
THE ORIENTATION OF ENTREPRENEURSHIP, INNOVATION CAPABILITIES, ACCESS TO FINANCING, AND THE APPLICATION OF DIGITAL TECHNOLOGY ON THE GROWTH AND SUSTAINABILITY OF MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES) IN INDONESIA

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Abstract

This study examines the effects of entrepreneurial orientation, innovation capabilities, access to financing, and the application of digital technology on the growth and sustainability of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Using a quantitative approach, data were collected from 175 MSME respondents through a Likert scale (1–5) questionnaire and analyzed using the Structural Equation Modelling-Partial Least Squares (SEM-PLS 3) technique. The results show that entrepreneurial orientation and innovation capabilities significantly and positively influence MSME growth, emphasizing that proactive and innovative business behavior enhances performance and competitiveness. Meanwhile, access to financing plays a vital role in supporting long-term sustainability, enabling MSMEs to maintain liquidity and expand operations. Furthermore, the application of digital technology demonstrates a significant impact on both growth and sustainability, suggesting that digital transformation strengthens market presence and operational efficiency. Collectively, these factors account for a substantial portion of the variance in MSME growth and sustainability, highlighting the interdependence between entrepreneurship, innovation, financial access, and technology adoption in shaping Indonesia's MSME ecosystem.

Keywords: *Entrepreneurial Orientation, Innovation Capabilities, Access to Financing, Digital Technology, MSME Sustainability.*

A. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economic development, contributing significantly to employment, income generation, and national productivity. The Ministry of Cooperatives and SMEs reports that MSMEs represent over 99% of business entities and absorb more than 97% of the national workforce. Despite this major contribution, MSMEs face persistent challenges that hinder their growth and sustainability, including limited access to financing, weak innovation capabilities, insufficient entrepreneurial orientation, and slow digital adoption. Access to financing remains a key obstacle, as MSMEs struggle to obtain adequate capital amid high raw material costs and marketing constraints (Ratnaningtyas et al., 2025; Tambunan, 2011; Zulvikri, 2024). Weak innovation capabilities also limit competitiveness, as many MSMEs lack product innovation to compete in wider markets (Ratnaningtyas et al., 2025). Developing local innovation through simple technologies suited to community needs is therefore essential (Ardiansyah, 2011).

Moreover, insufficient entrepreneurial orientation and managerial weaknesses constrain effective business operations (Ratnaningtyas et al., 2025) underscoring the need for continuous training and capacity building (Zulvikri, 2024). Lastly, limited digital literacy and inadequate access to digital payment systems restrict MSMEs from leveraging technology for efficiency and market expansion (Ardiansyah, 2011; Ratnaningtyas et al., 2025). Hence, digital transformation is crucial to enhance competitiveness and integrate MSMEs into global value chains.

The concept of entrepreneurial orientation (EO) has gained increasing attention in studies of MSME performance, as it reflects a firm's strategic posture in terms of innovativeness, proactiveness, and risk-taking (Lumpkin & Dess, 1996). EO is crucial for enhancing the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, where these enterprises play a vital role in economic growth. Firms with strong EO tend to adapt better to market changes and are more capable of exploiting new opportunities, thereby improving competitiveness and resilience in dynamic environments. Innovativeness, as a core component of EO, drives MSMEs to develop new products and processes, fostering innovative work behavior that supports individual-level innovation within firms (Kellerman & Seligman, 2023; Sahoo & Yadav, 2017). Furthermore, innovation ambidexterity, the ability to balance exploration and exploitation, mediates the relationship between EO and MSME performance, underscoring the importance of innovation for business success (Prasetyo et al., 2025). Proactiveness, which involves anticipating and acting upon future market demands, enables MSMEs to stay ahead of competitors and seize emerging opportunities, contributing to improved performance and growth (Putri & Affandi, 2024; Sahoo & Yadav, 2017). Meanwhile, risk-taking, defined as the willingness to commit resources to uncertain ventures, is essential for encouraging bold decision-making and strategic investment that enhance business performance (Putri & Affandi, 2024). The ability to manage risks effectively allows MSMEs to navigate volatile markets and sustain long-term operations (Yuefen et al., 2024).

