Research Article

Digital Entrepreneurship Readiness, Innovation Mindset, and Sustainable Business Performance: Unraveling the Mediating Role of Market Orientation

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Abstract

This study examines the effects of digital entrepreneurship readiness and innovation mindset on sustainable business performance, with market orientation serving as a mediating mechanism. The study is motivated by the persistent challenge faced by Micro, Small, and Medium Enterprises (MSMEs) in transforming digital adoption and innovative capabilities into sustainable performance outcomes. Although previous studies have highlighted the importance of digital readiness and innovation, limited research has explained the mechanism through which these resources contribute to sustainability, particularly among MSMEs in developing economies. A quantitative approach was employed using survey data collected from 110 MSMEs in Kendal Regency, Indonesia. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with WarpPLS 8.0. The findings reveal that digital entrepreneurship readiness and innovation mindset positively and significantly influence market orientation and sustainable business performance. Furthermore, market orientation partially mediates the relationships between digital entrepreneurship readiness, innovation mindset, and sustainable business performance. This study contributes theoretically by extending the Resource-Based View and Dynamic Capability perspectives through the integration of digital resources, cognitive capabilities, and market-oriented mechanisms. Practically, the findings suggest that MSME owners and policymakers should strengthen digital capability development and innovation-oriented strategies to achieve long-term business sustainability.

Keywords: Digital Entrepreneurship Readiness, Innovation Mindset, Market Orientation, Sustainable Business Performance, MSMEs

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1. Introduction

Sustainable business performance has emerged as a central concern in contemporary strategic management and entrepreneurship literature (Cahyo et al., 2024; Larbi-Siaw et al., 2022).This concept underscores a firm's capacity to achieve equilibrium among economic, social, and environmental performance over the long-term, commonly referred to as the Triple Bottom Line. In the current digital era, the challenge of attaining sustainable performance has grown increasingly complex, as firms must rapidly adapt to technological shifts, evolving consumer preferences, and dynamic global market conditions (Mehmood et al., 2026). Failure to adapt not only threatens business continuity but also widens the competitiveness gap between small enterprises and large corporations that have already undergone digital transformation.

As one of the largest economies in Southeast Asia, Indonesia faces significant challenges in promoting business sustainability among micro, small, and medium enterprises (MMSMEs). According to Kementerian Koordinator Bidang Perekonomian (2025), Indonesia has more than 64 million MMSMEs, contributing over 60% of national GDP and absorbing nearly 97% of the workforce. Despite their substantial economic contribution, MMSMEs continue to face challenges in maintaining business con-

tinuity and sustaining their performance amid changing market conditions. These challenges have also been highlighted in discussions of MSME business failures and survival in Indonesia. This situation underscores the importance of understanding the factors that enable MMSMEs to maintain sustainable business performance over the long term.

Kendal Regency provides a relevant context for examining this phenomenon, given the ongoing digital transformation of its MSME sector. Located along the Pantura economic corridor in Central Java, Kendal has experienced increasing efforts to integrate digital technology into MSME activities. According to Ayo Semarang (2024) citing information from the Kendal Regency Government, 6,061 MMSMEs in Kendal Regency had been integrated with e-commerce by the end of 2023. This development indicates substantial progress in the adoption of digital platforms among local MMSMEs. However, the integration of MMSMEs into e-commerce does not necessarily indicate comprehensive digital readiness, as digital entrepreneurship requires not only the adoption of digital platforms but also the capability to effectively utilize digital technologies, information, and market insights in business decision-making. Therefore, an important issue is whether digital entrepreneurship readiness can be effectively translated into sustainable business performance. This study argues that market orientation may serve as a strategic mechanism through which digital readiness and an innovation mindset contribute to sustainable business performance.

Digital entrepreneurship readiness has emerged as a critical determinant of MSME competitiveness in the fourth industrial revolution by enabling firms to integrate digital technologies into entrepreneurial activities, operational processes, and strategic decision-making (Cahyo et al., 2026; Herman, 2022; Xu et al., 2022). From the Resource-Based View (RBV) perspective, digital readiness represents a valuable intangible capability because it reflects an organization's ability to acquire, utilize, and transform digital resources into competitive advantages. Digital readiness encompasses technological knowledge, digital skills, and organizational capability to leverage digital technologies for creating, managing, and scaling business ventures (Trequattrini et al., 2026).Recent empirical studies have demonstrated that digital readiness positively contributes to business performance by improving operational efficiency, customer engagement, innovation capability, and market responsiveness (Alqam et al., 2025; Novicka, 2025; Xu et al., 2022).

However, previous studies have primarily examined the direct relationship between digital readiness and business performance outcomes. For example, Alqam et al. (2025) investigated the effect of digital adoption on MSME performance, while Xu et al. (2022) emphasized the role of digital capability in enhancing entrepreneurial outcomes. Although these studies provide important insights, they provide limited explanation regarding the mechanism through which digital readiness is transformed into sustainable business performance. Particularly among MMSMEs in developing economies, digital technology adoption does not automatically generate sustainability benefits unless firms possess strategic capabilities that enable them to interpret market changes and respond effectively. Therefore, this study proposes market orientation as an important mediating mechanism that explains how digital entrepreneurship readiness contributes to sustainable business performance.

Innovation mindset represents another critical strategic resource that enables entrepreneurs to identify opportunities, develop creative solutions, and adapt business strategies in dynamic environments (Cahyo et al., 2026; Yousef Farhan, 2024). Based on the Resource-Based View (RBV), innovation mindset can be considered an intangible capability embedded in entrepreneurial cognition, organizational learning, and continuous improvement processes. Entrepreneurs with a strong innovation mindset tend to explore new opportunities, develop value -added propositions, and create innovative products or processes that support long-term competitiveness (Jaaffar et al., 2024). Recent empirical studies indicate that innovation mindset contributes to improved business performance by fostering innovation capability, creativity, strategic adaptability, and the development of innovative products and processes (Jaaffar et al., 2024; Yousef Farhan, 2024). Nevertheless, previous research has largely focused on the direct influence of innovation mindset on innovation outcomes or entrepreneurial performance. Limited studies have investigated how innovation mindset is converted into sustainable business performance through organizational mechanisms. An innovation mindset without strategic market understanding may result in fragmented innovations that fail to address customer needs. Therefore, market orientation becomes essential because

it enables firms to align innovative ideas with market intelligence, customer expectations, and competitive conditions.

Market orientation functions as a strategic capability that connects internal organizational resources with external market opportunities (Cuevas-Vargas et al., 2022; Stocker et al., 2021). According to the Dynamic Capability perspective, market orientation enables firms to sense market changes, interpret customer needs, and reconfigure resources to achieve sustainable competitive advantages. The concept emphasizes a firm's ability to generate, disseminate, and respond to market intelligence effectively (Elgarhy & Abou-Shouk, 2023). Digital entrepreneurship readiness is expected to enhance market orientation because digital technologies provide MMSMEs with access to real-time market information, consumer behavior analysis, and competitive intelligence (Cruz Rincon et al., 2023). Similarly, innovation mindset encourages entrepreneurs to actively utilize market information to develop relevant products and create customer-oriented value propositions. Thus, market orientation serves as a transmission mechanism that transforms digital resources and innovative capabilities into sustainable business performance.

Market orientation has been consistently established as a significant predictor of competitive advantage and sustainable business performance (Cruz Rincon et al., 2023; Stocker et al., 2021). Nevertheless, empirical studies examining the mediating role of market orientation in the relationships among digital entrepreneurship readiness, innovation mindset, and sustainable business performance remain notably absent. For instance, Alqam et al. (2025) examined only the direct link between digital adoption and MSME profitability without incorporating mediating mechanisms. Meanwhile, Herman (2022) focused on digital startups characterized by fundamentally different attributes from conventional MMSMEs operating in semi-urban settings such as Kendal. To date, no study has simultaneously investigated how digital entrepreneurship readiness and innovation mindset influence sustainable business performance through market orientation among MMSMEs in Indonesia.

Although previous studies have established the importance of digital readiness, innovation mindset, and market orientation in improving entrepreneurial performance, several gaps remain. First, existing research has predominantly examined direct relationships between digital capability or innovation capability and business performance, while the mediating mechanism explaining how these capabilities generate sustainability outcomes remains underexplored. Second, previous studies have often focused on technologically advanced firms or digital startups, whereas conventional MMSMEs in developing and semi urban contexts face different challenges in converting digital resources into sustainable growth. Third, limited empirical evidence exists regarding the simultaneous influence of digital entrepreneurship readiness and innovation mindset through market orientation in the MSME context. Therefore, this study addresses these gaps by developing an integrated model that examines how digital entrepreneurship readiness and innovation mindset influence sustainable business performance through market orientation as a mediating mechanism among MMSMEs in Indonesia.

2. Literature Review

2.1. Resource-Based View (RBV)

This study is anchored in the Resource-Based View (RBV), which explains how firm-specific resources and capabilities can serve as sources of sustained competitive advantage (Barney, 1991). RBV posits that firms achieve sustained competitive advantage through resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Unlike traditional industrial organization (IO) economics that emphasizes external market positioning (Abrokwah-Larbi, 2024), RBV shifts the focus inward, arguing that heterogeneous resource endowments across firms explain performance differences (Barney, 1991). In entrepreneurship, intangible resources such as knowledge, cognitive capabilities, and organizational routines play an important role because they are developed through unique experiences and internal processes. These characteristics make such resources difficult for competitors to imitate and become an important source of sustained competitive advantage (Abrokwah-Larbi, 2024; Barney, 1991).

