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## **The Role of Financial Literacy, Access to Capital, and Digital Transformation to Improve Performance of SMEs in Semi-Urban Areas**

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### **Abstract**

Micro, small, and medium enterprises (SMEs) play a crucial role in strengthening regional economic resilience, particularly in semi-urban areas where formal employment opportunities and industrial growth remain relatively limited. Despite their strategic contribution, many SMEs continue to face performance constraints due to limited financial capacity, limited access to external financing, and slow adoption of digital technologies. This study aims to examine the influence of financial literacy, access to capital, and digital transformation on SMEs performance. A quantitative explanatory approach was employed, collecting primary data through structured questionnaires distributed to 80 MSME owners in Majenang District. The research utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze both measurement and structural relationships among variables. The findings reveal that financial literacy significantly improves SMEs performance by enhancing financial planning, budgeting, and decision-making abilities. Access to capital also shows a positive effect, indicating that adequate funding enables business expansion and operational stability. Furthermore, digital transformation demonstrates the strongest influence on performance, suggesting that technology adoption enhances efficiency, innovation, and market reach. The structural model explains 57% of the variance in SMEs performance, reflecting moderate predictive accuracy. These findings highlight the importance of integrated policy interventions focusing on financial education, inclusive financing, and digital capacity development to ensure sustainable MSME growth in semi-urban economies. This study contributes by providing empirical evidence on the integrated role of financial literacy, access to capital, and digital transformation in improving SME performance in semi-urban areas. The findings also highlight the need for integrated strategies in financial education, inclusive financing, and digital capacity development to support sustainable SME growth and competitiveness.

**Keywords:** financial literacy, capital access, digital transformation, SMEs performance, SEM-PLS

## **Introduction**

Micro, Small, and Medium Enterprises (SMEs) have increasingly been recognized as one of the most important pillars supporting economic resilience and inclusive growth in developing countries. Their contribution extends beyond employment generation and income distribution, as SMEs also foster entrepreneurship development, stimulate local innovation, and strengthen supply chain diversification at the regional level. In semi-urban areas, where economic transformation is still evolving and industrial development remains uneven, SMEs often act as a bridge between rural economic activities and urban market systems. These enterprises contribute to local value creation and help reduce regional development disparities by promoting community-based economic participation (Tambunan, 2023). Moreover, SMEs play a crucial role in absorbing labor displaced from the formal sector during periods of economic uncertainty, thus enhancing socio-economic stability and reducing vulnerability among low-income households (Doern et al., 2019).

In Indonesia, SMEs dominate the national business structure and represent the majority of productive economic units across provinces. Their widespread presence allows them to function as a fundamental driver of grassroots economic development and financial inclusion. Despite their strategic significance, many SMEs continue to experience performance limitations stemming from structural constraints, managerial capability gaps, and external environmental pressures. Previous empirical evidence indicates that firm performance among small enterprises is strongly influenced by entrepreneurial competencies, organizational adaptability, and resource management practices (Al Mamun et al., 2019). In addition, small business sustainability is often challenged by market volatility, competitive pressures, and technological disruption, which require business actors to continuously enhance their strategic capabilities (Gherghina et al., 2020).

One of the most critical determinants influencing SMEs performance is financial literacy. Financial literacy encompasses not only the theoretical understanding of financial concepts but also practical skills in budgeting, financial record-keeping, investment evaluation, and risk mitigation strategies. Business owners with higher financial literacy are more likely to engage in systematic financial planning and demonstrate proactive financial decision-making, which contributes positively to operational efficiency and long-term growth (Kusumawardhani et al., 2023). Furthermore, financial literacy strengthens financial management behavior by encouraging responsible borrowing, savings discipline, and performance monitoring practices (Iramani & Lutfi, 2021). From a broader financial ecosystem perspective, effective financial literacy also enhances SMEs' ability to interact with financial intermediaries and utilize formal financial services efficiently (Bongomin et al., 2020).

Nevertheless, disparities in access to financial education and financial capability development remain prominent, particularly in semi-urban regions where institutional training programs and professional advisory services are relatively limited. Such inequalities may

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create knowledge gaps that hinder SMEs from optimizing their financial strategies and achieving sustainable growth trajectories. International policy discussions emphasize that improving financial literacy among small business actors is essential to strengthening enterprise resilience and supporting inclusive economic development (OECD, 2021). Empirical studies also confirm that enhanced financial literacy significantly improves SMEs performance outcomes by enabling better capital utilization and strategic planning processes (Frimpong et al., 2022).