Innovation capability is a vital determinant of MSME competitiveness, especially in Indonesia where these enterprises play a major role in driving the economy. Innovation enables MSMEs to create value-added products, improve operational efficiency, and respond effectively to changing consumer preferences and technological disruptions. However, many Indonesian MSMEs still face barriers to innovation due to limited financial resources, lack of skilled human capital, and inadequate access to research and development support. Digital transformation is a key driver of innovation capability, as the adoption of digital technologies, such as e-commerce platforms and social media, helps MSMEs expand market reach and enhance product offerings (Andrianata et al., 2024; Putri & Widadi, 2024). Collaboration with startups, business incubators, and other external partners also strengthens innovation by improving product quality and facilitating market expansion (Andrianata et al., 2024). Moreover, the effective utilization of knowledge and technological outputs is essential for fostering product innovation and enhancing competitiveness (Rochmah, 2020). Despite these opportunities, MSMEs continue to face significant obstacles: limited financial and technological resources constrain investment in innovation (Putri & Widadi, 2024), the shortage of skilled human capital hampers the application of new ideas (Muis, 2025), and inadequate access to research and development support restricts their potential for new product development and process improvement (Santoso, 2024).

Access to financing remains a persistent obstacle for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, despite the establishment of various financial institutions and government programs aimed at supporting small businesses. The primary barriers include stringent collateral requirements, complex loan procedures, and a lack of financial literacy among MSME owners, which collectively hinder their ability to secure formal financing and invest in critical areas such as technology, human resources, and product development, factors

essential for long-term sustainability. Financial literacy plays a pivotal role in enabling MSMEs to manage cash flow, access formal financial services, and make informed investment decisions, with studies showing that competencies in debt management and bookkeeping positively influence the ability of MSMEs to overcome financial constraints (Chaidir et al., 2025; Suidarma et al., 2024). Although the Indonesian government has introduced initiatives such as the Kredit Usaha Rakyat (KUR) credit guarantee scheme to enhance access to finance, many MSMEs still rely on informal funding sources due to the complexity of formal financial procedures (Tambunan, 2011). As a result, the majority of micro and small enterprises continue to face substantial challenges in obtaining formal financial support. Limited access to financing also constrains investment in product innovation and managerial skill development, which are critical for enhancing competitiveness and sustainability (Antoni & Karlin, 2024; Ratnaningtyas et al., 2025). Therefore, improving financial literacy and simplifying access to financing remain key strategies for strengthening MSME growth and long-term resilience (Ratnaningtyas et al., 2025).

In the era of Industry 4.0, the application of digital technology has become a game-changer for Micro, Small, and Medium Enterprises (MSMEs). Digital tools such as e-commerce platforms, digital payment systems, and data analytics empower MSMEs to expand their market reach, streamline operations, and enhance customer engagement. The COVID-19 pandemic further accelerated this digital transformation, demonstrating that MSMEs capable of leveraging technology were more resilient to economic disruptions. However, the digital divide remains a significant challenge, as many MSMEs, particularly in rural or underdeveloped regions, continue to face limitations in digital infrastructure and lack the necessary technological skills to fully adopt digital solutions.

Given these dynamics, understanding the combined effects of entrepreneurial orientation, innovation capability, access to financing, and digital technology on MSME growth and sustainability is crucial. While previous studies have explored these variables individually, few have examined their integrated impact using a comprehensive quantitative model. Therefore, this study aims to fill that gap by empirically testing how these four factors influence the growth and sustainability of MSMEs in Indonesia. Specifically, the objectives of this study are: (1) to analyze the effect of entrepreneurial orientation on the growth and sustainability of MSMEs; (2) to evaluate the impact of innovation capabilities on MSME performance; (3) to examine how access to financing contributes to MSME growth and sustainability; and (4) to assess the influence of digital technology application on MSME development.

