
Digital, Dynamic, and Entrepreneurial: A Structural Model of Business Model Innovation in Indonesian SMEs

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ABSTRACT

This study investigates the impact of internal organizational factors on innovation and performance outcomes among small and medium-sized enterprises (SMEs) in Indonesia. Adopting a quantitative approach, data were collected from 156 SMEs across diverse sectors using structured questionnaires. The data were analysed through Structural Equation Modelling with the Partial Least Squares (SEM-PLS) technique. The findings demonstrate that digital capabilities, dynamic capabilities, and strategic entrepreneurial behaviour positively and significantly influence business model innovation, which subsequently has a substantial impact on business performance. Furthermore, business model innovation serves as a mediating variable that bridges the influence of these three organizational capabilities on overall performance. The results offer valuable practical implications for SME stakeholders to prioritize digital transformation and innovation strategies, while also contributing theoretically to the literature on strategic management and business model innovation.

Keywords: Digital Capabilities, Dynamic Capabilities, Strategic Entrepreneurial Behavior, Business Model Innovation, Business Performance

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the global business landscape across industries. Innovations such as cloud computing, artificial intelligence (AI), big data analytics, and the Internet of Things (IoT) have reshaped how organizations operate, compete, and deliver value to customers (Merin-Rodríguez et al., 2024; Wang et al., 2023). In this context, digitalization is no longer a complementary initiative but a central driver of business innovation, particularly through the transformation of business models.

For small and medium-sized enterprises (SMEs), digital transformation presents both significant opportunities and pressing challenges. On one hand, digital technologies offer scalable, cost-effective solutions to improve operational efficiency, access new markets, and enhance customer experiences. On the other hand, many SMEs especially those in emerging economies struggle with limited resources and technical expertise, which

constrain their ability to adopt and integrate digital solutions effectively (Saputra et al. 2024). These challenges highlight the critical importance of developing internal capabilities that allow SMEs to strategically adapt to technological and market changes.

Among the key organizational mechanisms that link internal capabilities to performance outcomes is business model innovation (BMI). BMI refers to the systematic reconfiguration of how firms create, deliver, and capture value in response to dynamic environments (Amit & Zott, 2012). A growing body of research has identified digital capabilities, dynamic capabilities, and strategic entrepreneurial behavior as important antecedents of BMI (Ramadan et al., 2024; Wang et al., 2023). However, existing studies often examine these factors in isolation, lacking an integrated framework that explains how these capabilities interact to drive BMI and, in turn, enhance business performance.

Moreover, while prior studies recognize the relevance of BMI, it is often positioned merely as an outcome variable rather than as a

mediating mechanism. In reality, BMI may function as a strategic channel through which internal capabilities are transformed into measurable improvements in business performance (Amit & Zott, 2012; Saputra et al., 2024). Nonetheless, empirical investigations that examine this mediating role, particularly in the SME context remain limited, especially given that innovation processes in small firms tend to be informal, incremental, and resource-constrained.

In addition, much of the empirical evidence in this field is derived from research conducted in developed economies, where digital infrastructure, institutional support, and innovation ecosystems are well-established. In contrast, Indonesian SMEs operate within an environment characterized by low digital maturity, constrained access to capital, and persistent structural challenges. These contextual factors offer a unique opportunity to explore how internal capabilities influence innovation and performance under real-world constraints providing insights into the applicability of capability-based theories in emerging markets.

Taken together, these gaps reveal a compelling need for an integrated model that captures the interaction among digital capabilities, dynamic capabilities, and strategic entrepreneurial behavior. This study addresses that need by examining how these capabilities collectively shape business model innovation and, ultimately, firm performance particularly in the under-researched context of SMEs in Indonesia.

LITERATUR REVIEW

Digital Capabilities and Business Model Innovation

Digital capabilities refer to a firm's ability to leverage digital technologies in ways that enhance operational efficiency, strategic flexibility, customer engagement, and ultimately innovation (Wang et al., 2023). These capabilities encompass sensing digital opportunities, transforming processes, and responding effectively to technological changes (Freitas Junior, 2018).