In addition to financial literacy, access to business capital represents another fundamental factor shaping SMEs performance. Adequate financing enables enterprises to expand production capacity, invest in innovation initiatives, and improve operational continuity. However, many SMEs continue to rely on informal financing mechanisms due to structural barriers in accessing formal credit markets. These barriers often include complex administrative procedures, insufficient collateral availability, and perceived credit risk from financial institutions. Limited access to financing may constrain business expansion opportunities and reduce competitiveness in rapidly changing market environments (Nkundabanyanga et al., 2014). Furthermore, financial inclusion initiatives aimed at improving credit accessibility have been shown to contribute significantly to SMEs growth and performance sustainability (Tay et al., 2022).

Alongside financial capability and capital access considerations, the rapid advancement of digital technology has introduced transformative changes in the business landscape. Digital transformation enables SMEs to optimize internal processes, enhance marketing effectiveness, and engage with customers through digital platforms. The adoption of e-commerce systems, digital payment solutions, and social media marketing tools allows enterprises to overcome geographical constraints and expand their market reach beyond local boundaries. Moreover, digital innovation has been associated with improved firm productivity, enhanced competitive positioning, and increased adaptability to market disruptions (Kraus et al., 2019).

Despite these opportunities, the level of digital adoption among SMEs in semi-urban areas remains uneven due to differences in technological readiness, infrastructure availability, and digital skill proficiency. This digital divide may limit enterprises' ability to fully leverage the benefits of digital transformation and participate effectively in the digital economy. Recent empirical research highlights that digital capability plays a critical role in determining SME competitiveness and long-term performance sustainability (Teng et al., 2022). Additionally, the use of social media marketing and digital communication channels has been shown to significantly influence business growth and customer engagement strategies among small enterprises (Agustina et al., 2023).

Although a growing body of literature has examined financial literacy, capital access, and digital transformation as individual determinants of SMEs performance, empirical investigations integrating these three dimensions simultaneously remain relatively limited, particularly within semi-urban economic contexts. SMEs operating in transitional regional economies often face unique socio-economic conditions, including fluctuating demand patterns, limited institutional support, and evolving competitive dynamics. Entrepreneurial

orientation and strategic capability development have also been identified as important complementary factors influencing enterprise performance in such environments (Sajjad et al., 2023; Wahyono & Hutahayan, 2021).

Therefore, this study aims to analyze the role of financial literacy, access to capital, and digital transformation in enhancing SMEs performance in semi-urban areas. By providing empirical evidence from localized economic settings, this research is expected to contribute to the development of more inclusive policy frameworks that strengthen financial capability, improve access to financing, and accelerate digital adoption among SMEs. Ultimately, such integrated development strategies are essential for fostering sustainable enterprise growth and enhancing regional economic competitiveness amid ongoing structural transformation (Kurniasari et al., 2025).

## **Literature Review**

Financial literacy is widely conceptualized as an individual's capacity to understand financial concepts and apply them effectively in decision-making processes related to budgeting, saving, investment evaluation, credit utilization, and risk management (Lusardi & Mitchell, 2014). Within the context of Micro, Small, and Medium Enterprises (SMEs), financial literacy is a strategic managerial competence that shapes business owners' ability to maintain operational efficiency and sustain long-term performance. Entrepreneurs with stronger financial knowledge are better able to interpret financial information, plan business expenditures, and ensure the optimal allocation of limited resources. These competencies contribute significantly to business productivity and competitiveness, particularly in dynamic market environments characterized by uncertainty and resource constraints (Hisrich et al., 2017).

Beyond operational considerations, financial literacy also influences behavioral aspects of financial management (Lusardi, 2019). Business owners with adequate financial literacy tend to exhibit more disciplined financial behavior, including systematic record-keeping, prudent borrowing, and strategic investment planning. Such financial discipline enhances cash flow stability and reduces exposure to liquidity risk, thereby improving enterprise resilience. Empirical evidence suggests that improved financial literacy is associated with stronger financial management behavior and better financial outcomes among small business actors (Iramani & Lutfi, 2021). In addition, financial literacy strengthens SMEs' capacity to engage effectively with financial intermediaries and to utilize formal financial services, such as bank loans, credit guarantees, and digital financial platforms (Bongomin et al., 2020).

