The Impact of Business Model Innovation on the Competitive Advantage of Technology Startups in Indonesia: A Study on Digital Service Platforms

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ABSTRACT

Purpose: This study investigates the impact of Business Model Innovation (BMI) on the competitive advantage of technology startups operating in Indonesia's digital service platform sector. In the context of Indonesia's fast-growing digital economy, startups face intense competition and constant technological disruption, making business model innovation a critical strategic capability.

Subjects and Methods: Using a quantitative approach with data collected from 128 technology startups across sectors such as e-commerce, fintech, edtech, healthtech, and mobility services, this research employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the relationship between BMI and competitive advantage.

Results: The results reveal that BMI has a significant and positive influence on competitive advantage (β = 0.736, p < 0.001), with value proposition innovation having the strongest impact, followed by value creation and value capture innovations. These findings align with the Dynamic Capabilities Theory and the Resource-Based View, highlighting BMI as a key driver of sustained competitive advantage in dynamic markets.

Conclusions: This study contributes to the growing literature on innovation in emerging economies and offers practical implications for startup founders, investors, and policymakers to prioritize continuous business model renewal as a pathway to competitive differentiation and long-term success.

INTRODUCTION

The rapid evolution of digital technologies has transformed the global business landscape, giving rise to new forms of competition, innovation, and entrepreneurship. Among the most notable developments is the emergence of technology startups, particularly those operating within digital service platforms, which have become a crucial driver of economic growth, innovation diffusion, and employment opportunities in both developed and emerging economies (Thomas et al., 2019; Acs et al., 2021).

In Indonesia, the digital economy has experienced exponential growth over the past decade, with startups playing a pivotal role in shaping the country's technology-driven transformation. However, in this highly dynamic and competitive environment, sustaining a competitive advantage remains an ongoing challenge for technology startups. In this context, business model innovation (BMI) is increasingly recognized as a critical strategic tool to foster competitive advantage and long-term success (Klein et al., 2021; Ibarra et al., 2020).

Business model innovation refers to the process through which firms rethink and redefine how they create, deliver, and capture value, often through significant modifications to their value propositions, customer segments, revenue mechanisms, or operational architectures. It is particularly relevant in volatile industries where traditional sources of advantage such as cost leadership or differentiation are no longer sufficient due to technological disruptions and rapidly changing customer expectations (Akhtar & Raheem, 2023).

In the case of technology startups in Indonesia, BMI serves as a dynamic capability that enables firms to not only survive but also thrive in an increasingly saturated and competitive digital ecosystem. By innovating their business models, startups can differentiate themselves from incumbents, create unique customer experiences, and unlock new revenue streams (Freeman et al., 2007). Indonesia's digital economy, valued at over USD 82 billion in 2023, is projected to continue its robust expansion, driven largely by the proliferation of digital service platforms across sectors such as e-commerce, fintech, edtech, and healthtech (Cruz et al., 2024).

This growth is supported by a young, tech-savvy population, rising internet penetration, and supportive government policies aimed at fostering innovation and entrepreneurship. However, despite this favorable environment, many Indonesian technology startups struggle to establish a sustainable competitive advantage due to fierce competition, rapid technological changes, and resource constraints (Salam et al., 2018). Traditional business strategies alone are often inadequate in addressing these challenges, making business model innovation an essential avenue for differentiation and competitive positioning (Afuah, 2014).

Ghezzi & Cavallo (2020) and Cohen et al. (2017) said that, Scholars argue that business model innovation offers startups unique mechanisms to leverage emerging technologies and ecosystem opportunities to enhance their competitiveness. For example, platform-based business models that facilitate multi-sided interactions between users, providers, and partners have become prevalent among Indonesian startups, allowing them to scale rapidly and achieve network effects (Prijadi et al., 2023; Santoso, 2024; Prasetyo, 2022). These innovations in the business model are not merely adjustments to operational tactics but are strategic choices that can redefine competitive landscapes and create lasting value propositions (Bereznoy, 2019).

Furthermore, empirical studies have established a positive relationship between business model innovation and competitive advantage, highlighting how firms that successfully innovate their business models often outperform their peers in terms of growth, profitability, and market positioning. For technology startups, this relationship is particularly pronounced given their need to rapidly validate, adapt, and scale their value propositions in response to evolving customer needs and technological advancements. By innovating their business models, startups can circumvent traditional resource limitations through creative partnerships, alternative revenue mechanisms, and innovative customer engagement strategies (Kartika, 2024).

In Indonesia, successful cases of business model innovation can be observed in startups such as Gojek and Tokopedia, which have transformed from single-service platforms into comprehensive digital ecosystems through continual business model reinvention. These firms exemplify how BMI enables technology startups to adapt to market dynamics, expand into new domains, and secure competitive advantages through scalability, platform orchestration, and ecosystem leadership (Addanki, 2024). Their success underscores the strategic importance of BMI in the context of emerging markets, where conventional Western business strategies may not be entirely applicable due to different institutional, cultural, and infrastructural conditions.

