Thus, managerial competence contributes to performance indirectly through digital capability, indicating a partial mediation mechanism.

Product Differentiation and Its Limited Link to Digital Capability

The results show that product differentiation does not significantly influence digital capability. This finding suggests that MSMEs may implement differentiation strategies independently of digital transformation initiatives.

From a theoretical standpoint, Porter's Generic Strategies explains that differentiation focuses on uniqueness in products or services, which does not necessarily require digital integration. This explains why differentiation may not automatically translate into digital capability.

Empirical studies also provide mixed evidence. For instance, (Porter, 2008) emphasizes that differentiation can be achieved through design, quality, or branding without relying heavily on digital tools. Meanwhile, (Abraham et al., 2001; Halima et al., 2025) argue that digital technologies can enhance differentiation, but only when firms strategically integrate digital resources into their value proposition.

Interestingly, the significant direct effect of product differentiation on MSME performance suggests that differentiation remains a relevant competitive strategy. This finding is consistent with (Kotler & Keller, 2011), who highlight that product uniqueness continues to be a key driver of market success. However, the absence of mediation indicates that digital capability does not act as a transmission mechanism in this relationship.

The insignificant relationship between product differentiation and digital capability may indicate that many Indonesian MSMEs still rely on traditional differentiation strategies rather than digitally driven innovation. In practice, product uniqueness among MSMEs is often developed through craftsmanship, local identity, taste variation, packaging, or interpersonal customer relationships, which may not necessarily require advanced digital integration. This finding also suggests that digital technology adoption among MSMEs may still be operational rather than strategic in nature. Many firms appear to use digital tools primarily for promotion and transaction purposes rather than for product development, innovation management, or value creation activities. Consequently, differentiation capability and digital capability may evolve independently within the MSME context.

Another possible explanation is that MSMEs with limited financial and technological resources prioritize short-term market survival over digital innovation investment. As a result, differentiation strategies may remain disconnected from broader digital transformation

initiatives. This finding highlights the uneven level of digital maturity among MSMEs in developing economies.

Institutional Collaboration as a Driver of Digital Capability

The results demonstrate that institutional collaboration has the strongest influence on digital capability. This supports the Open Innovation perspective, which emphasizes that firms can enhance their capabilities by leveraging external knowledge and partnerships.

Empirical evidence from (Mazzocchi, 2004) suggests that collaboration with external factors such as government, universities, and industry networks facilitates access to innovation resources. Similarly, (Scuotto, 2017) found that SMEs benefit significantly from external collaboration in building digital and innovation capabilities.

In the context of MSMEs, collaboration is particularly important due to limited internal resources. The significant mediation effect indicates that institutional collaboration improves performance primarily through enhancing digital capability, rather than directly.

This finding reinforces the argument that external support must be transformed into internal capability to generate tangible performance outcomes.

Digital Capability and MSME Competitive Performance

Digital capability is found to have a strong and significant impact on MSME competitive performance, confirming its role as a critical strategic asset. This finding aligns with the Dynamic Capability Theory, which highlights the importance of adapting to technological change.

Empirical support is provided by (Mazzocchi, 2004), who argue that digital capability enables firms to enhance operational efficiency, customer engagement, and innovation. Additionally, (Nambisan et al., 2019) demonstrate that digital technologies reshape business models and improve firm performance.

The high R^2 and Q^2 values further indicate that digital capability is a central construct in explaining MSME performance. This suggests that digital capability acts as a strategic bridge linking internal resources and external collaboration to competitive outcomes.

The central theoretical contribution of this study lies in positioning digital capability as a transformation mechanism that converts internal competencies and external collaborative resources into competitive performance. While previous studies have often treated digital capability as an independent organizational resource, this study demonstrates that digital capability functions more dynamically as an enabling mechanism through which MSMEs reconfigure managerial competence and institutional collaboration into competitive outcomes. This finding extends the Resource-Based View by emphasizing that resource possession alone is insufficient to generate competitive advantage unless firms possess the capability to transform those resources into digitally enabled business practices. At the same time, the study strengthens the Dynamic Capability perspective by showing that digital capability acts as a strategic reconfiguration process that allows MSMEs to adapt, integrate, and leverage both internal and external resources in highly dynamic market environments.

The findings also provide important implications for MSME competitiveness research in emerging economies. In many developing country contexts, MSMEs frequently operate under resource constraints, limited technological readiness, and fragmented institutional support. Under such conditions, digital capability becomes a critical strategic bridge connecting knowledge, collaboration, and market competitiveness. Therefore, this study suggests that digital transformation should not be understood merely as technology adoption, but as an organizational capability that integrates strategic resources into sustainable competitive performance.

CONCLUSION

This study examined the effects of managerial competence, product differentiation, and institutional collaboration on MSME competitive performance, with digital capability acting as a mediating mechanism. The findings indicate that managerial competence and institutional collaboration significantly enhance digital capability, which subsequently improves MSME competitive performance. In contrast, product differentiation does not significantly influence digital capability, although it remains directly associated with competitive performance. These results suggest that digital capability plays a central role in strengthening MSME competitiveness in the context of digital transformation.

The main theoretical contribution of this study lies in positioning digital capability as a transformation mechanism that converts internal competencies and external collaborative resources into competitive performance. The findings extend the Resource-Based View and Dynamic Capability Theory by demonstrating that competitive advantage is achieved not merely through resource possession, but through the capability to transform those resources into digitally enabled business practices. This study therefore contributes to MSME competitiveness research by offering an integrated strategic capability framework within the context of emerging economies.

Practically, the findings imply that MSME development policies should prioritize digital capability enhancement alongside managerial training and institutional support programs. Universities, government agencies, and business support institutions should collaborate in facilitating digital adoption, technological training, and innovation-based business development for MSMEs.

This study has several limitations. First, the research employed a cross-sectional design, which limits the ability to capture changes in digital capability over time. Second, the study relied on self-reported survey data, which may be subject to respondent bias. Third, the research focused on Indonesian MSMEs, which may limit the generalizability of the findings to other national contexts. Future research is therefore encouraged to employ longitudinal approaches, comparative cross-country analysis, or mixed method designs to further explore the dynamic role of digital capability in MSME competitiveness.

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