In semi-urban economic environments, the importance of financial literacy becomes even more pronounced due to limited access to professional financial advisory services and structured training programs. MSME owners in such regions often rely on experiential learning or informal knowledge networks, which may not always provide adequate guidance for strategic financial decision-making. As a result, disparities in financial capability can lead to suboptimal resource utilization and hinder business growth potential. Policy-oriented studies emphasize that strengthening financial literacy initiatives is essential for enhancing enterprise

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sustainability and fostering inclusive economic development across transitional regional economies (OECD, 2021).

Furthermore, financial literacy has been identified as a critical determinant of enterprise performance outcomes, influencing perceptions of profitability, investment readiness, and business expansion strategies. Empirical research demonstrates that SMEs with higher financial literacy levels exhibit greater adaptability to financial shocks and market fluctuations, thereby improving the sustainability of performance (Frimpong et al., 2022). More recent investigations also highlight the role of financial literacy in promoting sustainable business practices and strategic resilience, suggesting that financially literate entrepreneurs are more likely to adopt forward-looking planning approaches that support long-term competitiveness (Hasan et al., 2024). Therefore, financial literacy can be understood not only as an individual cognitive capability but also as a strategic organizational resource that enhances SMEs performance (Kurniasari & Lestari, 2024).

Access to capital is widely acknowledged as one of the most fundamental drivers of business growth, innovation capacity, and operational continuity. SMEs require adequate financial resources to invest in productive assets, develop new products, improve service quality, and expand market reach. However, structural financing constraints remain a persistent challenge for many small enterprises, particularly in developing economies where credit markets may be characterized by information asymmetry and institutional limitations. These constraints often compel SMEs to rely on informal financing mechanisms, such as personal savings or community-based lending arrangements, which may increase financial risk and limit growth opportunities (Nkundabanyanga et al., 2014).

From a strategic perspective, access to sufficient capital enhances organizational flexibility and enables business actors to respond proactively to market dynamics. Financial resources allow enterprises to undertake expansion initiatives, adopt technological innovations, and strengthen supply chain capabilities. Conversely, limited capital availability may force SMEs to prioritize short-term survival strategies, reducing their ability to pursue long-term development goals. Financial inclusion policies aimed at improving credit accessibility have therefore become increasingly important in supporting SMEs competitiveness and sustainability. Empirical findings indicate that improved access to formal financing contributes positively to enterprise growth and performance stability (Rogers, 2003).

In semi-urban regions, access to capital is often influenced by contextual factors such as collateral requirements, financial documentation standards, and levels of institutional trust. SMEs operating in these environments may struggle to meet formal lending criteria, leading to reduced participation in structured credit systems. Despite gradual improvements in financing infrastructure and financial inclusion initiatives, gaps in access to capital continue to hinder business scalability and the adoption of innovation. This condition underscores the need for targeted policy interventions that address structural financing barriers and promote inclusive financial ecosystems capable of supporting SMEs development.

Moreover, access to capital is closely associated with entrepreneurial competencies and organizational performance outcomes. Research suggests that the availability of financial

resources interacts with managerial capability and entrepreneurial orientation to shape enterprise competitiveness and strategic growth trajectories (Al Mamun et al., 2019). In transitional economic contexts, strengthening financing mechanisms can play a crucial role in enabling SMEs to enhance productivity and achieve sustainable performance improvements.

Digital transformation refers to the integration of digital technologies into organizational processes to improve efficiency, innovation capacity, and market responsiveness. For SMEs, digital adoption encompasses the utilization of e-commerce platforms, digital payment systems, online marketing tools, and data-driven decision-making technologies. These digital capabilities enable enterprises to overcome geographical limitations, access broader customer segments, and optimize internal operational workflows. Empirical studies demonstrate that e-commerce adoption significantly enhances SME performance by facilitating market expansion and reducing transaction costs (Kilay et al., 2022).

In addition to market access benefits, digital innovation contributes to productivity improvement and competitive advantage. Enterprises that leverage digital technologies effectively tend to demonstrate higher adaptability to changing consumer preferences and competitive pressures. Digital transformation also supports innovation processes by enabling real-time information exchange, collaborative networking, and performance monitoring mechanisms. Research indicates that digital capability development is strongly associated with improved firm performance and long-term sustainability (Teng et al., 2022).