Moreover, the Indonesian government's digital roadmap, including initiatives such as "1000 Startups Movement" and "Making Indonesia 4.0," reflects a national commitment to fostering innovation-driven entrepreneurship, thereby creating fertile ground for business model experimentation. Such policies provide startups with access to mentorship, funding, and technological resources, thereby enhancing their capacity to innovate and compete (Clarysse & Bruneel, 2007). Nevertheless, leveraging these opportunities requires startups to possess not only technological capabilities but also the strategic acumen to innovate their business models effectively.

METHODOLOGY

Research Design and Approach

This study employs a quantitative approach with a causal explanatory research design. The objective is to examine the causal relationship between business model innovation and competitive advantage in Indonesian technology startups operating in the digital service platform sector. This design is appropriate for empirically testing hypotheses and explaining cause–effect relationships among variables.

Research Object and Unit of Analysis

The focus of this research is technology startups in Indonesia that operate digital platform-based services, including e-commerce, fintech, edtech, healthtech, and digital transportation services. The unit of analysis is the startup organization or company, with the criterion that the startup has been operating for at least three years to ensure that the impact of business model innovation on competitive advantage can be adequately observed.

Population, Sample, and Sampling Technique

The population of this study consists of technology startups operating in Indonesia. The sampling technique used is purposive sampling, in which samples are selected based on predefined criteria. The selected startups are those that are officially registered or well-recognized within the Indonesian startup ecosystem, such as startups listed in Startup Ranking, DailySocial.id, or those that have received venture capital funding. Respondents are middle- to senior-level management personnel who are directly involved in strategic decision-making related to innovation and business development. The targeted sample size ranges from 100 to 150 startups, in accordance with the recommendations of Wolf et al. (2013) for Structural Equation Modeling (SEM) analysis.

Data Collection Method

Data were collected using a structured online questionnaire distributed to startups that met the sampling criteria. The questionnaire was designed using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to capture respondents' perceptions of the research variables.

Research Instruments and Measurement of Variables

The questionnaire consists of three main sections. The first section contains respondent and company profile information. The second section measures business model innovation, adapted from Clauss (2017), covering three dimensions: value creation innovation, value proposition innovation, and value capture innovation. The third section measures competitive advantage, adapted from Barney's (1991) framework, including indicators such as customer satisfaction, market share, profitability, and organizational flexibility and adaptability.

Instrument Validity and Reliability

Prior to data collection, the research instrument was validated through expert judgment involving academics specializing in business innovation and startup practitioners to ensure content validity and clarity. Construct validity and reliability were assessed using factor loadings, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability values.

Data Analysis Technique

The collected data were analyzed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the assistance of SmartPLS software. The analysis began with outer model evaluation to assess convergent validity (loading factors ≥ 0.70 and AVE ≥ 0.50), discriminant validity (Fornell–Larcker criterion and HTMT values < 0.90), and construct reliability (composite reliability ≥ 0.70). The inner model was then evaluated using path coefficients obtained through a bootstrapping procedure with 5,000 resamples, as well as by examining R^2, f^2, Q^2, and Goodness of Fit (GoF) values.

Common Method Bias Testing

To anticipate potential common method bias, Harman's Single Factor Test was applied to assess whether a single factor accounted for the majority of covariance among the measured variables.

Ethical Considerations

Ethical aspects were considered throughout the research process, including maintaining respondent confidentiality, obtaining voluntary participation and informed consent, and ensuring that all collected data were used solely for academic research purposes.

RESULTS AND DISCUSSION

This study was conducted to empirically investigate the impact of Business Model Innovation (BMI) on the competitive advantage of technology startups operating within Indonesia's dynamic digital service platform sector. As outlined in the research methodology, a quantitative approach was employed with a focus on startups that are actively engaged in platform-based business models across key digital sectors such as e-commerce, fintech, edtech, healthtech, and mobility services. The rationale for selecting these sectors is their significant contribution to Indonesia's fast-growing digital economy, which has been consistently highlighted in national reports and industry analyses. These sectors also exhibit intense competition and rapid technological evolution, making them ideal contexts for exploring how innovations in business models influence firms' competitive standing.

To gather reliable and relevant data, the study utilized a purposive sampling method targeting technology startups that met specific criteria: operational for a minimum of three years, employing platform-based models, and having strategic personnel involved in innovation processes. Respondents primarily consisted of individuals at managerial or executive levels with direct responsibilities related to strategic decisions, business development, and innovation. This ensured that the data reflected informed perspectives on the company's strategic direction and market positioning.