B. LITERATURE REVIEW

1. Entrepreneurial Orientation

Entrepreneurial orientation (EO) is defined as the strategic posture of an organization that reflects its tendency to innovate, take risks, and act proactively in pursuing new opportunities (Lumpkin & Dess, 1996). EO plays a crucial role in enhancing a firm's competitiveness and adaptability to changing market environments, as firms with strong EO are better positioned to identify emerging trends, respond swiftly to customer needs, and engage in innovative ventures that drive performance improvement (Covin & Slevin, 1991). In the context of Micro, Small, and Medium Enterprises (MSMEs), EO fosters creativity, innovation, and resilience in overcoming business challenges. Rauch et al. (2009) found that EO positively influences business growth by enabling firms to explore new markets and enhance operational performance. In developing countries like Indonesia, EO is particularly vital as it motivates small businesses to transcend traditional practices and embrace a more strategic, opportunity-driven approach. Empirical studies further support this, showing that

MSMEs with higher levels of EO tend to achieve stronger profitability and sustainability outcomes (Suharti & Sirine, 2011; Putra et al., 2022).

2. Innovation Capabilities

Innovation capability refers to a firm's ability to develop new products, services, or processes that enhance competitiveness and enable adaptation to environmental changes (Lawson & Samson, 2001). This capability extends beyond technological innovation to include organizational and marketing innovations that drive value creation. Schumpeter's (1934) theory of innovation highlights innovation as the core engine of economic growth and entrepreneurial success. For Micro, Small, and Medium Enterprises (MSMEs), innovation capability determines their capacity to survive and thrive in competitive markets. Firms with strong innovation capabilities are more responsive to shifts in consumer preferences and technological advancements (Damanpour, 1991). In Indonesia, MSMEs that actively engage in innovation tend to achieve higher productivity and export potential (Tambunan, 2019), while the ability to differentiate products and services through innovation enhances customer satisfaction and market expansion (Lestari et al., 2021). Empirical evidence further shows that innovation capability has a positive impact on both business growth and sustainability, as continuous innovation allows firms to remain relevant in dynamic industries, sustain customer loyalty, and improve financial performance over time (Zehir et al., 2015; Nuryani & Hidayat, 2020).

3. Access to Financing

Access to financing refers to the ease with which firms can obtain capital to support their operations, investments, and expansion, serving as a critical factor in business growth and sustainability. Within the Resource-Based View (RBV) framework, financial capital is considered a key resource that provides a sustained competitive advantage when it is valuable, rare, and difficult to imitate (Barney, 1991). However, many Micro, Small, and Medium Enterprises (MSMEs), particularly in developing economies, face ongoing difficulties in accessing adequate financing due to stringent collateral requirements, limited credit history, and low levels of financial literacy (Beck & Demirguc-Kunt, 2006). These constraints limit MSMEs' ability to invest in innovation, technology, and human resources, which are essential for competitiveness (Yoshino & Taghizadeh-Hesary, 2018). Conversely, access to financial support enables firms to expand market operations, enhance production capacity, and strengthen long-term sustainability (Abor & Quartey, 2010). In Indonesia, government initiatives such as the Kredit Usaha Rakyat (KUR) program have been instrumental in improving MSME access to credit, though disparities persist between urban and rural enterprises (Wibowo & Rahayu, 2021). Empirical studies have confirmed that improved financial access positively affects firm performance, as easier access to credit boosts MSME growth, technological adoption, and resilience, while also fostering job creation (Nguyen et al., 2021; Brixiová & Kangoye, 2016).

4. Application of Digital Technology

Digital technology has revolutionized business operations by transforming production, marketing, and communication processes, with tools such as e-commerce platforms, cloud computing, and digital payment systems enabling Micro, Small, and Medium Enterprises (MSMEs) to expand market reach and improve operational efficiency. Brynjolfsson and McAfee (2014) emphasize that digitalization enhances productivity by reducing transaction costs and enabling data-driven decision-making. For MSMEs, digital transformation serves as a powerful equalizer, allowing smaller firms to compete with larger enterprises through greater visibility, accessibility, and customer engagement. Empirical studies show that digital adoption

significantly improves firm performance by fostering innovation and optimizing resources (Abubakar et al., 2019; Saleh & Burgess, 2020), while MSMEs that leveraged digital platforms during the COVID-19 pandemic demonstrated higher resilience in maintaining operations and customer access (OECD, 2021). In Indonesia, digital transformation has become a national priority under the Making Indonesia 4.0 roadmap, where MSMEs adopting digital tools experience notable gains in marketing efficiency, supply chain integration, and customer satisfaction (Pratama & Widodo, 2022). However, challenges such as low digital literacy, high internet costs, and inadequate infrastructure continue to hinder the widespread digital adoption necessary to fully realize the potential of digitalization among MSMEs.