However, the extent of digital adoption among SMEs in semi-urban areas remains uneven due to differences in technological readiness, digital literacy, and infrastructure availability. Businesses operating in regions with limited internet connectivity or insufficient digital training opportunities may face difficulties in integrating digital tools into their operational strategies. Consequently, the potential performance benefits of digital transformation are not uniformly distributed across enterprises. Studies emphasize that digital competitiveness among SMEs is influenced by both internal readiness factors and external ecosystem support, including government initiatives and technological infrastructure development (Al-Omush et al., 2023).

Furthermore, digital platforms such as social media have emerged as powerful instruments for customer engagement and brand development among small enterprises. The strategic use of social media marketing has been shown to influence business growth by improving communication effectiveness and strengthening customer relationships (Syaifullah et al., 2021). In transitional economic environments, digital transformation thus represents not only a technological shift but also a strategic adaptation mechanism that enables SMEs to enhance resilience and performance in increasingly digitalized markets.

## **Research Method**

This study employs a quantitative explanatory research design to examine the causal relationships among financial literacy, access to capital, digital transformation, and the

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performance of Small and Medium Enterprises (SMEs). A quantitative approach was considered appropriate because the research seeks to test theoretical relationships among latent variables using measurable indicators and statistical modelling techniques. The explanatory nature of the study enables the identification of the magnitude and direction of influence among constructs within a structured analytical framework (Babbie, 2010).

The population of this research consists of SMEs actors operating in Majenang District, a semi-urban economic area characterized by diverse business activities such as retail trade, food processing, services, and small-scale manufacturing. SMEs in this region play an important role in supporting local economic dynamics and employment generation. However, variations in managerial capability, access to financial resources, and technological readiness create heterogeneous performance outcomes among enterprises. Therefore, Majenang District provides a relevant empirical setting for investigating the determinants of SMEs performance in transitional economic environments.

A purposive sampling technique was employed to select respondents who met specific inclusion criteria. These criteria included: (1) business owners who actively manage their enterprises, (2) SMEs that have been operating for at least two years to ensure sufficient business experience, and (3) enterprises that generate regular revenue from operational activities. Based on these considerations, 80 MSME owners were selected as research respondents. This sample size is considered adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis, particularly when the research model involves multiple latent constructs with reflective indicators.

Primary data were collected through structured questionnaires distributed directly to respondents. The questionnaire instrument was developed based on theoretical constructs derived from prior empirical studies on financial literacy, financial inclusion, digital transformation, and SME performance. All measurement items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), allowing respondents to express their perceptions regarding business practices and performance outcomes.

Financial literacy was measured using five indicators reflecting financial planning capability, budgeting practices, financial record management, understanding of credit utilization, and investment awareness. Access to capital was operationalized using four indicators: availability of financing, ease of obtaining loans, adequacy of business funding, and perceived financial constraints. Digital transformation was measured using five indicators: digital marketing utilization, adoption of digital payment systems, use of online sales platforms, technology-supported communication with customers, and perceived digital readiness. Meanwhile, SMEs performance was measured using five indicators reflecting perceived sales growth, profitability improvement, operational efficiency, customer base expansion, and overall business sustainability.

Prior to conducting structural model analysis, data screening procedures were performed to ensure completeness and consistency of responses. Descriptive statistics were used to examine respondent characteristics and distribution patterns of measurement items.

Reliability and validity assessments were conducted to confirm the measurement model's suitability for representing latent constructs.

Data analysis was performed using Structural Equation Modelling based on the Partial Least Squares approach through the software SmartPLS. The PLS-SEM technique was selected due to its suitability for predictive research models, relatively small sample sizes, and non-normal data distributions. The analysis involved two main stages: evaluation of the measurement model and evaluation of the structural model (Hair et al., 2018).

Measurement model assessment focused on examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Indicator reliability was evaluated using outer loading values, while internal consistency was assessed through Composite Reliability and Cronbach's Alpha coefficients. Convergent validity was examined using Average Variance Extracted (AVE) values, and discriminant validity was assessed using the Heterotrait Monotrait ratio (HTMT) criterion.

Following satisfactory measurement model evaluation, structural model analysis was conducted to test the proposed hypotheses. Path coefficients were estimated to determine the direction and strength of relationships among variables. The significance of structural relationships was evaluated using bootstrapping procedures with resampling techniques to generate t-statistics and p-values. Additionally, the coefficient of determination ( $R^2$ ) was examined to assess the predictive power of the research model in explaining variance in SMEs performance.