Within the digital entrepreneurship domain, digital entrepreneurship readiness constitutes a valuable intangible resource encompassing digital knowledge, technical skills, adaptive capabilities, and

technological infrastructure. Similarly, innovation mindset represents a cognitive resource that enables entrepreneurs to identify opportunities, generate novel solutions, and navigate uncertainty (Abrokwah-Larbi, 2024; Barney, 1991). According to RBV logic, these resources, when properly developed and deployed, contribute to sustainable business performance by creating competitive advantages that are valuable to customers and difficult for competitors to imitate (Barney, 1991).

2.2. Dynamic Capability Perspective

However, although RBV provides a strong explanation regarding what resources contribute to competitive advantage, it has been criticized for providing a relatively static view of how firms renew and transform their resources in response to environmental changes (Gerhart & Feng, 2021; Zahra, 2021). In dynamic business environments characterized by technological disruption and changing market conditions, valuable resources alone may not be sufficient to achieve sustainable performance. Firms must possess the capability to continuously integrate, adapt, and reconfigure their resources to respond effectively to emerging opportunities.

To address this limitation, this study incorporates the Dynamic Capability perspective, initially articulated by Teece et al. (1997) and subsequently further developed by Teece (2007) which explains how firms develop the ability to sense environmental changes, seize emerging opportunities, and transform or reconfigure their resources to maintain competitiveness over time.

In the context of digital entrepreneurship among MMSMEs, Dynamic Capability provides a relevant perspective for explaining how digital entrepreneurship readiness and innovation mindset generate sustainable business performance. Digital entrepreneurship readiness enables firms to identify and utilize digital opportunities, while innovation mindset supports learning, experimentation, and strategic adaptation. However, these resources require market-oriented mechanisms to create value. Therefore, market orientation represents a market-based dynamic capability that enables firms to generate market intelligence, understand customer needs, respond to competitive changes, and transform internal resources into sustainable business performance (Teece, 2007; Teece et al., 1997). Accordingly, this study integrates RBV and Dynamic Capability perspectives by positioning digital entrepreneurship readiness and innovation mindset as strategic resources, while market orientation functions as the capability mechanism that transforms these resources into sustainable business outcomes.

2.3. Digital Entrepreneurship Readiness

Digital entrepreneurship readiness refers to the degree to which individuals or organizations are prepared to leverage digital technologies for initiating, managing, and developing entrepreneurial ventures (Alqam et al., 2025; Trequattrini et al., 2026).This multidimensional construct encompasses five key components adapted from (Mamat et al., 2023; Trequattrini et al., 2026): (a) digital knowledge understanding of digital tools, platforms, and ecosystems; (b) technical skills proficiency in using digital applications for business operations; (c) digital attitude positive orientation toward technology adoption and change; (d) digital adaptability capacity to adjust to technological disruptions; and (e) digital infrastructure availability of technological resources and connectivity.

From an RBV perspective, digital entrepreneurship readiness represents a valuable intangible resource because it is embedded in individual knowledge and organizational routines, making it difficult for competitors to replicate (Barney, 1991). Firms with higher digital readiness can leverage technology to enhance operational efficiency, expand market reach, and create differentiated value propositions. Previous research has established that digital readiness significantly influences entrepreneurial attitudes (Mehmood et al., 2026), MSME preparedness for Industry 4.0 (Novicka, 2025), and entrepreneurial capability development (Cruz Rincon et al., 2023). However, the direct and indirect effects of digital entrepreneurship readiness on sustainable business performance remain underexplored, particularly in developing country contexts

2.4. Innovation Mindset

Innovation mindset is conceptualized as a cognitive framework that predisposes individuals toward creative thinking, opportunity recognition, and value creation (Mirhabibi et al., 2025).This construct

encompasses five interrelated dimensions: (a) creativity, referring to the ability to generate novel and useful ideas; (b) openness to change, reflecting the willingness to embrace new approaches and abandon outdated practices; (c) opportunity orientation, which reflects the ability to identify and respond to emerging market opportunities; (d) risk tolerance, referring to the willingness to undertake calculated risks in pursuing entrepreneurial activities; and (e) continuous learning, which represents a commitment to continuously acquiring knowledge and developing relevant skills (Jaaffar et al., 2024; Maziriri et al., 2024).

Within the RBV framework, innovation mindset constitutes a valuable cognitive resource that is socially complex and causally ambiguous characteristics that make it a source of sustained competitive advantage (Barney, 1991). Individuals with strong innovation mindsets are more likely to explore novel opportunities, embrace change, and engage in creative problem-solving, all of which are essential for achieving superior performance in dynamic market environments (Yousef Farhan, 2024). Empirical evidence supports this view. Maziriri et al. (2024) demonstrated that innovation mindset significantly predicts women's entrepreneurial success in South Africa. Furthermore, Alkhalaileh and Qasim (2026) found that innovation mindset mediates the relationship between AI literacy and e-entrepreneurial intention.

2.5. Market Orientation

Market orientation is a foundational concept in strategic marketing literature emphasizing the creation of superior customer value through deep understanding of market needs (Elgarhy & Abou-Shouk, 2023; Stocker et al., 2021). Two complementary conceptualizations dominate the literature. (Cruz Rincon et al., 2023) proposed three behavioral components: (a) customer orientation understanding target customers' needs and preferences; (b) competitor orientation understanding competitors' strategies and capabilities; and (c) interfunctional coordination integrating organizational efforts to create customer value. (Irfandi et al., 2024) emphasized market intelligence processes: (a) intelligence generation collecting market information; (b) intelligence dissemination sharing information across departments; and (c) responsiveness acting upon market intelligence.

From a dynamic capabilities perspective, market orientation functions as an organizational capability that enables firms to sense market changes, seize emerging opportunities, and transform their value propositions accordingly (Cuevas-Vargas et al., 2022; Irfandi et al., 2024). This capability is particularly crucial for MMSMEs operating in digital ecosystems, where market conditions evolve rapidly and customer preferences shift continuously (Elgarhy & Abou-Shouk, 2023). In the RBV framework, market orientation can be viewed as a capability that transforms resource endowments (digital readiness, innovation mindset) into performance outcomes (Cruz Rincon et al., 2023).Meta-analytic evidence confirms that market orientation positively affects profitability, sales growth, customer loyalty, and innovation performance (Cruz Rincon et al., 2023; Cuevas-Vargas et al., 2022).

2.6. Sustainable Business Performance

Sustainable business performance refers to an organization's ability to achieve and maintain balanced outcomes across economic, social, and environmental dimensions over the long-term (Agu et al., 2024; Stocker et al., 2021). Drawing from the Triple Bottom Line (TBL) framework, this construct encompasses: (a) economic performance profitability, revenue growth, market share, and operational efficiency; (b) social performance employee well-being, community engagement, ethical practices, and stakeholder satisfaction; and (c) environmental performance resource efficiency, waste reduction, carbon footprint minimization, and ecological sustainability (Joyce & Paquin, 2016; Larbi-Siaw et al., 2022)

Within the RBV perspective, sustainable business performance represents the outcome of effectively leveraging VRIN resources and capabilities. Firms that develop superior digital readiness, innovation mindset, and market orientation are better positioned to achieve balanced performance across the three TBL dimensions (Yousef Farhan, 2024). Contemporary research emphasizes that digital transformation accelerates progress toward sustainability goals while creating economic value (Xu et al., 2022). Mehmood et al. (2026) and Novicka (2025) demonstrated that sustainable practices enhance company identification and stakeholder loyalty, contributing to long-term performance. However, empirical stud-

ies examining the antecedents of sustainable business performance among MMSMEs in developing economies remain scarce, particularly those integrating digital readiness and cognitive factors.

2.7. Hypothesis Development

2.7.1 Digital Entrepreneurship Readiness and Market Orientation

From an RBV perspective, digital entrepreneurship readiness constitutes a valuable resource that enables firms to access, process, and utilize market information more effectively (Barney, 1991). Organizations with higher digital readiness are better positioned to collect customer data through digital platforms, analyze market trends using analytical tools, and monitor competitor activities in real-time (Liyanaarachchi et al., 2021). Digital technologies facilitate intelligence generation by enabling systematic data collection from diverse sources, including social media, e-commerce platforms, and customer relationship management systems (Trequattrini et al., 2026).