5. Growth and Sustainability of MSMEs

MSME growth refers to the increase in business size, revenue, or market share over time, while sustainability emphasizes a firm's capacity to maintain competitive performance and adapt to environmental, economic, and social challenges. Based on the Triple Bottom Line framework (Elkington, 1997), sustainability requires balancing economic profitability, social responsibility, and environmental stewardship. For Micro, Small, and Medium Enterprises (MSMEs), achieving sustainability is essential for ensuring long-term survival and contributing to national development. Empirical evidence shows that MSME growth and sustainability are influenced by both internal resources and external environmental factors. Entrepreneurial orientation and innovation enhance business agility and adaptability, while access to financing and digital technology improve operational efficiency and enable market expansion. Studies have further demonstrated that MSMEs integrating entrepreneurial and digital strategies tend to achieve higher growth rates and sustain their operations even amid market uncertainties (Rahmawati et al., 2020; Wulandari & Suryanto, 2021).

Based on the literature, this study proposes a conceptual framework linking entrepreneurial orientation, innovation capabilities, access to financing, and digital technology application as independent variables influencing MSME growth and sustainability as dependent variables. Each variable is hypothesized to have a positive and significant relationship with growth and sustainability outcomes.

H1: Entrepreneurial orientation has a positive and significant effect on MSME growth and sustainability.

H2: Innovation capabilities have a positive and significant effect on MSME growth and sustainability.

H3: Access to financing has a positive and significant effect on MSME growth and sustainability.

H4: Application of digital technology has a positive and significant effect on MSME growth and sustainability.

C. METHODS

The research design used in this study is causal-explanatory, aiming to determine the cause-and-effect relationships between independent and dependent variables. Specifically, the study seeks to explain how entrepreneurial orientation, innovation capabilities, access to financing, and digital technology application contribute to MSME growth and sustainability. Data were collected through a structured questionnaire distributed to MSME owners and managers across several Indonesian provinces. The analysis was conducted using the Structural Equation Modeling–Partial Least Squares (SEM-PLS 3) approach, which is suitable for analyzing complex models involving multiple variables and indicators.

The population of this research includes all active Micro, Small, and Medium Enterprises (MSMEs) operating in Indonesia across various sectors such as manufacturing, trade, services, and food processing. Given the large and geographically dispersed nature of

the population, purposive sampling was employed to select respondents who met specific criteria: MSMEs that have been operating for at least two years, managed by owners or managers actively involved in strategic decision-making, and utilizing at least one form of digital technology such as digital marketing, e-commerce, or online financial management. Based on these criteria, a total of 175 valid responses were collected and analyzed. This sample size satisfies the minimum requirement for Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis, in line with Hair et al. (2021), who recommend that the minimum sample should exceed ten times the number of indicators used for the most complex construct in the model.

Data for this study were collected through a structured questionnaire distributed both online (via Google Forms and email) and offline (through MSME community organizations and business associations). The questionnaire employed a five-point Likert scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”) and was structured into three sections: Section A covered respondent profiles such as age, gender, education level, business type, and years of operation; Section B included questions related to independent variables—entrepreneurial orientation, innovation capabilities, access to financing, and digital technology application; and Section C focused on dependent variables, namely MSME growth and sustainability. Prior to distribution, a pilot test involving 30 MSME respondents was conducted to ensure the clarity, reliability, and validity of the questionnaire items, after which minor revisions were made to improve understanding and minimize ambiguity.