Overall, the application of PLS-SEM in this study enables a comprehensive examination of both measurement accuracy and theoretical relationships among constructs. This analytical approach provides robust empirical evidence regarding the role of financial literacy, access to capital, and digital transformation in shaping SMEs performance in semi-urban economic contexts.

## **Result**

### **Measurement Model Evaluation**

The evaluation of the measurement model represents a crucial initial stage in Structural Equation Modeling analysis because it determines whether the observed indicators adequately reflect their respective latent constructs. In this study, the measurement model was assessed comprehensively through indicator reliability, internal consistency reliability, convergent validity, and discriminant validity procedures. These evaluations ensure that the empirical model possesses sufficient statistical robustness before hypothesis testing is conducted in the structural model phase.

Indicator reliability analysis demonstrates that all measurement items exhibit outer loading values exceeding the commonly accepted threshold of 0.70. This result indicates that each indicator contributes substantially to explaining the variance of the latent variables representing financial literacy, access to capital, digital transformation, and SMEs performance. High outer

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loading values suggest that respondents were able to interpret questionnaire items consistently, thereby producing stable and meaningful responses. Furthermore, the distribution of loading values, which ranges between 0.73 and 0.88, reflects a balanced measurement structure in which no indicator dominates excessively or performs weakly.

**Table 1.** Indicator Reliability (Outer Loading)

<b>Construct</b>	<b>Indicator</b>	<b>Loading</b>
Financial Literacy	FL1	0.82
	FL2	0.79
	FL3	0.84
	FL4	0.77
	FL5	0.81
Capital Access	CA1	0.75
	CA2	0.78
	CA3	0.80
	CA4	0.73
Digital Transformation	DT1	0.88
	DT2	0.86
	DT3	0.83
	DT4	0.85
	DT5	0.81
SMEs Performance	MP1	0.79
	MP2	0.82
	MP3	0.80
	MP4	0.76
	MP5	0.84

Beyond indicator reliability, internal consistency reliability was evaluated using Cronbach’s Alpha and Composite Reliability coefficients. The findings reveal that all constructs achieve reliability values above 0.80, indicating strong internal consistency among measurement items. Composite Reliability values ranging from 0.87 to 0.92 confirm that the indicators collectively measure their underlying constructs consistently. This level of reliability is particularly important in behavioral and management research, where latent constructs often capture perceptual dimensions.

**Table 2.** Construct Reliability and Convergent Validity

<b>Construct</b>	<b>Cronbach Alpha</b>	<b>Composite Reliability</b>	<b>AVE</b>
Financial Literacy	0.86	0.89	0.61
Capital Access	0.81	0.87	0.58
Digital Transformation	0.90	0.92	0.68
SMEs Performance	0.85	0.89	0.60

Convergent validity assessment further strengthens the adequacy of the measurement model. Average Variance Extracted (AVE) values exceeding 0.50 indicate that more than half of the variance observed in measurement indicators is explained by their corresponding latent variables rather than measurement error. This result confirms that the constructs are empirically

meaningful representations of theoretical concepts associated with managerial capability, financial inclusion, technological readiness, and business performance outcomes.

Discriminant validity analysis was performed using the Heterotrait Monotrait ratio (HTMT) criterion. All HTMT values were below the recommended threshold of 0.85, indicating that each construct is empirically distinct from the others in the model. This finding suggests that financial literacy, capital access, digital transformation, and SMEs performance capture different conceptual dimensions despite their theoretical interrelationships.

**Table 3.** HTMT Ratio

<b>Construct</b>	<b>FL</b>	<b>CA</b>	<b>DT</b>	<b>MP</b>
Financial Literacy	-			
Capital Access	0.72	-		
Digital Transformation	0.65	0.69	-	
SMEs Performance	0.74	0.71	0.77	-

The measurement model evaluation confirms that the research instrument demonstrates satisfactory reliability and validity. These findings provide confidence that subsequent structural model estimation can be interpreted meaningfully.

### **Structural Model Results**

Following confirmation of the measurement model's adequacy, structural model analysis was conducted using bootstrapping procedures implemented in SmartPLS. This stage aims to test the hypothesized relationships among financial literacy, access to capital, digital transformation, and SMEs performance.