Furthermore, digital readiness enhances firms' sensing capabilities the ability to identify and assess market opportunities (Alqam et al., 2025) Entrepreneurs with strong digital readiness can leverage digital tools to conduct market research, analyze customer feedback, and detect emerging trends, thereby strengthening their market orientation (Mirhabibi et al., 2025). Digital readiness also facilitates intelligence dissemination by enabling efficient information sharing across organizational functions through digital communication channels. Empirical evidence by (Liyanaarachchi et al., 2021) supports the positive relationship between digital readiness and market-focused capabilities. Thus:

H1: Digital entrepreneurship readiness has a positive effect on market orientation

2.7.2 Innovation Mindset and Market Orientation

Innovation mindset, characterized by openness to new ideas, creativity, and continuous learning, constitutes a cognitive resource that predisposes entrepreneurs to actively seek market information, explore novel opportunities, and develop responsive strategies (Jaaffar et al., 2024). According to RBV, such cognitive resources are valuable because they enable entrepreneurs to perceive market opportunities that others might overlook (Barney, 1991). Individuals with an innovation mindset are more likely to question existing assumptions, challenge conventional wisdom, and search for unmet customer needs all central to market orientation (Jaaffar et al., 2024)

An innovation mindset encourages entrepreneurs to embrace new ideas, recognize emerging opportunities, and respond proactively to environmental changes. Entrepreneurs with a stronger innovation mindset are therefore more likely to acquire and interpret market information and translate it into innovative responses to changing customer needs. Prior research also demonstrates that an innovative mindset facilitates innovative behavior and enhances innovation-related outcomes among MSME owner-managers (Jaaffar et al., 2024). Accordingly, an innovation mindset is expected to strengthen MMSMEs' ability to develop a market-oriented approach. Therefore:

H2: Innovation mindset has a positive effect on market orientation

2.7.3 Digital Entrepreneurship Readiness and Sustainable Business Performance

According to RBV, digital entrepreneurship readiness represents a valuable resource that directly contributes to firm performance when effectively deployed (Barney, 1991). Digital technologies enable process automation, reducing operational costs and improving productivity, thereby enhancing economic performance (Mirhabibi et al., 2025). Digital platforms facilitate broader market access, enabling MMSMEs to reach new customers and generate additional revenue streams (Alqam et al., 2025). From a Triple Bottom Line perspective, digital readiness contributes to environmental performance through resource-efficient operations, paperless processes, and optimized logistics (Mamat et al., 2023).Social performance is enhanced through digital tools that improve stakeholder communication, facilitate employee training, and enable community engagement (Mamat et al., 2023). Empirical evidence supports this direct link. (Alqam et al., 2025; Mamat et al., 2023; Mirhabibi et al., 2025) found that digital

readiness positively impacts MMSMEs' operational and market performance. Mirhabibi et al. (2025) confirmed that digital entrepreneurship readiness enhances entrepreneurial capabilities. Based on this reasoning:

H3: Digital entrepreneurship readiness has a positive effect on sustainable business performance

2.7.4 Innovation Mindset and Sustainable Business Performance

Innovation mindset, as a cognitive resource within the RBV framework, supports entrepreneurs' ability to recognize opportunities, generate innovative ideas, and adapt to changing business environments. A strong innovation mindset reflects greater openness to new opportunities, innovative thinking, and adaptation in entrepreneurial contexts (Alkhalaileh & Qasim, 2026; Yodchai et al., 2022). These cognitive capabilities can enable entrepreneurs to continuously improve products, processes, and business practices in response to changing market conditions, thereby supporting long-term business performance. From a sustainability perspective, an innovation mindset may contribute to sustainable business performance by encouraging entrepreneurs to continuously seek new solutions, adapt their business practices, and create value in response to changing market and stakeholder demands. Empirical evidence indicates that innovation-oriented thinking is associated with entrepreneurial success and innovation performance (Alkhalaileh & Qasim, 2026; Jaaffar et al., 2024). Therefore, entrepreneurs with stronger innovation mindsets are expected to be better positioned to achieve sustainable business performance. Thus:

H4: Innovation mindset has a positive effect on sustainable business performance

2.7.5 Market Orientation and Sustainable Business Performance

Market orientation, viewed as a dynamic capability within the RBV framework, enables firms to understand and respond to customer needs effectively, identify new market opportunities, and develop strategies aligned with sustainability demands (Barney, 1991; Zahra, 2021). Market-oriented firms are better positioned to detect shifts in customer preferences toward sustainable products, anticipate regulatory changes related to environmental standards, and respond to stakeholder expectations for corporate social responsibility (Bicen et al., 2021; Elgarhy & Abou-Shouk, 2023).

Customer orientation drives the development of products meeting sustainability preferences, enhancing customer satisfaction and loyalty (Liyanaarachchi et al., 2021). Competitor orientation enables benchmarking against industry best practices in sustainability Interfunctional coordination ensures sustainability considerations are integrated across all organizational functions. Meta-analytic evidence confirms that market orientation positively affects multiple performance indicators (Elgarhy & Abou-Shouk, 2023). (Elgarhy & Abou-Shouk, 2023; Stocker et al., 2021) demonstrated that market orientation enhances marketing capabilities, improving firm performance. Therefore:

H5: Market orientation has a positive effect on sustainable business performance

2.7.6 The Mediating Role of Market Orientation

Drawing upon RBV Barney (1991) complemented by Dynamic Capabilities logic (Hock-Doepgen et al., 2021) we propose that market orientation serves as a mediating mechanism through which digital entrepreneurship readiness and innovation mindset influence sustainable business performance. RBV establishes that digital entrepreneurship readiness and innovation mindset are valuable intangible resources (Barney, 1991). However, resources alone are insufficient for superior performance they must be effectively leveraged through organizational capabilities (Hanaysha et al., 2022).

Market orientation functions as a dynamic capability that enables firms to sense market opportunities, seize them through resource mobilization, and transform organizational processes to sustain competitive advantage (Stocker et al., 2021). Digital entrepreneurship readiness enhances firms' ability to generate, disseminate, and respond to market intelligence through digital tools (Mehmood et al., 2026). Innovation mindset fosters the cognitive flexibility needed to interpret market information and develop innovative

responses Cahyo et al. (2026). Without adequate market orientation, the potential of digital readiness and innovation mindset may remain underutilized. This partial mediation hypothesis is consistent with research demonstrating that organizational capabilities mediate the relationship between resource endowments and performance outcomes (Cruz Rincon et al., 2023) confirmed the mediating role of intervening mechanisms in resource-performance linkages. Therefore:

H6: Market orientation mediates the effect of digital entrepreneurship readiness on sustainable business performance

H7: Market orientation mediates the effect of innovation mindset on sustainable business performance

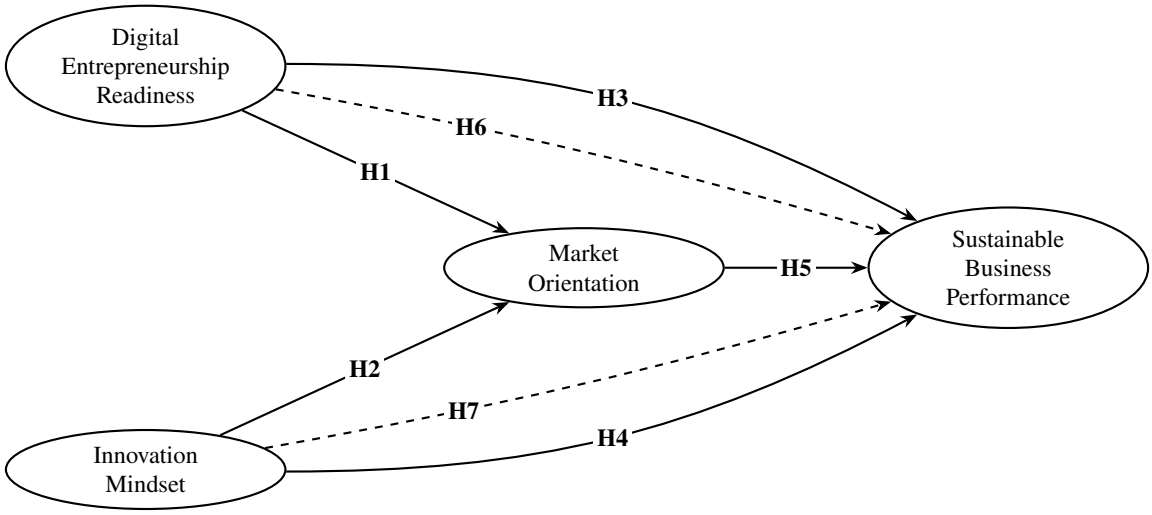


Figure 1. Research Model

3. Research Method

This study employs a quantitative approach with a cross-sectional explanatory research design to examine the relationships among digital entrepreneurship readiness, innovation mindset, market orientation, and sustainable business performance through hypothesis testing and statistical analysis. Because the data were collected at a single point in time, the estimated paths are interpreted as statistical associations consistent with the theoretical model rather than as proof of causation. The target population comprises MMSMEs in Kendal Regency that have adopted digital technology in their business activities. According to Ayo Semarang (2024) citing information from the Kendal Regency Government, 6,061 MMSMEs in Kendal Regency had been integrated with e-commerce by the end of 2023. This figure provides contextual evidence of digital technology adoption among MMSMEs in the region, particularly in electronic commerce, and supports the selection of Kendal Regency as the empirical setting for this study. Although an official statistical publication directly reporting this figure was not available, the data reported by Ayo Semarang (2024) were used solely as contextual evidence of e-commerce adoption among MMSMEs in Kendal Regency. This figure was not used as the sampling frame, as respondents were selected through purposive sampling based on predefined eligibility criteria.

In this study, digital technology adoption is broadly understood as the use of digital platforms for marketing and/or business operations. Therefore, MMSMEs integrated with e-commerce represent one segment of digitally engaged MMSMEs, while the sample eligibility criteria encompass MMSMEs that use digital platforms for marketing or operational purposes. Given the specific characteristics required of the respondents, this study employed purposive sampling based on the following criteria:

- MMSMEs that have been operating for at least two years;
- MMSMEs that utilize digital platforms for marketing or business operations;
- MSME owners who possess a basic understanding of digital technology and entrepreneurship; and

- Respondents who are business owners directly involved in business management and strategic decision-making.