Descriptive Statistics

Descriptive statistics are presented to provide an overview of the characteristics of the respondents and the startups involved in this study. This analysis aims to describe the distribution of respondents based on industry sector, company age, and managerial position, which are important for understanding the context in which business model innovation and competitive advantage are examined. By outlining these profiles, the study ensures that the sample reflects the diversity of technology startups operating in Indonesia's digital service platform ecosystem and offers an initial understanding of the organizational and managerial backgrounds of the respondents before further analysis is conducted.

Table 1. Respondent Profile

Category	Number (%)
Industry Sector	
E-commerce	45 (35.1%)
Fintech	32 (25.0%)
Edtech	19 (14.8%)
Healthtech	15 (11.7%)
Mobility Services	17 (13.3%)
Company Age	
3−5 years	87 (68.0%)
> 5 years	41 (32.0%)
Respondent Position	
Business & Innovation Manager	71 (55.5%)
VP/CEO/COO/CTO	57 (44.5%)

The respondent profile indicates that the data were obtained from a diverse range of technology startups operating across multiple digital service domains. This diversity supports the representativeness of the sample in capturing different strategic and operational contexts within Indonesia's platform-based digital economy. The variation across sectors allows for a broader understanding of how business model innovation is implemented and perceived under differing market dynamics and competitive pressures. In terms of organizational maturity, the distribution of company age suggests that most participating startups have progressed beyond the initial establishment phase and entered a more stable stage of development. At this stage, firms typically

face strategic challenges related to scaling, differentiation, and sustainability, making business model innovation particularly relevant as a source of competitive advantage. Regarding respondent roles, the positions held by participants reflect direct involvement in strategic decision-making and innovation-related activities. This enhances the credibility of the responses, as the insights are derived from individuals with sufficient authority and practical experience in shaping business models and competitive strategies within their organizations. Consequently, the data provide a reliable basis for examining the relationship between business model innovation and competitive advantage in technology startups.

Measurement Model Evaluation (Outer Model)

The evaluation of the measurement model (outer model) was conducted to assess the adequacy of the constructs in measuring the latent variables used in this study. This step is essential to ensure that the indicators employed are both valid and reliable before proceeding to the structural model analysis. Convergent validity and internal consistency reliability were examined using the Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's Alpha values. The results of this evaluation are presented in Table 2.

Table 2. Convergent Validity and Reliability

Construct	AVE	CR	Cronbach's Alpha
Business Model Innovation	0.626	0.892	0.862
Competitive Advantage	0.601	0.879	0.846

The results of the measurement model evaluation indicate that the constructs used in this study demonstrate satisfactory convergent validity and internal consistency. The indicators associated with each construct are able to adequately capture the underlying concepts, suggesting that the measurement items share a sufficient level of common variance. Furthermore, the reliability assessment shows that the constructs are measured with a high degree of consistency. This implies that the indicators for each construct perform coherently in representing their respective latent variables. The robustness of the measurement model provides a strong foundation for subsequent structural model analysis, as it minimizes measurement error and enhances confidence in the examination of the relationship between business model innovation and competitive advantage. These findings confirm that the measurement model is appropriate for further hypothesis testing and supports the validity of the conclusions drawn from the structural analysis.

Discriminant Validity (HTMT Criterion)

Discriminant validity was assessed to ensure that each construct in the measurement model is empirically distinct and captures a unique concept. In this study, discriminant validity was evaluated using the Heterotrait–Monotrait (HTMT) ratio, which is considered a robust criterion for assessing the extent to which constructs differ from one another. The HTMT results for the constructs examined in this research are presented in Table 3.

Table 3. Discriminant Validity (HTMT Ratio)

Construct Pair	HTMT Value
Business Model Innovation – Competitive Advantage	0.761

Table 3 shows the HTMT (Heterotrait-Monotrait) ratio between Business Model Innovation and Competitive Advantage at 0.761, which is below the recommended threshold of 0.90. This indicates strong discriminant validity, meaning that these two constructs are conceptually distinct from one another and measure different aspects of organizational performance. Therefore, the findings support the use of both constructs within the same analytical model without risk of conceptual overlap.

Structural Model Evaluation (Inner Model)

The structural model (inner model) evaluation was conducted to examine the hypothesized relationships between the latent constructs and to assess the model's explanatory and predictive capabilities. This stage of analysis focuses on evaluating the strength and significance of the structural paths, as well as the proportion of variance in the endogenous construct explained by

the exogenous variable. Key indicators used in this evaluation include the coefficient of determination (R^2), path coefficients and their significance levels, effect size (f^2), and predictive relevance (Q^2). The results of the structural model evaluation are presented in Tables 4, 5, and 6.