For SMEs, digital capabilities are especially valuable because they enable resource-constrained firms to achieve scalability, automate operations, and explore new revenue streams. As noted by Wang et al. (2023), digital capabilities are directly associated with a firm's ability to initiate business model innovation particularly in turbulent and fast-changing market environments.

Business model innovation involves fundamental changes to how a firm creates, delivers, and captures value (Amit & Zott, 2012). Firms with advanced digital capabilities can experiment with new configurations of resources, reengineer value propositions, and reach underserved customer segments through digital channels. Therefore, digital capabilities are expected to have a significant positive impact on the ability of SMEs to innovate their business models.

H1: Digital capabilities have a positive effect on business model innovation.

Dynamic Capabilities and Business Model Innovation

Dynamic capabilities are defined as a firm's capacity to purposefully create, extend, or modify its resource base in response to changing environments (Teece et al., 1997). They are categorized into three main components: (1) sensing opportunities and threats, (2) seizing opportunities through resource mobilization, and (3) reconfiguring resources and organizational structures.

For SMEs, dynamic capabilities are essential in enabling rapid adaptation and strategic renewal. Unlike large firms with established systems and buffers, SMEs must rely on their agility and flexibility to respond to external shocks. As such, dynamic capabilities are strongly linked to the firm's ability to modify its business model as a response to environmental changes (Amaya et al., 2024).

In the current era of digital disruption and heightened competition, the ability to sense and respond to market shifts and to reconfigure value chains accordingly is crucial. Firms that successfully deploy dynamic capabilities can redesign their business models to improve fit

with market demands and enhance strategic differentiation.

H2: Dynamic capabilities have a positive effect on business model innovation.

Strategic Entrepreneurial Behaviour and Business Model Innovation

Strategic entrepreneurial behaviour represents the combination of strategic management and entrepreneurial posture, characterized by proactiveness, innovativeness, and calculated risk-taking in the pursuit of new market opportunities (Covin & Slevin, 1991; Amankwah-Amoah et al., 2024). This behaviour enables firms to challenge existing business logics and explore alternative pathways to value creation.

In SMEs, where leadership is often centralized and decision-making cycles are shorter, strategic entrepreneurial behaviour is a vital capability that drives innovation and strategic renewal. Entrepreneurs who act strategically and proactively are more likely to experiment with new business models, respond quickly to market needs, and integrate novel technologies into their operations (Ramadan et al. 2024). This behaviour supports not only the initiation but also the successful implementation of business model innovation. Entrepreneurs who are willing to take strategic risks and embrace uncertainty can disrupt traditional market assumptions and design value propositions that are more relevant to evolving customer preferences.

H3: Strategic entrepreneurial behaviour has a positive effect on business model innovation.

Business Model Innovation and Business Performance

Business model innovation (BMI) is defined as the deliberate and systemic transformation of the value logic of a firm, encompassing changes in customer engagement, cost and revenue structures, partner networks, and channels to market (Amit & Zott, 2012). Unlike product or process innovation, BMI addresses the overall architecture of value creation and delivery.

Several studies have demonstrated a positive relationship between business model innovation and firm performance (Wang et al., 2023; Liu et al., 2022). By adopting innovative

business models, SMEs can overcome limitations in resources, reach new customer segments, and differentiate themselves from competitors. Furthermore, in rapidly changing environments, traditional business models may become obsolete, necessitating continuous experimentation and renewal.

In the context of Indonesian SMEs, business model innovation is expected to be a strategic mechanism that translates internal capabilities into measurable performance outcomes, such as profitability, market share, and customer satisfaction.

H4: Business model innovation has a positive effect on business performance.