Hair, Hult, et al. (2014) suggest that the sample size in a study should be at least 100 respondents. Furthermore, the sample size should be 5 to 10 times the number of indicator items to be analyzed. In this study, there are 20 indicator items, thus the minimum sample size used by the researcher is 20 indicator items multiplied by 5, yielding a minimum of 100 samples. To enhance statistical power, this study targeted 110 respondents. The questionnaire was developed and administered in the Indonesian language to ensure that respondents could clearly understand each measurement item and minimize potential misunderstanding during the response process. From 150 questionnaires distributed both offline through direct visits to MSME locations and online via Google Forms, 122 questionnaires were returned and 110 were deemed valid for analysis. Data collection was conducted over three months, from May to July 2026.

The research data uses primary data obtained directly by the researcher (Cooper & Schindler, 2019). Primary data were obtained through distributing questionnaires offline and online to respondents, where online distribution was conducted via Google Forms. The results of the questionnaire distribution were then classified into a modified Likert scale to facilitate data processing and analysis. The Likert scale in this study is as follows: point 5 for Strongly Agree (SA), point 4 for Agree (A), point 3 for Neutral (N), point 2 for Disagree (D), and point 1 for Strongly Disagree (SD). Digital entrepreneurship readiness was measured through five indicators encompassing digital knowledge, technical digital skills, attitude toward digital technology, digital adaptability, and digital infrastructure, adapted from Mirhabibi et al. (2025). Innovation mindset was measured through five indicators encompassing creativity, openness to change, opportunity orientation, risk-taking willingness, and continuous learning, adapted from (Maziriri et al., 2024; Yodchai et al., 2022). Market orientation was measured through five indicators encompassing customer orientation, competitor orientation, interfunctional coordination, market intelligence generation, and market responsiveness, adapted from (Elgarhy & Abou-Shouk, 2023; Stocker et al., 2021). Sustainable business performance was measured through five indicators encompassing economic performance, operational efficiency, social performance, environmental efficiency, and waste management, adapted from (Agu et al., 2024; Stocker et al., 2021).

This study was tested statistically using WarpPLS version 8.0. PLS is characterized as the most suitable technique for research focused on prediction or exploratory modeling. PLS is a multivariate statistical analysis method that can be used for testing with multiple response variables and explanatory variables simultaneously (Hair et al., 2019). The analytical method employed is Partial Least Squares Structural Equation Modeling (PLS-SEM) using WarpPLS 8.0. PLS-SEM was selected because it is capable of analyzing complex relationships between latent variables, testing mediation models, and is suitable for relatively small to medium sample sizes as well as data that does not necessarily have to be normally distributed (Hair, Sarstedt, et al., 2014). The testing stages in WarpPLS include validity tests, reliability tests, model fit tests, and hypothesis tests. According to (Wong, 2013), validity testing can be conducted through convergent validity tests and discriminant validity tests. For convergent validity, if the loading factor value exceeds 0.7, the data can be considered valid.

The second criterion is the calculation of Average Variance Extracted (AVE) for each construct. If the AVE value is above 0.5, it can be concluded that the statement items of that variable are valid. The second stage is reliability testing, which can be conducted using the Construct Reliability method for each variable. This test focuses on the Cronbach's Alpha indicator. If the Cronbach's Alpha value exceeds 0.7, the data is considered reliable. Model fit testing uses goodness of fit indices by examining the Average Path Coefficient (APC) criterion, which aims to assess the magnitude of relationships between variables. APC is considered ideal if the p-value is less than 0.05; conversely, if the p-value exceeds 0.05, it can be considered not ideal. The Average R-squared (ARS) value indicates the magnitude of the exogenous, endogenous, and mediating variables. ARS is considered good if the p-value is less than 0.05. The Average Adjusted R-squared (AARS) value is used to assess the adjusted ARS. AARS is considered good if the p-value is less than 0.05, and once all tests are satisfied, hypothesis testing is subsequently conducted (Sholihin & Ratmono, 2021). Hypothesis testing was performed through a bootstrapping

procedure with 5,000 sub-samples to generate t-statistics and p-values at a significance level of $\alpha = 0.05$ (two-tailed), where hypotheses were accepted if the t-statistic value exceeded 1.96 and the p-value was less than 0.05 (Hair et al., 2013). Mediation analysis was conducted by examining the specific indirect effects and calculating the Variance Accounted For (VAF). VAF was calculated as the ratio of the indirect effect to the total effect, expressed as a percentage. The VAF approach was used to assess the extent to which the indirect effect accounted for the total effect, following (Sholihin & Ratmono, 2021).

4. Results and Discussion

4.1. Respondent Characteristics

This study utilized primary data obtained through the distribution of online questionnaires using the Google Forms platform. The total number of respondents collected in this study was 110 individuals. The respondents were classified into several main characteristics, namely status, gender, age group, study program, and digital platform usage. The details of these respondent characteristics can be seen in the following table:

Table 1. Demographic Characteristics of Respondents

Characteristic	Category	Frequency	Percentage (%)
Gender	Female	59	53.6
	Male	51	46.4
Age group	18–25 years	77	70.0
	26–35 years	27	24.5
	Above 35 years	6	5.5
Education level	High school/equivalent	31	28.2
	Diploma (D1–D4)	28	25.5
	Bachelor's degree (S1)	37	33.6
	Master's/doctoral degree (S2/S3)	14	12.7
Length of business operation	2–5 years	53	48.2
	6–10 years	37	33.6
	More than 10 years	20	18.2
Business sector	Culinary/food and beverage	30	27.3
	Fashion/apparel	22	20.0
	Services/digital services	18	16.4
	Handicrafts	16	14.5
	Trading/e-commerce	14	12.7
	Others	10	9.1
Primary digital platform used	Social media (Instagram, Facebook, TikTok)	35	31.8
	Marketplace (Shopee, Tokopedia, Lazada)	30	27.3
	Personal website	23	20.9
	Messaging apps (WhatsApp Business, Telegram)	22	20.0

Source: Processed data (2026)

Table 1 presents the demographic and business characteristics of the 110 respondents. Female respondents accounted for 53.6% of the sample, while male respondents represented 46.4%. In terms of age, the sample was predominantly composed of young entrepreneurs, with 70.0% aged 18–25 years, followed by those aged 26–35 years (24.5%) and above 35 years (5.5%). Regarding educational attainment, respondents with a bachelor's degree constituted the largest group (33.6%), followed by high school/equivalent graduates (28.2%), diploma holders (25.5%), and respondents with master's or doctoral degrees (12.7%).

Regarding business characteristics, 48.2% of the businesses had been operating for 2–5 years, 33.6%

for 6–10 years, and 18.2% for more than 10 years. Importantly, the reported length of business operation refers to the age of the business rather than the respondent's individual ownership or entrepreneurial tenure. Therefore, the respondent's age does not necessarily correspond directly to the number of years the business has been operating. This distinction is particularly important given the relatively young age profile of the sample.

The respondents represented diverse business sectors, with Culinary/F&B accounting for the largest proportion (27.3%), followed by Fashion/Apparel (20.0%), Services/Digital Services (16.4%), Handicrafts (14.5%), Trading/E-commerce (12.7%), and other sectors (9.1%). Regarding digital platform utilization, respondents were asked to identify the primary digital platform most frequently used in their business activities, rather than to report all digital platforms they used. Therefore, each respondent was classified into one platform category, resulting in a total frequency of 110 and a cumulative percentage of 100%. Social media platforms, including Instagram, Facebook, and TikTok, represented the most frequently reported primary platform (31.8%), followed by marketplaces such as Shopee, Tokopedia, and Lazada (27.3%), personal websites (20.9%), and messaging applications such as WhatsApp Business and Telegram (20.0%). This classification reflects the respondents' dominant digital platform and does not imply that they exclusively use a single digital platform in their business operations.

Overall, the sample reflects a predominantly young and digitally engaged group of business owners operating across diverse sectors. The distinction between respondent age and business age is maintained throughout the analysis to avoid interpreting the duration of business operation as the respondent's personal entrepreneurial tenure.

4.2. Descriptive Statistics

Table 2. Descriptive Statistics

Variable	*N*	Minimum	Maximum	Mean	Std. Deviation
DER	110	2	5	4.38	0.597
IM	110	2	5	4.46	0.586
MO	110	3	5	4.65	0.493
SBP	110	3	5	4.62	0.563

Source: Processed data (2026). DER = Digital Entrepreneurship Readiness; IM = Innovation Mindset; MO = Market Orientation; SBP = Sustainable Business Performance.

The descriptive statistics provide an initial overview of the respondents' perceptions of Digital Entrepreneurship Readiness (DER), Innovation Mindset (IM), Market Orientation (MO), and Sustainable Business Performance (SBP). Based on 110 valid observations, all constructs exhibited relatively high mean scores, ranging from 4.38 to 4.65 on a five-point scale. This pattern suggests that the respondents generally reported strong levels of digital entrepreneurial readiness, innovation-oriented thinking, market orientation, and sustainable business performance. Nevertheless, meaningful differences in the magnitude and dispersion of the scores can be observed across the four constructs.

Market Orientation (MO) recorded the highest mean score (M = 4.65, SD = 0.493), with observed scores ranging from 3 to 5. The combination of the highest mean and the lowest standard deviation indicates that market orientation represents the most strongly perceived and consistently reported construct among the respondents. This finding suggests that the respondents generally demonstrate a strong orientation toward understanding and responding to market dynamics, including customer needs and changes in the competitive environment. The relatively low dispersion further indicates a substantial degree of convergence in respondents' perceptions of market-oriented practices.