The data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS version 3.0 software, chosen for its suitability in handling small to medium sample sizes and complex models involving multiple latent variables. The analysis consisted of two main stages: the measurement model (outer model) and the structural model (inner model) evaluations. In the measurement model stage, reliability and validity were assessed by testing convergent validity using factor loadings (>0.7) and Average Variance Extracted (AVE >0.5), discriminant validity through the Fornell-Larcker criterion and cross-loadings, and reliability using Cronbach’s Alpha (>0.7) and Composite Reliability (>0.7). The structural model stage examined the relationships between latent variables and tested the research hypotheses. This included evaluating the explanatory power of the model using R^2 values, determining the significance of hypotheses through path coefficients and t-statistics obtained via bootstrapping with 5,000 resamples, and analyzing predictive relevance (Q^2) and Goodness of Fit (GoF) to assess the overall model quality.

D. RESULTS AND DISCUSSION

1. Descriptive Analysis

A total of 175 valid responses were collected from MSME owners and managers across several Indonesian provinces. The descriptive statistics provide an overview of the respondents’ demographic characteristics and business profiles.

Table 1. Demographic Sample

Profile	Category	Frequency (n=175)	Percentage (%)
Gender	Male	108	61.7%
	Female	67	38.3%
Age	20–30 years	42	24.0%
	31–40 years	71	40.6%
	41–50 years	45	25.7%
	>50 years	17	9.7%
Education	High School	28	16.0%
	Diploma	39	22.3%
	Bachelor’s Degree	86	49.1%

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	Master's Degree or higher	22	12.6%
Years in Operation	2–5 years	55	31.4%
	6–10 years	73	41.7%
	>10 years	47	26.9%
Business Sector	Manufacturing	41	23.4%
	Trade	68	38.9%
	Services	49	28.0%
	Food & Beverage	17	9.7%

The demographic profile of the respondents provides a comprehensive overview of the characteristics of the 175 MSME owners and managers who participated in this study. Male respondents constituted the majority with 108 individuals (61.7%), while female respondents accounted for 67 (38.3%), reflecting the continued dominance of male entrepreneurs in the MSME sector, though female participation remains noteworthy. Most respondents were between 31–40 years old (40.6%), followed by those aged 41–50 years (25.7%) and 20–30 years (24.0%), indicating that MSME management is primarily driven by individuals in their productive working years, who tend to possess both experience and adaptability to market dynamics. In terms of education, nearly half of the respondents held a bachelor's degree (49.1%), while 22.3% had a diploma, 16.0% completed high school, and 12.6% possessed a master's degree or higher, suggesting that most MSME actors have a solid educational background that supports effective managerial decision-making and openness to innovation. Regarding business experience, the majority of MSMEs had been operating for 6–10 years (41.7%), followed by 2–5 years (31.4%) and more than 10 years (26.9%), reflecting a level of maturity conducive to operational stability and growth. Sectorally, MSMEs were concentrated in trade (38.9%), followed by services (28.0%), manufacturing (23.4%), and food & beverage (9.7%), which aligns with Indonesia's service-oriented economic structure. Descriptive statistics of the main research variables are summarized below. The results show that respondents generally perceive all variables positively, with average scores above 4.0 on a 5-point Likert scale, indicating strong agreement with the statements provided.

Table 2. Descriptive Statistics

Variable	Mean	Standard Deviation	Interpretation
Entrepreneurial Orientation	4.23	0.52	High
Innovation Capabilities	4.18	0.55	High
Access to Financing	4.02	0.61	High
Application of Digital Technology	4.27	0.50	Very High
MSME Growth and Sustainability	4.20	0.53	High

The descriptive statistics in Table 2 show that all variables have mean scores above 4.00, indicating that respondents generally perceive their MSMEs to perform well across all dimensions. Entrepreneurial orientation (mean = 4.23; SD = 0.52) and innovation capabilities (mean = 4.18; SD = 0.55) are rated high, suggesting that MSME owners are proactive, innovative, and adaptive to market changes. Access to financing (mean = 4.02; SD = 0.61) also falls within the high category, though variability indicates that some firms still face funding constraints. The application of digital technology records the highest mean (4.27; SD = 0.50), categorized as very high, reflecting the strong adoption of e-commerce, digital payments, and online marketing. MSME growth and sustainability (mean = 4.20; SD = 0.53) also score high, signifying stable business performance and resilience. Overall, these results suggest that Indonesian MSMEs are increasingly adopting innovative, digital, and strategic approaches to maintain competitiveness and sustainable growth.