The Mediating Role of Business Model Innovation

While previous studies have confirmed the direct effects of digital, dynamic, and entrepreneurial capabilities on firm performance, emerging evidence suggests that these relationships are often indirect and mediated by innovation mechanisms, particularly business model innovation (Ramadan et al., 2024; Saputra et al., 2024). Business model innovation serves as a transformational conduit through which internal capabilities are converted into external value and financial outcomes.

For instance, SMEs with high digital capabilities may not automatically achieve superior performance unless they use those capabilities to redesign their business models. Similarly, dynamic capabilities and entrepreneurial behaviour require a concrete mechanism such as innovation to yield tangible business benefits. Thus, this study proposes that business model innovation mediates the relationship between organizational capabilities and performance, acting as a critical link that integrates internal strategic assets with external value creation.

H5a: Business model innovation mediates the relationship between digital capabilities and business performance.

H5b: Business model innovation mediates the relationship between dynamic capabilities and business performance.

H5c: Business model innovation mediates the relationship between strategic

entrepreneurial behaviour and business performance.

Research Model

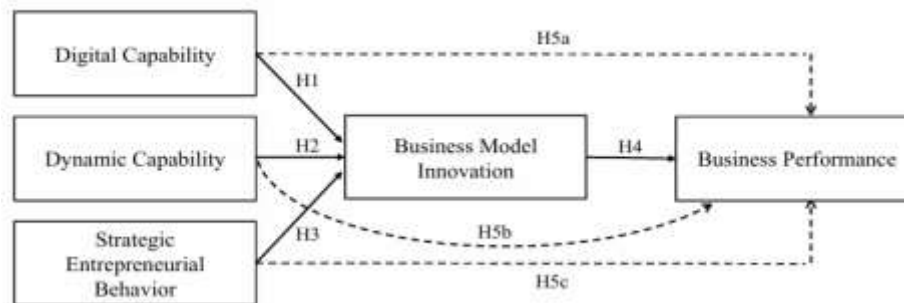


Figure 1. Conceptual model

METHOD

This study employs a quantitative explanatory research design to investigate the relationships among digital capabilities, dynamic capabilities, strategic entrepreneurial behaviour, business model innovation, and business performance in Indonesian SMEs. Rooted in the positivist paradigm, the research emphasizes objectivity and hypothesis testing using statistical methods. The purpose of this design is not only to describe phenomena but also to explain causal relationships among constructs derived from theory and supported by empirical evidence.

The target population in this study consists of small and medium-sized enterprises (SMEs) operating in various sectors throughout Indonesia. Considering the wide dispersion and heterogeneity of SMEs in Indonesia, the sampling technique used was purposive sampling. The selection criteria required that participating SMEs had been operating for at least three years and had begun implementing digital technologies either in operations, marketing, or management. This criterion was adopted to ensure that the respondents had relevant experience with digital adoption and innovation processes. In total, 156 valid responses were collected and analyzed. This number is deemed sufficient for Partial Least Squares Structural Equation Modelling (PLS-SEM), particularly in models with multiple

constructs and indicators, as supported by recommendations from (Hair et al., 2022).

Data were collected using a structured questionnaire, which was distributed both online and offline. The questionnaire consisted of items measuring the five main research variables. Each construct was operationalized based on previous validated scales. Digital capability was measured using five indicators adapted from Freitas Junior (2018), while dynamic capability was assessed with eight items based on the framework of Teece et al. (1997). Strategic entrepreneurial behaviour included six indicators drawn from, as well as more recent work by Amankwah-Amoah et al. (2024). Business model innovation was measured using six items developed from the conceptualization of Amit & Zott (2012), and business performance was assessed through six indicators reflecting both financial and non-financial dimensions, adapted from Barney (2020) and other relevant studies. All items were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Prior to the main data collection, a pilot test involving 20 SME representatives was conducted to examine the clarity, readability, and reliability of the questionnaire items. Minor adjustments in wording were made based on the feedback obtained during this pilot phase, ensuring linguistic precision and conceptual alignment.