Sustainable Business Performance (SBP) exhibited the second-highest mean (M = 4.62, SD = 0.563), with scores ranging from 3 to 5. This result indicates that respondents generally perceived their sustainable business performance positively. Notably, the mean scores of MO and SBP are relatively close, suggesting that strong market orientation coexists with favorable perceptions of sustainable business performance within the sample. However, this descriptive pattern should not be interpreted as evidence of a causal

relationship. Whether market orientation contributes significantly to sustainable business performance must be established through subsequent inferential and structural model analyses.

Innovation Mindset (IM) yielded a mean score of 4.46 (SD = 0.586), with responses ranging from 2 to 5. Although the overall level of innovation mindset remains high, its relatively larger dispersion compared with MO indicates greater heterogeneity among respondents. The presence of a minimum score of 2 further suggests that innovation-oriented thinking is not equally developed across the sample. Thus, while most respondents appear receptive to innovation and new approaches, a segment of the sample may still exhibit comparatively limited innovation-related attitudes or capabilities.

Among the four constructs, Digital Entrepreneurship Readiness (DER) recorded the lowest mean and the highest standard deviation (M = 4.38, SD = 0.597), with scores ranging from 2 to 5. Importantly, the lower mean should be interpreted in relative rather than absolute terms, as a score of 4.38 on a five-point scale still represents a high level of digital entrepreneurship readiness. Nevertheless, compared with the other constructs, DER appears to be the least strongly established and the most heterogeneous capability among the respondents. This pattern may indicate that respondents' readiness to integrate digital technologies into entrepreneurial activities is less uniformly developed than their market orientation or perceived sustainable business performance.

A particularly noteworthy descriptive pattern is the difference between MO (M = 4.65) and DER (M = 4.38). The 0.27-point difference suggests that respondents' market-oriented capabilities are relatively more established than their readiness for digital entrepreneurship. Conceptually, this pattern implies that recognizing and responding to market opportunities does not necessarily coincide with an equivalent level of readiness to exploit those opportunities through digital entrepreneurial capabilities. Similarly, the mean score of IM (M = 4.46), which lies between DER and MO, highlights the potential strategic relevance of an innovation mindset in connecting digital readiness with market-responsive business practices. These interpretations, however, remain descriptive and should be empirically verified through hypothesis testing.

From a methodological perspective, the consistently high mean scores across all constructs warrant careful consideration. Means ranging from 4.38 to 4.65, accompanied by relatively modest standard deviations (0.493–0.597), indicate that responses are concentrated toward the upper end of the measurement scale. While this distribution may genuinely reflect highly developed capabilities among the sampled respondents, it may also indicate a potential ceiling effect or restricted variance. Such concentration can reduce the discriminatory power of the measurement instrument and potentially constrain the observed variability required to detect relationships among constructs.

Furthermore, if all constructs were measured using self-reported responses collected from the same respondents within a single survey, the uniformly high scores also warrant an assessment of potential common method variance and socially desirable responding. Consequently, the descriptive results should be interpreted alongside the assessment of measurement reliability, convergent and discriminant validity, common method bias, and the subsequent structural model results.

Overall, the descriptive statistics reveal a clear ordering across the four constructs: MO (M = 4.65) > SBP (M = 4.62) > IM (M = 4.46) > DER (M = 4.38). Market orientation emerges as the strongest and most consistently perceived construct, whereas digital entrepreneurship readiness, although still high in absolute terms, exhibits the lowest mean and greatest variability. This pattern suggests that strengthening digital entrepreneurial readiness and innovation-related capabilities may represent an important area for further development, particularly in translating strong market awareness into digitally enabled practices capable of supporting sustainable business performance. Nevertheless, these descriptive findings provide only preliminary evidence, and the proposed relationships among DER, IM, MO, and SBP should be validated through subsequent inferential and structural model analyses.

4.3. Measurement Model Evaluation

The convergent validity assessment based on the primary indicator loadings indicates that all measurement items adequately represent their respective constructs. As presented in Table 3, the indicator loadings range from 0.802 to 0.900, with all 20 indicators exceeding the recommended threshold of 0.70.

These results provide initial evidence of satisfactory indicator-level convergent validity.

For Digital Entrepreneurship Readiness (DER), the loadings range from 0.802 to 0.875, with DER5 recording the highest loading (0.875). Innovation Mindset (IM) demonstrates loadings ranging from 0.875 to 0.900, with IM3 exhibiting the highest loading (0.900). Market Orientation (MO) has loadings ranging from 0.835 to 0.875, with MO2 recording the highest loading (0.875). Meanwhile, Sustainable Business Performance (SBP) shows loadings ranging from 0.842 to 0.864, with SBP4 exhibiting the highest loading (0.864).

All indicators exceed the recommended loading threshold, and their associated *p*-values are below 0.001. Therefore, none of the indicators requires elimination based on insufficient loading. The cross-loading results also show that each indicator has a higher loading on its designated construct than on the other constructs, providing preliminary support for discriminant validity based on the cross-loading criterion.

At the construct level, convergent validity was further assessed using the Average Variance Extracted (AVE). As reported in Table 4, the AVE values are 0.732 for DER, 0.785 for IM, 0.730 for MO, and 0.729 for SBP. All values exceed the recommended minimum of 0.50, indicating that each construct explains more than half of the variance in its indicators. Taken together, the indicator loadings and AVE results support the convergent validity of the measurement model.

Table 3. Convergent Validity Results Based on Primary Loadings

Variable	Item	Loading Factor	Threshold	Result
Digital Entrepreneurship Readiness (DER)	DER1	0.802	≥ 0.70	Valid
	DER2	0.856	≥ 0.70	Valid
	DER3	0.868	≥ 0.70	Valid
	DER4	0.873	≥ 0.70	Valid
	DER5	0.875	≥ 0.70	Valid
Innovation Mindset (IM)	IM1	0.875	≥ 0.70	Valid
	IM2	0.891	≥ 0.70	Valid
	IM3	0.900	≥ 0.70	Valid
	IM4	0.881	≥ 0.70	Valid
	IM5	0.882	≥ 0.70	Valid
Market Orientation (MO)	MO1	0.835	≥ 0.70	Valid
	MO2	0.875	≥ 0.70	Valid
	MO3	0.855	≥ 0.70	Valid
	MO4	0.837	≥ 0.70	Valid
	MO5	0.870	≥ 0.70	Valid
Sustainable Business Performance (SBP)	SBP1	0.859	≥ 0.70	Valid
	SBP2	0.859	≥ 0.70	Valid
	SBP3	0.843	≥ 0.70	Valid
	SBP4	0.864	≥ 0.70	Valid
	SBP5	0.842	≥ 0.70	Valid

Source: Processed data (2026)

The measurement model was further evaluated using Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's Alpha. The results indicate that all constructs satisfy the recommended criteria for convergent validity and internal consistency reliability. The AVE values range from 0.729 to 0.785, exceeding the recommended minimum value of 0.50. This indicates that each latent construct explains a substantial proportion of the variance in its corresponding indicators and therefore demonstrates satisfactory convergent validity.

Among the constructs, Innovation Mindset (IM) exhibits the highest AVE (0.785), followed by Digital

Table 4. Convergent Validity and Reliability Results

Variable	AVE	Composite Reliability	Cronbach's Alpha	Result
Digital Entrepreneurship Readiness (DER)	0.732	0.932	0.908	Valid and reliable
Innovation Mindset (IM)	0.785	0.948	0.931	Valid and reliable
Market Orientation (MO)	0.730	0.931	0.908	Valid and reliable
Sustainable Business Performance (SBP)	0.729	0.931	0.907	Valid and reliable

Source: Processed data (2026)

Entrepreneurship Readiness (DER = 0.732), Market Orientation (MO = 0.730), and Sustainable Business Performance (SBP = 0.729). These values indicate that approximately 72.9%–78.5% of the variance in the indicators is captured by their respective latent constructs. Thus, all four constructs demonstrate strong convergence between the observed indicators and the underlying theoretical constructs.

The reliability assessment provides similarly strong results. Composite Reliability coefficients range from 0.931 to 0.948, while Cronbach's Alpha coefficients range from 0.907 to 0.931. Specifically, IM demonstrates the highest reliability (CR = 0.948; α = 0.931), followed by DER (CR = 0.932; α = 0.908), MO (CR = 0.931; α = 0.908), and SBP (CR = 0.931; α = 0.907). All coefficients substantially exceed the commonly accepted threshold of 0.70, demonstrating strong internal consistency among the indicators within each construct.