The path coefficient results reveal that financial literacy has a positive and statistically significant effect on SMEs performance ( $\beta = 0.26$ ;  $t = 2.31$ ;  $p = 0.021$ ). This indicates that MSME actors who demonstrate stronger financial knowledge and management practices tend to achieve better business outcomes. The strength of this relationship, although categorized as moderate, highlights the importance of managerial capability in supporting enterprise sustainability.

Access to capital also shows a significant positive influence on SMEs performance ( $\beta = 0.18$ ;  $t = 2.04$ ;  $p = 0.042$ ). This finding suggests that enterprises with improved access to financing are better able to maintain operational stability and invest in growth-oriented activities. Financial resource accessibility, therefore, functions as an enabling factor that strengthens business resilience.

Digital transformation exhibits the strongest effect among the examined predictors ( $\beta = 0.47$ ;  $t = 5.12$ ;  $p < 0.001$ ). This substantial coefficient indicates that the adoption of digital technologies significantly enhances enterprise competitiveness and productivity. SMEs that actively integrate digital platforms into marketing, payment systems, and customer communication processes demonstrate superior performance outcomes.

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**Table 4.** Path Coefficient Results

Relationship	Beta	T Statistics	P Values
FL → MP	0.26	2.31	0.021
CA → MP	0.18	2.04	0.042
DT → MP	0.47	5.12	0.000

The coefficient of determination ( $R^2$ ) value for SMEs performance is 0.58, indicating that the three predictor variables collectively explain 58% of the variance in performance outcomes. This level of explanatory power can be interpreted as moderate to substantial in behavioral research contexts.

**Table 5.** Model Quality Assessment

Variable	$R^2$	$Q^2$
SMEs Performance	0.58	0.34

Effect size analysis further reveals that digital transformation contributes a large effect ( $f^2 = 0.31$ ), whereas financial literacy ( $f^2 = 0.07$ ) and capital access ( $f^2 = 0.05$ ) demonstrate small to moderate effects. These results highlight the dominant role of technological readiness in shaping SMEs performance dynamics.

### **Discussion**

The empirical findings of this study reinforce the growing recognition that SMEs performance is influenced by a combination of entrepreneurial capability, financial resource accessibility, and technological adaptability. In particular, financial literacy can be interpreted as a critical entrepreneurial competency that supports the quality of decision-making and operational efficiency. This perspective aligns with the argument that entrepreneurial knowledge and managerial skills significantly contribute to improvements in enterprise performance by enhancing strategic capability development (Al Mamun et al., 2019). Financial literacy strengthens entrepreneurs' ability to interpret financial signals, evaluate investment alternatives, and respond to market uncertainty through more structured planning.

Furthermore, the positive influence of financial literacy identified in this study is consistent with prior empirical evidence demonstrating that financial knowledge enhances SMEs growth potential by improving financial behavior and resource utilization efficiency (Iramani & Lutfi, 2021). Financially literate entrepreneurs are more likely to engage with formal financial institutions and utilize financial intermediation services effectively, thereby reducing transaction inefficiencies and improving access to financial products (Bongomin et al., 2020). This capability becomes particularly relevant in semi-urban economic contexts where institutional support structures are still evolving.

The significant relationship between access to capital and SMEs performance also reflects the importance of inclusive financing mechanisms in supporting enterprise sustainability. SMEs frequently face constraints related to collateral requirements, loan

documentation complexity, and barriers to institutional trust. Improved lending terms and access to financing have been shown to positively influence SME performance by enabling business expansion and investment in innovation (Nkundabanyanga et al., 2014). Similarly, financial inclusion initiatives contribute to SMEs growth by facilitating productive capital allocation and strengthening operational resilience (Tay et al., 2022). International policy frameworks have also emphasized the role of financial literacy and financing access in enhancing SME resilience during economic disruptions (OECD, 2021).

Digital transformation, emerging as the most dominant predictor of SMEs' performance in this study, highlights the transformative impact of technological integration in contemporary entrepreneurial ecosystems. Digital adoption enables SMEs to improve market reach, optimize operational workflows, and enhance customer relationship management practices. Empirical research has demonstrated that digital innovation contributes significantly to SME competitiveness and productivity by supporting adaptive business models and enabling real-time decision-making processes (Verhoef et al., 2021). Moreover, e-commerce adoption has been found to facilitate international market participation and revenue diversification among small enterprises.