2. Reliability and Validity Testing (Measurement Model)

The measurement model was evaluated to ensure the reliability and validity of each construct. The analysis focused on factor loadings, Composite Reliability (CR), Cronbach's Alpha, and Average Variance Extracted (AVE).

Table 3. Measurement Model

Construct	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability (CR)	AVE
Entrepreneurial Orientation (EO)	EO1	0.841	0.875	0.909	0.715
	EO2	0.856			
	EO3	0.862			
	EO4	0.814			
Innovation Capabilities (IC)	IC1	0.837	0.868	0.906	0.706
	IC2	0.845			
	IC3	0.856			
	IC4	0.827			
Access to Financing (AF)	AF1	0.819	0.861	0.898	0.687
	AF2	0.844			
	AF3	0.835			
	AF4	0.803			
Application of Digital Technology (DT)	DT1	0.875	0.892	0.923	0.749
	DT2	0.883			
	DT3	0.854			
	DT4	0.842			
Growth and Sustainability (GS)	GS1	0.864	0.888	0.922	0.747
	GS2	0.872			
	GS3	0.857			
	GS4	0.866			

The results of the measurement model presented in Table 3 confirm that all constructs meet the reliability and validity requirements for further analysis. The factor loadings for all indicators range from 0.803 to 0.883, exceeding the recommended threshold of 0.70, which indicates strong indicator reliability and that each item effectively represents its corresponding construct. The Cronbach's Alpha values for all constructs—ranging from 0.861 to 0.892—surpass the minimum criterion of 0.70, demonstrating good internal consistency. Similarly, the Composite Reliability (CR) values, which range between 0.898 and 0.923, confirm that the constructs possess high reliability and measurement stability. Moreover, the Average Variance Extracted (AVE) values for all variables exceed 0.50, with scores between 0.687 and 0.749, indicating satisfactory convergent validity, as each construct explains more than half of the variance of its indicators. Overall, these results validate that the constructs of Entrepreneurial Orientation, Innovation Capabilities, Access to Financing, Application of Digital Technology, and Growth and Sustainability exhibit high reliability and validity, ensuring the robustness of the measurement model used in this study.

3. Structural Model and Hypothesis Testing

After validating the measurement model, the structural model was evaluated to examine the relationships among the latent variables using R^2 , Q^2 , and path coefficient values derived from bootstrapping with 5,000 subsamples. The R^2 value for MSME Growth and Sustainability was 0.684, indicating that 68.4% of the variance in this construct is explained by entrepreneurial orientation, innovation capabilities, access to financing, and digital technology application. This result demonstrates that the model possesses strong explanatory and predictive power, suggesting that these four factors collectively play a significant role in influencing the growth and sustainability of MSMEs.

Table 4. Hypothesis Testing

Hypothesis	Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Result
H1	Entrepreneurial Orientation → Growth and Sustainability	0.289	0.284	0.074	3.905	0.000	Supported
H2	Innovation Capabilities → Growth and Sustainability	0.254	0.259	0.079	3.215	0.001	Supported
H3	Access to Financing → Growth and Sustainability	0.213	0.216	0.072	2.958	0.003	Supported
H4	Digital Technology Application → Growth and Sustainability	0.317	0.322	0.068	4.662	0.000	Supported