Taken together, the results provide robust evidence that DER, IM, MO, and SBP satisfy the requirements for convergent validity and internal consistency reliability. The consistently high AVE and reliability coefficients indicate that the measurement model is psychometrically adequate for subsequent analysis. However, the establishment of convergent validity and reliability alone does not confirm that the latent constructs are empirically distinct. Therefore, the measurement model should subsequently be evaluated for discriminant validity before interpreting the structural relationships among the constructs

4.4. Structural Model Fit

Table 5. Model Fit and Quality Indices

Index	Value	*P*-Value	Criteria	Information
Average Path Coefficient (APC)	0.366	<0.001	$P < 0.05$	Model accepted
Average R-squared (ARS)	0.470	<0.001	$P < 0.05$	Model accepted
Average Adjusted R-squared (AARS)	0.458	<0.001	$P < 0.05$	Model accepted
Average Block VIF (AVIF)	1.293	—	Acceptable if ≤ 5, ideally ≤ 3.3	Model accepted
Average Full Collinearity VIF (AFVIF)	1.732	—	Acceptable if ≤ 5, ideally ≤ 3.3	Model accepted
Tenenhaus GoF (GoF)	0.592	—	Small ≥ 0.1; medium ≥ 0.25; large ≥ 0.36	Model accepted (large)
Simpson's Paradox Ratio (SPR)	1.000	—	Acceptable if ≥ 0.7, ideally = 1	Model accepted
R-squared Contribution Ratio (RSCR)	1.000	—	Acceptable if ≥ 0.9, ideally = 1	Model accepted
Statistical Suppression Ratio (SSR)	1.000	—	Acceptable if ≥ 0.7	Model accepted
Nonlinear Bivariate Causality Direction Ratio (NLBCDR)	1.000	—	Acceptable if ≥ 0.7	Model accepted

Source: WarpPLS output (2026)

Model fit evaluation was conducted to ensure that the proposed model has adequate fit with the empirical data. Based on Table 5, all model fit indices meet the required criteria. The Average Path Coefficient (APC) value of 0.366 with P <0.001 indicates that all paths in the model are statistically significant. The Average R-squared (ARS) value of 0.470 and the Average Adjusted R-squared (AARS) value of 0.458 with P <0.001 indicate that the model has adequate predictive capability. All Variance Inflation Factor values are within acceptable limits. The Average Block VIF (AVIF) of 1.293 and the

Average Full Collinearity VIF (AFVIF) of 1.732 are both below the ideal threshold of 3.3, indicating that the model is free from multicollinearity issues.

The Tenenhaus Goodness of Fit (GoF) value of 0.592 falls into the large category (≥ 0.36), indicating that the model has excellent overall fit. Furthermore, all assumption testing ratios Simpson's Paradox Ratio (SPR), R-squared Contribution Ratio (RSCR), Statistical Suppression Ratio (SSR), and Nonlinear Bivariate Causality Direction Ratio (NLBCDR) — reached a value of 1.000, which exceeds the minimum acceptable thresholds. These results indicate that the model is free from Simpson's paradox, statistical suppression, and causality direction errors. Therefore, the model in this study is declared to have good model fit and is suitable for hypothesis testing.

4.5. Hypothesis Testing Results

Table 6. Hypothesis Testing Results

Hypothesis	Path Relationship	Path Coefficient (β)	*P*-Value	Result
H1	Digital Entrepreneurship Readiness → Market Orientation	0.408	<0.01	Supported
H2	Innovation Mindset → Market Orientation	0.495	<0.01	Supported
H3	Digital Entrepreneurship Readiness → Sustainable Business Performance	0.306	<0.01	Supported
H4	Innovation Mindset → Sustainable Business Performance	0.240	<0.01	Supported
H5	Market Orientation → Sustainable Business Performance	0.380	<0.01	Supported

Based on the results presented in Table 6 and Figure 2, all five research hypotheses are supported. The detailed explanation for each hypothesis is as follows:

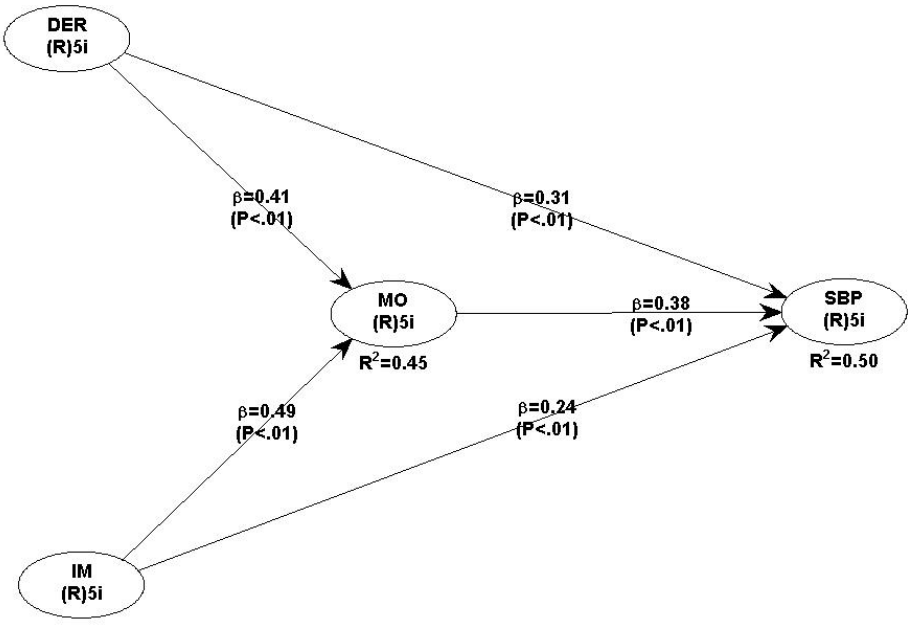


Figure 2. Structural Model Results (WarpPLS 8.0)

Source: WarpPLS output (2026)

Digital Entrepreneurship Readiness (DER) on Market Orientation (MO) has a path coefficient (β) of 0.41, indicating a positive relationship. The p-value of <0.01 is smaller than the alpha level of 0.05. Therefore, Digital Entrepreneurship Readiness has a positive and significant effect on Market Orientation, meaning that Hypothesis 1 is accepted.

Innovation Mindset (IM) on Market Orientation (MO) has a path coefficient (β) of 0.49, indicating a positive relationship. The p-value of <0.01 is smaller than the alpha level of 0.05. Therefore, Innovation Mindset has a positive and significant effect on Market Orientation, meaning that Hypothesis 2 is accepted.

Digital Entrepreneurship Readiness (DER) on Sustainable Business Performance (SBP) has a path coefficient (β) of 0.31, indicating a positive relationship. The p-value of <0.01 is smaller than the alpha level of 0.05. Therefore, Digital Entrepreneurship Readiness has a positive and significant effect on Sustainable Business Performance, meaning that Hypothesis 3 is accepted.

Innovation Mindset (IM) on Sustainable Business Performance (SBP) has a path coefficient (β) of 0.24, indicating a positive relationship. The p-value of <0.01 is smaller than the alpha level of 0.05. Therefore, Innovation Mindset has a positive and significant effect on Sustainable Business Performance, meaning that Hypothesis 4 is accepted.

Market Orientation (MO) on Sustainable Business Performance (SBP) has a path coefficient (β) of 0.38, indicating a positive relationship. The p-value of <0.01 is smaller than the alpha level of 0.05. Therefore, Market Orientation has a positive and significant effect on Sustainable Business Performance, meaning that Hypothesis 5 is accepted.

4.6. Mediation Analysis Results

Mediation analysis was conducted to examine the indirect effects of Digital Entrepreneurship Readiness (DER) and Innovation Mindset (IM) on Sustainable Business Performance (SBP) through Market Orientation (MO) as a mediating variable. The results of the mediation analysis are presented in Table 7.

Table 7. Mediation Testing Results

Hypothesis	Mediation Path	Direct Effect	Indirect Effect	*P*-Value (Indirect)	Total Effect	VAF (%)	Mediation
H6	DER → MO → SBP	0.306	0.155	0.009	0.461	33.62	Partial mediation
H7	IM → MO → SBP	0.240	0.188	0.002	0.428	43.93	Partial mediation

Source: WarpPLS output (2026)

The mediation analysis was conducted to examine the mediating role of Market Orientation (MO) in the relationships between Digital Entrepreneurship Readiness (DER), Innovation Mindset (IM), and Sustainable Business Performance (SBP). The mediation analysis followed established guidelines for mediation analysis in partial least squares structural equation modeling (PLS-SEM) (Carrión et al., 2017). The mediation effect was evaluated using the Variance Accounted For (VAF), calculated as the ratio of the indirect effect to the total effect, expressed as a percentage. Under the conventional VAF classification, values between 20% and 80% indicate partial mediation. This classification was considered alongside the statistical significance of the indirect effects.

As shown in Table 7, the DER → MO → SBP pathway produced a direct effect of 0.306, an indirect effect of 0.155, and a total effect of 0.461. The indirect effect was statistically significant (p = 0.009). The resulting VAF value was 33.62%, indicating that MO partially mediates the relationship between DER and SBP. This finding suggests that DER contributes to SBP both directly and indirectly through MO. Therefore, H6 is supported.

Similarly, the IM → MO → SBP pathway showed a direct effect of 0.240, an indirect effect of 0.188, and a total effect of 0.428. The indirect effect was also statistically significant (p = 0.002). The VAF value of 43.93% falls within the partial mediation range, demonstrating that MO partially mediates the relationship between IM and SBP. Thus, IM influences SBP not only directly but also indirectly through MO. Accordingly, H7 is supported.

Overall, the mediation results demonstrate that MO serves as a partial mediator in both relationships. Moreover, the VAF value for the IM → MO → SBP pathway (43.93%) is higher than that for the DER → MO → SBP pathway (33.62%), suggesting that the indirect effect through MO accounts for a relatively

larger proportion of the total effect of IM on SBP. These findings highlight the role of market orientation as an important mechanism through which both digital entrepreneurship readiness and innovation mindset contribute to sustainable business performance.