Table 1. Summary of Variable Operationalization

No	Variable	Description	Number of Items	Reference
1	Digital Capability	The organization's ability to utilize digital technologies to enhance performance and innovation.	5	Freitas Junior (2018)
2	Dynamic Capability	The organization's ability to respond and adapt to environmental changes dynamically.	8	Teece et al. (1997)
3	Strategic Entrepreneurial Behavior	A proactive, innovative, and risk-taking orientation in pursuing business opportunities.	6	Covin (1991); Amankwah-Amoah et al. (2024)
4	Business Model Innovation	The firm's capability to redesign how value is created, delivered, and captured.	6	Amit & Zott (2012)
5	Business Performance	The overall achievements of the business, including both financial and non-financial outcomes.	6	Barney (2020)

For data analysis, this study utilized Partial Least Squares Structural Equation Modelling (PLS-SEM), implemented through the Smart PLS 4.0 software. The choice of PLS-SEM was motivated by its ability to handle complex models with multiple constructs and indicators, its robustness in dealing with non-normal data, and its suitability for predictive and exploratory purposes (Hair et al., 2022).

The analysis proceeded in two stages. The first stage involved testing the measurement model (outer model), which evaluates the validity and reliability of the indicators. This includes assessments of convergent validity (via outer loadings and Average Variance Extracted/AVE), discriminant validity (using cross-loadings and the Fornell-Larcker criterion), and internal consistency reliability (using Cronbach's Alpha and Composite Reliability). Indicators with loading values below the 0.70 threshold were evaluated for retention based on conceptual relevance and AVE contribution.

The second stage addressed the structural model (inner model) to assess the significance and strength of the hypothesized relationships among constructs. This stage included analysis of path coefficients, tested through the bootstrapping procedure with 5,000 subsamples to determine statistical

significance. Additionally, the model's explanatory power was evaluated using R^2 and Adjusted R^2 values, while predictive relevance (Q^2) was examined using the blindfolding technique. To assess potential multicollinearity among predictor variables, Variance Inflation Factor (VIF) values were also analysed, with a threshold of less than 5 considered acceptable. All statistical inferences were made at a 95% confidence level ($\alpha = 0.05$), and the results were interpreted in accordance with established guidelines in PLS-SEM literature

RESULT and DISCUSSION

The measurement model was evaluated to assess the validity and reliability of each construct. The results confirm that all constructs meet the requirements for convergent validity, indicated by Average Variance Extracted (AVE) values exceeding 0.50 for all variables. This suggests that each set of indicators sufficiently explains the variance of their respective latent constructs.

Discriminant validity was also confirmed using the cross-loading matrix and the Fornell-Larcker criterion, where the square root of the AVE for each construct was greater than its correlations with other constructs. This supports the conclusion that each construct is conceptually distinct and well-defined. In terms of internal consistency reliability, both

Cronbach's Alpha and Composite Reliability values for all constructs exceeded 0.84 and 0.88 respectively, surpassing the threshold of 0.70 as recommended by Hair et al., (2022). These

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

Table 1. Construct reliability and validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Business Model Innovation	0.848	0.854	0.887	0.568
Digital Capability	0.841	0.848	0.887	0.610
Dynamic Capability	0.856	0.859	0.888	0.500
Business Performance	0.842	0.850	0.883	0.559
Strategic Entrepreneurial Behavior	0.840	0.850	0.882	0.557

Table 2. Fornell-Larcker Criterion

	Business Model Innovation	Digital Capabilities	Dynamic Capabilities	Business Performance	Strategic Entrepreneurial Behavior
Business Model Innovation	0.754				
Digital Capabilities	0.705	0.781			
Dynamic Capabilities	0.706	0.740	0.707		
Business Performance	0.616	0.616	0.668	0.748	
Strategic Entrepreneurial Behavior	0.700	0.648	0.717	0.605	0.746

The structural model was assessed to evaluate the relationships between latent constructs. The R² value for business model innovation was 0.619, indicating that digital capabilities, dynamic capabilities, and strategic entrepreneurial behaviour collectively explain 61.9% of the variance in business model innovation. Meanwhile, the R² value for business performance was 0.380, showing a moderate level of explanatory power.