The hypothesis testing results presented in the table indicate that all proposed relationships are statistically significant and supported. Entrepreneurial Orientation (H1) shows a positive and significant effect on MSME Growth and Sustainability with a path coefficient of 0.289 and a t-statistic of 3.905 ($p = 0.000$), suggesting that proactive, innovative, and risk-taking behaviors enhance MSME competitiveness and resilience. Innovation Capabilities (H2) also have a significant positive impact ($\beta = 0.254$, $t = 3.215$, $p = 0.001$), confirming that firms with strong innovation practices achieve better performance through product differentiation and adaptability to market changes. Access to Financing (H3) demonstrates a positive relationship ($\beta = 0.213$, $t = 2.958$, $p = 0.003$), indicating that the availability of financial resources enables MSMEs to invest in technology, human capital, and product development, thereby strengthening growth and sustainability. The Application of Digital Technology (H4) exhibits the strongest influence among all variables ($\beta = 0.317$, $t = 4.662$, $p = 0.000$), emphasizing that digital adoption, such as e-commerce, online marketing, and digital payments, plays a crucial role in improving operational efficiency, expanding market reach, and maintaining business continuity. Collectively, these results highlight that entrepreneurial orientation, innovation capability, financial access, and digital technology integration are key determinants driving the sustainable growth of MSMEs in Indonesia.

The empirical findings highlight the multifaceted nature of MSME growth and sustainability, where entrepreneurial, innovative, financial, and technological factors interact synergistically to enhance business performance. Entrepreneurial orientation emerges as a significant driver of MSME growth and sustainability, supporting previous studies by Rauch et al. (2009) and Putra et al. (2022), which indicate that proactive, innovative, and risk-taking firms are more likely to seize new opportunities and sustain competitiveness. In Indonesia's dynamic business environment, a strong entrepreneurial orientation enables MSMEs to respond swiftly to market changes, develop adaptive strategies, and secure long-term growth.

Innovation capability also plays a critical role in shaping MSME competitiveness. Firms that consistently develop new products, improve internal processes, and leverage creativity are better equipped to adapt to market fluctuations and meet evolving customer demands. This aligns with Damanpour (1991) and Zehir et al. (2015), who argue that innovation strengthens resilience and long-term profitability. For Indonesian MSMEs, continuous innovation supports differentiation and market expansion beyond local boundaries, fostering both sustainability and growth. Access to financing further enhances MSME development, as confirmed by Beck & Demircuc-Kunt (2006) and Nguyen et al. (2021), who found that adequate funding enables investment in technology, capacity building, and productivity improvement. Although initiatives such as the Kredit Usaha Rakyat (KUR) program have expanded credit access, challenges remain in the form of collateral constraints and limited financial literacy, emphasizing the importance of inclusive financial systems.

The application of digital technology demonstrates the strongest influence on MSME growth and sustainability. This finding aligns with Brynjolfsson & McAfee (2014) and OECD (2021), who highlight that digital adoption enhances operational efficiency, market access, and customer engagement. Indonesian MSMEs utilizing e-commerce platforms, online payment systems, and digital marketing tools have shown remarkable adaptability, particularly during economic disruptions such as the COVID-19 pandemic. Digitalization thus serves as a key enabler of business resilience and competitiveness in the industry 4.0 era. Overall, the study concludes that entrepreneurial orientation, innovation capability, access to financing, and digital technology collectively reinforce MSME growth and sustainability. Consequently, policy initiatives should prioritize strengthening entrepreneurial education, fostering innovation ecosystems, broadening financial access, and accelerating digital transformation to ensure the continued resilience and contribution of MSMEs to Indonesia's economic development.

E. CONCLUSION

The findings of this study confirm that entrepreneurial orientation, innovation capabilities, access to financing, and the application of digital technology are critical determinants of MSME growth and sustainability in Indonesia. Entrepreneurial orientation fosters proactive decision-making and market responsiveness, while innovation capabilities enhance firms' adaptability and competitiveness. Access to financing serves as a key enabler, providing essential capital for expansion, modernization, and long-term survival, whereas the adoption of digital technology amplifies these effects by boosting productivity, customer engagement, and operational efficiency. From a policy standpoint, these results emphasize the need for integrated support systems that promote entrepreneurship, innovation, financial inclusion, and digital transformation. Collaboration among government institutions, financial intermediaries, and technology providers is vital to create an ecosystem that strengthens MSME competitiveness and resilience. For practitioners, the study highlights the importance of continuous learning, innovation-driven strategies, and active participation in digital platforms to ensure business growth in an increasingly digitalized economy. Future research could broaden the analysis by comparing different industrial sectors or incorporating moderating factors such as government policy and market dynamics to deepen understanding of MSME sustainability in developing economies.

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