4.7. Discussion

4.7.1 The Effect of Digital Entrepreneurship Readiness on Market Orientation

The results of the first hypothesis (H1) testing show that Digital Entrepreneurship Readiness (DER) has a positive and significant effect on Market Orientation (MO) with a path coefficient (β) of 0.41 and a p-value <0.01. This finding indicates that the higher the digital readiness of an entrepreneur, the better their market orientation.

This finding provides support for the RBV perspective by demonstrating that digital entrepreneurship readiness functions as a valuable intangible resource that enables MMSMEs to acquire, process, and utilize digital information for market related activities. Digital knowledge, technological skills, and adaptive capabilities embedded within digital readiness allow firms to strengthen their market intelligence processes. Furthermore, from the Dynamic Capability perspective, digital entrepreneurship readiness enhances firms' ability to sense technological and market changes, enabling them to respond more effectively to evolving customer needs (Teece, 2007; Teece et al., 1997).

This finding is consistent with previous research stating that digital capabilities possessed by entrepreneurs enable them to access, analyze, and respond to market information more quickly and accurately. Digital readiness encompasses mastery of digital technology, digital infrastructure, and digital literacy that enable entrepreneurs to understand customer needs, monitor market trends, and identify business opportunities more effectively (Mirhabibi et al., 2025; Xu et al., 2022).

In the context of this study, entrepreneurs with high digital readiness tend to be more capable of adopting market orientation because they can utilize various digital platforms to collect market data, interact with customers, and conduct competitor research. This strengthens the argument that digital readiness is an important antecedent for the development of market orientation in the digital era.

4.7.2 The Effect of Innovation Mindset on Market Orientation

The results of the second hypothesis (H2) testing show that Innovation Mindset (IM) has a positive and significant effect on Market Orientation (MO) with a path coefficient (β) of 0.49 and a p-value <0.01. This relationship is the strongest among all tested hypotheses.

This finding extends the RBV perspective by confirming that innovation mindset represents a valuable cognitive resource embedded within entrepreneurial capabilities. Such resources are difficult to imitate because they develop through organizational learning and entrepreneurial experiences (Barney, 1991). From the Dynamic Capability perspective, an innovation mindset supports firms' adaptive capacity by encouraging experimentation, opportunity recognition, and strategic responses to market changes.

This finding indicates that the innovative mindset possessed by entrepreneurs encourages them to be more market-oriented. Entrepreneurs with an innovation mindset tend to be more open to new ideas, more willing to take risks, and more proactive in seeking market opportunities (Cruz Rincon et al., 2023; Stocker et al., 2021). This mindset enables them to continuously seek new ways to meet customer needs and respond to market changes.

This finding is consistent with Elgarhy and Abou-Shouk (2023) who suggest that an innovative orientation can encourage firms to adopt more market-oriented strategies. Entrepreneurs with an innovative mindset focus not only on new product development but also on a deep understanding of market dynamics and customer preferences.

4.7.3 The Effect of Digital Entrepreneurship Readiness on Sustainable Business Performance

The results of the third hypothesis (H3) testing show that Digital Entrepreneurship Readiness (DER) has a positive and significant effect on Sustainable Business Performance (SBP) with a path coefficient (β) of 0.31 and a p-value <0.01.

The positive effect of digital entrepreneurship readiness on sustainable business performance reinforces the RBV argument that strategic intangible resources contribute to competitive advantage. Digital readiness allows MMSMEs to improve operational efficiency, expand market reach, and create new value propositions. However, consistent with Dynamic Capability logic, the value of digital resources depends on firms' ability to sense environmental changes, seize digital opportunities, and continuously reconfigure these resources according to evolving market conditions (Teece, 2007; Teece et al., 1997).

This finding indicates that digital readiness plays an important role in improving sustainable business performance. Entrepreneurs who are digitally ready can optimize the use of technology to improve operational efficiency, reduce costs, and create added value for their businesses (Alqam et al., 2025; Mehmood et al., 2026).

Furthermore, digital readiness enables entrepreneurs to adopt more environmentally friendly and sustainable business practices, such as more efficient energy use, waste reduction through process digitalization, and the development of digital products or services with lower environmental impact (Novicka, 2025). Thus, DER directly contributes to achieving sustainable business performance.

4.7.4 The Effect of Innovation Mindset on Sustainable Business Performance

The results of the fourth hypothesis (H4) testing show that Innovation Mindset (IM) has a positive and significant effect on Sustainable Business Performance (SBP) with a path coefficient (β) of 0.24 and a p-value <0.01.This finding indicates that an innovative mindset contributes to sustainable business performance. Entrepreneurs with an innovation mindset tend to continuously seek ways to improve their products, processes, and business models, which ultimately has a positive impact on long-term business performance (Alkhalaileh & Qasim, 2026; Jaaffar et al., 2024).

From the RBV perspective, innovation mindset represents a valuable cognitive resource that supports sustainable value creation. Entrepreneurs with stronger innovation mindsets possess greater ability to generate new solutions and differentiate their offerings. In addition, this finding supports Dynamic Capability perspective by indicating that entrepreneurial cognition contributes to firms' ability to transform existing resources into innovative and sustainable outcomes.

Although this direct effect is relatively smaller compared to other variables, this finding remains statistically significant. This indicates that an innovation mindset remains an important factor to consider in achieving sustainable business performance. The smaller effect can be explained because an innovation mindset may require mediation through other variables, such as market orientation, to have a more optimal impact on sustainable performance.

4.7.5 The Effect of Market Orientation on Sustainable Business Performance

The results of the fifth hypothesis (H5) testing show that Market Orientation (MO) has a positive and significant effect on Sustainable Business Performance (SBP) with a path coefficient (β) of 0.38 and a p-value <0.01.

This finding highlights the role of market orientation as a market-based dynamic capability. Consistent with (Teece, 2007; Teece et al., 1997) firms with stronger market orientation are better able to sense customer changes, seize market opportunities, and reconfigure strategies to achieve sustainable performance. Therefore, market orientation acts as the mechanism through which internal resources are transformed into competitive outcomes.

This finding confirms that market orientation is an important factor in achieving sustainable business performance. Entrepreneurs who are market-oriented tend to be better able to understand customer needs and wants, respond to market changes quickly, and develop appropriate strategies to maintain competitive advantage (Cahyo et al., 2026; Yodchai et al., 2022).

This result is supported by previous research stating that market orientation contributes positively to business performance, (Jaworski & Kohli, 1993). In the context of sustainability, market orientation helps entrepreneurs identify emerging sustainability trends in the market, such as consumer demand for environmentally friendly products, and adjust their business strategies accordingly.

4.7.6 The Effect of Digital Entrepreneurship Readiness on Sustainable Business Performance through Market Orientation

The results of the sixth hypothesis (H6) testing show that Market Orientation (MO) mediates the effect of Digital Entrepreneurship Readiness (DER) on Sustainable Business Performance (SBP) with a path coefficient (β) of 0.155 and a p-value of 0.009. This finding indicates that Market Orientation acts as a significant mediating variable in the relationship between digital readiness and sustainable business performance.

The mediating role of market orientation provides further theoretical insight into the integration of RBV and Dynamic Capability perspectives. While digital entrepreneurship readiness and innovation mindset represent strategic resources emphasized by RBV, market orientation explains how these resources are transformed into sustainable business performance through adaptive organizational processes. This finding extends previous literature by demonstrating that resources alone are insufficient; firms must develop dynamic capabilities to convert resources into long-term performance advantages.

This finding is consistent with previous research stating that digital readiness does not directly improve business performance, but rather through the development of market orientation first (Hanaysha et al., 2022). Entrepreneurs with high digital readiness tend to be more capable of accessing market information, analyzing customer behavior, and responding to market changes quickly. This ability then encourages them to adopt a stronger market orientation, which ultimately contributes to achieving sustainable business performance.

Furthermore, this finding strengthens the Resource-Based View (RBV) framework which states that resources possessed by firms, including digital readiness, can create competitive advantage when combined with appropriate organizational capabilities, such as market orientation (Barney, 1991). In this context, Market Orientation serves as a mechanism that transforms digital readiness into sustainable business performance.

The partial mediation result also shows that DER still has a significant direct effect on SBP even when MO is included as a mediating variable. This indicates that besides through market orientation, digital readiness can also influence sustainable performance through other pathways, such as operational efficiency (Elgarhy & Abou-Shouk, 2023).

Thus, this finding provides a theoretical contribution by explaining the mediation mechanism linking digital readiness with sustainable business performance. Practically, entrepreneurs are advised not only to develop digital readiness but also to actively build market orientation in order to maximize the impact of digital readiness on sustainable performance.

4.7.7 The Effect of Innovation Mindset on Sustainable Business Performance through Market Orientation

The results of the seventh hypothesis (H7) testing show that Market Orientation (MO) mediates the effect of Innovation Mindset (IM) on Sustainable Business Performance (SBP) with a path coefficient (β) of 0.188 and a p-value of 0.002. This finding indicates that Market Orientation acts as a significant mediating variable in the relationship between innovative mindset and sustainable business performance.

This finding is consistent with previous research stating that an innovative mindset encourages entrepreneurs to be more market-oriented, as they tend to continuously seek new ways to meet customer needs and respond to changes in the business environment (Maziriri et al., 2024; Yodchai et al., 2022). Entrepreneurs with a strong innovation mindset are more likely to identify new market opportunities, develop innovative products or services, and adjust their marketing strategies according to market dynamics.