Further, the predictive relevance (Q²) of the model was tested using the blindfolding procedure. The Q² values for business model innovation (0.330) and business performance (0.202) indicate good predictive relevance, as values greater than zero suggest that the model has acceptable predictive accuracy.

No significant issues with multicollinearity were detected, as all variance inflation factor (VIF) values were below the commonly accepted threshold of 5. This supports the robustness of the model in estimating causal relationships.

Figure 2 illustrates the path estimation results derived from the PLS-SEM analysis. Table 4 presents the path coefficients obtained from the bootstrapping procedure, along with the corresponding p-values used to assess the proposed hypotheses. All t-statistics exceed the critical value of 1.96, and all p-values are below the 0.05 threshold, indicating that each hypothesis is statistically supported. Hypotheses 1, 2, 3, and 4 which examine the direct effects of digital capabilities, dynamic capabilities, and strategic entrepreneurial behavior on business model innovation are confirmed to be significant, with path coefficients of 0.342 (p < 0.001), 0.242 (p = 0.001), and 0.310 (p = 0.001) respectively. These findings are consistent with prior research suggesting that technological, adaptive, and behavioural capacities are essential drivers of innovation within SMEs (Wang et al., 2023; Teece et al., 1997; Covin & Slevin, 1991). In addition, business model innovation was found to have a strong direct effect on business performance ($\beta = 0.603$, p <

0.001). This supports the argument that reconfiguring a firm's value creation, delivery,

and capture mechanisms contributes significantly to its financial and market outcomes

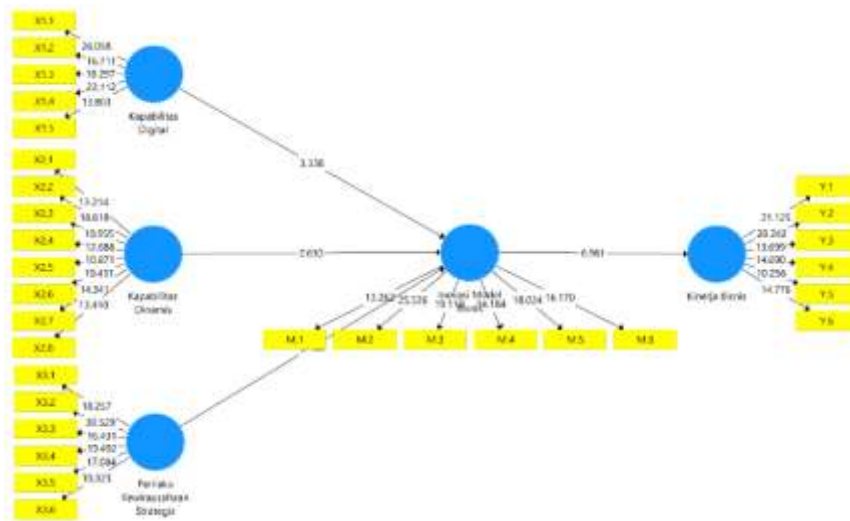


Figure 2. Bootstrapping Test Results

Furthermore, the results of the mediation analysis confirm that business model innovation significantly mediates the relationships proposed in Hypotheses 5a, 5b, and 5c. All three indirect pathways linking digital capability ($\beta = 0.206$, $p = 0.002$), dynamic capability ($\beta = 0.146$, $p = 0.006$), and strategic entrepreneurial behaviour ($\beta = 0.187$, $p = 0.003$) to business performance via business model innovation were statistically significant. This implies that internal capabilities must be channelled through innovation processes to produce optimal performance outcomes, which is in line with the mediating perspective of Amit & Zott, (2012).