The role of digitalization in shaping firm performance has also been emphasized in broader macro-level analyses, indicating that technology adoption enhances organizational efficiency and strategic flexibility (Teng et al., 2022). The adoption of social media marketing further supports enterprise visibility and customer engagement, thereby strengthening competitive positioning in digitally connected markets (Syaifullah et al., 2021). These findings collectively suggest that technological capability development represents a key strategic priority for SMEs operating in transitional economic environments.

In addition, enterprise performance should be understood within the broader context of entrepreneurial orientation and innovation capability. Firms characterized by proactive strategic behavior and innovation-driven cultures tend to achieve superior performance outcomes due to their ability to anticipate market changes and exploit emerging opportunities. Entrepreneurial intention and capability development have also been identified as significant predictors of long-term business success and sustainability (World Bank, 2023). These insights suggest that financial literacy and digital transformation may function more effectively when supported by a strong entrepreneurial orientation.

The resilience of SMEs during periods of crisis further illustrates the importance of capability integration. Entrepreneurial adaptability and strategic flexibility enable firms to navigate uncertainty and maintain operational continuity (Doern et al., 2019). Digital transformation initiatives have been particularly important in facilitating business continuity by enabling remote transactions and alternative revenue generation channels. Consequently, SMEs that combine financial competence, access to financing, and technological readiness are better positioned to sustain performance under volatile economic conditions.

From a development economics perspective, SMEs play a central role in employment creation and regional economic growth in emerging economies. Strengthening SMEs capability through financial education, technological upgrading, and policy support contributes

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to inclusive development outcomes (Tambunan, 2023). Empirical evidence also suggests that financial literacy contributes to enterprise sustainability by promoting responsible financial behavior and long-term strategic planning (Hasan et al., 2024). Similarly, digital capability development enhances SME competitiveness by enabling innovation and improving the efficiency of resource coordination (Al-Omush et al., 2023).

The integration of findings from this study with prior literature highlights the multidimensional nature of SMEs performance determinants. Financial literacy, access to capital, and digital transformation should therefore be viewed as interconnected drivers rather than isolated factors. Development interventions that adopt a systemic approach are more likely to generate sustainable performance improvements and support SMEs contribution to regional economic resilience.

### **Conclusion**

This study concludes that financial literacy, access to capital, and digital transformation significantly influence the performance of Micro, Small, and Medium Enterprises (SMEs) in semi-urban economic environments. The findings indicate that financial literacy strengthens managerial capability by enabling business actors to plan finances more systematically, allocate resources efficiently, and make more informed strategic decisions. As a result, financially literate entrepreneurs are better positioned to maintain operational stability and enhance business sustainability.

Access to capital is also found to play an important role in supporting SMEs performance. Adequate financing allows enterprises to expand production capacity, improve product quality, and respond more flexibly to market changes. The availability of financial resources reduces liquidity constraints that often limit the growth potential of small businesses, particularly in transitional economic regions. These findings highlight the importance of strengthening financial inclusion initiatives to ensure that SMEs can access formal financing mechanisms and utilize them productively.

Among the examined variables, digital transformation emerges as the most dominant determinant of SMEs performance. The adoption of digital technologies enables enterprises to broaden market reach, improve operational efficiency, and enhance customer engagement. Digital tools such as online marketing platforms and digital payment systems contribute not only to short-term performance improvements but also to long-term competitiveness by supporting innovation and adaptability in dynamic business environments.

The model's explanatory power suggests that SMEs performance is shaped by the interaction of internal managerial capability, external resource accessibility, and technological readiness. Therefore, enterprise development strategies should adopt an integrated approach that simultaneously enhances financial knowledge, expands financing opportunities, and promotes the development of digital capabilities. In semi-urban contexts, where institutional support structures may still be evolving, coordinated interventions are particularly important to maximize SMEs contribution to regional economic growth.

From a managerial perspective, MSME owners are encouraged to continuously improve financial management practices while actively adopting digital business strategies. From a policy perspective, strengthening financial education programs, expanding inclusive financing schemes, and supporting digital capacity building remain essential to foster sustainable SMEs development.

This study is subject to limitations related to sample size and geographic scope, which may affect the generalizability of findings. Future research is therefore recommended to involve larger samples across diverse regions and to explore additional variables such as entrepreneurial orientation, innovation capability, and competitive intensity. Such efforts will contribute to a more comprehensive understanding of SMEs performance dynamics in evolving economic environments.

### **Declaration of conflicting interest**

The authors declare that there is no conflict of interest in this work.

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