The market orientation formed from this innovative mindset is then associated with higher sustainable business performance. This is because market-oriented entrepreneurs tend to be better able to understand evolving customer needs, including the demand for environmentally friendly and sustainable products and services (Bicen et al., 2021; Stocker et al., 2021).

This result is also consistent with the Dynamic Capability perspective, which emphasizes a firm's

ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece, 2007; Teece et al., 1997). In this context, an innovation mindset represents a cognitive resource that may support the development of adaptive capabilities.

The partial mediation finding also confirms that IM has a significant direct effect on SBP, but its effect can be strengthened through the development of market orientation. This indicates that Market Orientation is an important mechanism that strengthens the contribution of innovative mindset to sustainable business performance. Thus, entrepreneurs are advised not only to develop an innovative mindset but also to actively build market orientation in order to maximize the impact of innovation on sustainable performance.

5. Conclusion

Based on the results of the analysis and discussion described previously, this study aimed to analyze the effect of Digital Entrepreneurship Readiness and Innovation Mindset on Sustainable Business Performance through Market Orientation as a mediating variable among entrepreneurs. The following conclusions can be drawn from this study:

1. Digital Entrepreneurship Readiness has a positive and significant effect on Market Orientation. This finding indicates that the higher the digital readiness possessed by entrepreneurs, the better their market orientation. Entrepreneurs who are digitally ready are able to utilize technology to access market information, understand customer needs, and respond to market changes more effectively.
2. Innovation Mindset has a positive and significant effect on Market Orientation. This finding shows that an innovative mindset encourages entrepreneurs to be more market-oriented. Entrepreneurs with an innovative mindset tend to be more open to new ideas, more proactive in seeking market opportunities, and more capable of adjusting their business strategies to market dynamics.
3. Digital Entrepreneurship Readiness has a positive and significant effect on Sustainable Business Performance. This finding indicates that digital readiness plays an important role in improving sustainable business performance through optimization of technology use, operational efficiency, and adoption of environmentally friendly business practices.
4. Innovation Mindset has a positive and significant effect on Sustainable Business Performance. This finding shows that an innovative mindset is positively associated with sustainable business performance, where innovative entrepreneurs continuously seek ways to improve their products, processes, and business models.
5. Market Orientation has a positive and significant effect on Sustainable Business Performance. This finding confirms that market orientation is an important factor in achieving sustainable business performance, as market-oriented entrepreneurs are able to understand customer needs and respond to market changes appropriately.
6. Market Orientation mediates the effect of Digital Entrepreneurship Readiness on Sustainable Business Performance. This finding indicates that digital readiness not only has a direct effect on sustainable performance but also has an indirect effect through the development of market orientation. Thus, market orientation acts as a pathway through which digital readiness is linked to sustainable business performance.
7. Market Orientation mediates the effect of Innovation Mindset on Sustainable Business Performance. This finding shows that an innovative mindset not only has a direct effect on sustainable performance but also has an indirect effect through the development of market orientation. Market orientation serves as a pathway through which innovative mindset is linked to sustainable business performance.

Overall, the findings show that Digital Entrepreneurship Readiness and Innovation Mindset are significantly associated with Sustainable Business Performance, both directly and indirectly through Market Orientation. The research model has adequate predictive capability, with R-squared values of

0.45 for Market Orientation and 0.50 for Sustainable Business Performance, indicating that the model is able to explain the variance in both variables in the moderate to substantial category.

This study contributes to the development of the Resource-Based View (RBV) perspective by demonstrating how digital entrepreneurship readiness and innovation mindset function as strategic intangible resources that contribute to sustainable business performance. While previous RBV studies have emphasized the importance of valuable and difficult-to-imitate resources, this study extends the perspective by showing how digital-oriented resources and entrepreneurial cognitive capabilities create value within MMSMEs in developing economies.

Furthermore, this study contributes to the Dynamic Capability perspective by illustrating how market orientation serves as a mechanism that transforms internal resources into sustainable performance outcomes. The findings extend the understanding of Dynamic Capability by highlighting how MMSMEs develop adaptive capabilities through market intelligence, responsiveness, and resource reconfiguration to respond to digital transformation and changing market environments.

5.1. Limitations of the Study

This study has several limitations that need to be acknowledged and considered in the interpretation of the results. First, this study used a cross-sectional approach that collected data at a single point in time. This approach does not allow researchers to observe changes in relationships between variables over time, so the causal relationships generated are still inferential and cannot definitively confirm the direction of causality. Second, the sample size used in this study was relatively limited, so generalization of the research results to a wider population needs to be done cautiously. Third, this study only focused on four main variables, namely Digital Entrepreneurship Readiness, Innovation Mindset, Market Orientation, and Sustainable Business Performance. Thus, there are still other factors that may influence Sustainable Business Performance that have not been explored in this study. Fourth, the measurement of all variables used a self-report questionnaire filled out independently by respondents. This method has the potential to cause respondent perception bias, where respondents may provide more ideal answers compared to actual conditions (social desirability bias). Fifth, this study was conducted in the context of entrepreneurs in a specific region, so the results may not be fully generalizable to different geographical or industrial contexts.

5.2. Recommendations

Based on the results of the descriptive statistical analysis and hypothesis testing that have been conducted, several recommendations can be offered for entrepreneurs, the government, and future researchers.

Based on the descriptive statistics, all research variables showed high respondent perceptions, but there are still several aspects that need improvement. Digital Entrepreneurship Readiness still shows that there are entrepreneurs with low digital readiness. Therefore, entrepreneurs are advised to improve their digital readiness through digital literacy training, investment in technology infrastructure, and adoption of the latest digital platforms. The government and related institutions are also expected to provide digitalization training programs for entrepreneurs, especially for those who still have low digital readiness. Innovation Mindset also still shows that there are entrepreneurs with a low innovative mindset. It is recommended for entrepreneurs to develop a culture of innovation in their organizations, including encouraging creativity, willingness to take risks, and openness to new ideas. Training programs and workshops on innovation and entrepreneurial creativity need to be enhanced to encourage the development of an innovative mindset. Market Orientation and Sustainable Business Performance have shown good values, but entrepreneurs need to continue strengthening their market orientation by actively collecting and analyzing market information, responding to customer needs, and continuing to adopt sustainable business practices such as energy efficiency, waste reduction, and development of environmentally friendly products.

Based on the hypothesis testing results, all hypotheses proposed in this study were accepted. The first finding shows that Digital Entrepreneurship Readiness has a positive and significant effect on Market Orientation and Sustainable Business Performance. This indicates that digital readiness is an important

factor that needs to be continuously developed. Therefore, entrepreneurs are advised to improve their digital competencies through various training programs, seminars, and mentoring focused on utilizing digital technology in business. Access to digital infrastructure such as the internet, hardware, and software also needs to be facilitated by the government and relevant stakeholders. The second finding shows that Innovation Mindset has a positive and significant effect on Market Orientation and Sustainable Business Performance. The relationship between Innovation Mindset and Market Orientation is the strongest among all hypotheses, indicating that an innovative mindset is closely associated with market orientation.

Therefore, entrepreneurs are advised to actively develop an innovative mindset through openness to new ideas, willingness to take risks, and proactiveness in seeking market opportunities. Business incubation programs and entrepreneurial bootcamps can be effective means to develop an innovative mindset. The third finding shows that Market Orientation has a positive and significant effect on Sustainable Business Performance and acts as a significant mediating variable in the relationship between Digital Entrepreneurship Readiness and Innovation Mindset on Sustainable Business Performance. This finding confirms that Market Orientation is an important pathway linking digital readiness and innovative mindset to sustainable business performance. Therefore, entrepreneurs are advised not only to develop digital readiness and innovative mindset but also to actively build market orientation. Strategies that can be implemented include conducting periodic market research, building close relationships with customers, and developing products or services that suit market needs and preferences.

For future researchers, several recommendations can be offered as follows. First, future research is recommended to expand the number of samples and the scope of the research area so that the results can be more widely generalized. Second, future research can consider other variables that may influence Sustainable Business Performance, such as Entrepreneurial Orientation, Digital Capability, Environmental Dynamism, or Government Support. Third, future research is recommended to use longitudinal methods to observe changes in entrepreneurial behavior over time and identify stronger causal relationships. Fourth, future research can use more advanced analysis techniques, such as Partial Least Squares Structural Equation Modeling with multigroup analysis to compare differences between respondent groups.

The findings of this study provide theoretical contributions to the development of digital entrepreneurship and sustainable performance literature, as well as practical implications for entrepreneurs to improve digital readiness, develop an innovative mindset, and strengthen market orientation as a strategy to achieve sustainable business performance in the digital era.

In terms of policy implications, the findings of this study offer several recommendations for the government and relevant stakeholders. First, local governments, particularly the Cooperatives and MMSMEs Office, should design comprehensive digital literacy training programs for MMSMEs, covering not only social media marketing but also data analytics, digital management systems, and supply chain integration. Second, the government needs to collaborate with universities to create an entrepreneurial innovation ecosystem through business incubation programs and innovation competitions. Third, given the significant mediating role of market orientation, the government should facilitate MSME access to market information through integrated digital platforms. Fourth, the government needs to encourage sustainable business practices through certification programs and incentives for MMSMEs implementing triple bottom line principles. Finally, multi stakeholder partnerships between government, universities, private sector, and financial institutions should be strengthened to create a sustainable digital entrepreneurship ecosystem.

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