The findings of this study reinforce theoretical assumptions from the Resource-Based View (RBV) and Dynamic Capabilities Theory, both of which emphasize that internal firm capabilities, when effectively developed and integrated can become a source of sustained competitive advantage. In the context of SMEs in emerging markets such as Indonesia, where digital maturity and institutional support may be limited, the effective mobilization of internal capabilities becomes even more critical.

The significant impact of digital capability on business model innovation suggests that digital adoption not only enhances operational efficiency but also stimulates new ways of delivering value to customers. Meanwhile, the contribution of dynamic capability highlights the importance of organizational agility in responding to market shifts. The influence of strategic entrepreneurial behaviour underlines the behavioural dimension of innovation, where a proactive and opportunity-seeking mindset enables firms to adapt their business models effectively.

The mediating role of business model innovation provides additional insight: it is not merely the presence of internal capabilities that determines success, but how those capabilities are transformed into innovative business practices. This mediation underscores the central role of innovation as a mechanism that converts potential into performance. Collectively, these results offer both theoretical enrichment and practical guidance for SME stakeholders aiming to navigate digital transformation through a capabilities-based and innovation-driven approach

Table 4. Hypothesis Testing Summary

Hypothesis Path	Type	Coefficient (β)	t-Statistic	p-Value	Results
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Digital Capabilities → Business Model Innovation	Direct	0.342	3.771	0.000	Significant
Dynamic Capabilities → Business Model Innovation	Direct	0.242	3.352	0.001	Significant
Strategic Entrepreneurial Behavior → Business Model Innovation	Direct	0.310	3.383	0.001	Significant
Business Model Innovation → Business Performance	Direct	0.603	6.813	0.000	Significant
Digital Capabilities → BMI → Business Performance	Indirect	0.206	3.047	0.002	Significant
Dynamic Capabilities → BMI → Business Performance	Indirect	0.146	2.770	0.006	Significant
Strategic Entrepreneurial Behavior → BMI → Business Performance	Indirect	0.187	2.947	0.003	Significant

CONCLUSION

This study examined the influence of digital capability, dynamic capability, and strategic entrepreneurial behaviour on business model innovation and business performance in Indonesian SMEs. The findings demonstrate that all three internal capabilities significantly contribute to business model innovation, which in turn has a substantial impact on business performance. Business model innovation was found to play a mediating role in the relationship between organizational capabilities and performance. This suggests that the presence of capabilities alone is insufficient; firms must effectively transform them into innovative business models to achieve superior performance.

These results highlight the strategic importance of integrating technological, adaptive, and behavioural capabilities in driving innovation. The study reinforces the theoretical relevance of RBV and dynamic capabilities in emerging market contexts and offers practical guidance for SME actors to improve competitiveness through capability development and innovation-led strategies.

This study offers several important contributions to the literature on strategic management and innovation in SMEs. First, it extends the Resource-Based View (RBV) and Dynamic Capabilities Theory by empirically validating the roles of digital capabilities, dynamic capabilities, and strategic

entrepreneurial behaviour as integrated antecedents of business model innovation. While previous studies have often analysed these variables separately, this study provides a holistic framework that captures their combined influence on innovation and performance.

Second, the research positions business model innovation (BMI) not only as an outcome but also as a mediating mechanism that channels internal capabilities into firm performance. This finding advances theoretical understanding of the transformation process by which intangible resources are converted into tangible results, aligning with and strengthening prior conceptual work by Amit & Zott (2012).

Third, by focusing on Indonesian SMEs, this study adds empirical evidence from an emerging market context, where digital transformation is rapidly evolving but remains uneven. This contributes to the generalizability of capability-based theories beyond developed economies and highlights the contextual nuances of innovation behaviour in resource-constrained settings.

Finally, business model innovation should be viewed as a strategic process, not a one-time change. Firms must continuously assess, test, and redesign their value logic to stay relevant in dynamic markets. Policymakers and SME support institutions can facilitate this by offering training, mentoring, and incentives that strengthen internal capabilities and innovation mindsets.

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