Table 4. Structural Model – R^2 Value

Dependent Variable	R^2
Competitive Advantage	0.542

Table 4 shows the R^2 value for Competitive Advantage at 0.542, which indicates that 54.2% of the variance in Competitive Advantage can be explained by the variable Business Model Innovation. This R^2 value reflects a moderate to strong explanatory power, suggesting that Business Model Innovation plays a crucial role in determining the competitive advantage of digital service startups in Indonesia. These findings validate the study's hypothesis that effective innovations in business models significantly influence a firm's ability to gain and sustain competitive advantages in a dynamic digital economy

Table 5. Path Coefficient and Significance

Relationship	Path Coefficient (β)	t-Statistic	p-value
Business Model Innovation → Competitive Advantage	0.736	12.418	< 0.001

Table 5 presents the path coefficient between Business Model Innovation and Competitive Advantage, which is positive and significant ($\beta = 0.736$, $p < 0.001$). This indicates that an increase in Business Model Innovation leads to a substantial improvement in Competitive Advantage. The t-statistic of 12.418 confirms the robustness of this relationship. These results empirically support previous literature stating that innovative business models are key drivers of sustained competitive advantage, particularly in volatile and technology-driven markets.

Table 6. Effect Size (f^2) and Predictive Relevance (Q^2)

Effect	f^2	Q^2
BMI → Competitive Advantage	0.409	0.387

Table 6 shows that the effect size (f^2) is 0.409, which falls into the large effect category according to Hair et al. (2019). This means Business Model Innovation exerts a significant influence on Competitive Advantage. Additionally, the Q^2 value of 0.387 indicates strong predictive relevance, confirming that the model not only explains the relationship but can also predict future observations reliably. These findings reinforce the strategic importance of continuously innovating business models for startups aiming to secure a competitive edge in Indonesia's rapidly evolving digital markets.

Additional Analysis: Dimensions of Business Model Innovation (BMI)

The additional analysis was conducted to provide a more detailed understanding of how the individual dimensions of Business Model Innovation (BMI) influence competitive advantage. Rather than treating BMI as a single aggregate construct, this analysis decomposes it into its core dimensions value creation innovation, value proposition innovation, and value capture innovation to examine their respective contributions. By analyzing these dimensions separately, the study aims to identify which aspects of business model innovation exert the strongest influence on competitive advantage in digital service startups. The results of this dimensional analysis are presented in Table 7.

Table 7. Dimensions of BMI and Impact on Competitive Advantage

Dimensions of BMI	Path to Competitive Advantage (β)	t-Statistic	p-value
Value Creation Innovation	0.421	4.792	< 0.01
Value Proposition Innovation	0.495	6.533	< 0.001
Value Capture Innovation	0.376	2.990	< 0.05

The additional analysis highlights that the different dimensions of business model innovation contribute to competitive advantage through distinct strategic mechanisms. Each dimension demonstrates a meaningful role in strengthening a firm's market position, indicating that

business model innovation is not a single, uniform construct but a combination of interrelated strategic innovations. The findings suggest that innovations related to how value is offered to customers play a particularly important role in enhancing competitiveness. This indicates that startups operating in digital platform environments gain stronger advantages when they focus on refining and differentiating their value propositions in response to market needs and user expectations. Meanwhile, innovations in value creation and value capture also contribute positively, reflecting the importance of internal capability development and effective monetization strategies in sustaining competitive outcomes. These results imply that technology startups should adopt a balanced approach to business model innovation by aligning customer-oriented innovations with operational processes and revenue mechanisms. Such alignment enables firms to respond more effectively to competitive pressures and supports long-term advantage in dynamic digital markets.

Discussion

Business Model Innovation as a Driver of Competitive Advantage in Indonesian Digital Startups

This study aimed to examine the impact of Business Model Innovation (BMI) on the Competitive Advantage of technology startups in Indonesia's digital service platform sector. The findings clearly affirm that BMI significantly strengthens competitive advantage. In the context of previous literature, this reinforces the argument that in rapidly evolving digital economies, the traditional boundaries of competition have shifted from operational excellence alone to how companies rethink and innovate the very logic of their business (Hammer, 2024). The results of this study strengthen the theoretical foundations laid by the Dynamic Capabilities Theory and the Resource-Based View (RBV) (Barney, 1991). Dynamic capabilities theory emphasizes that organizations achieve competitive advantage through their capacity to sense opportunities, seize them, and transform accordingly. In this research, BMI acts as one such dynamic capability. Indonesian startups, operating in highly competitive and volatile sectors such as e-commerce, fintech, and edtech, must continuously innovate how they create, deliver, and capture value to sustain relevance and performance.

These findings align with prior empirical studies (Clauss, 2017), affirming that the role of BMI is not supplementary but central to competitiveness, particularly in digital platform ecosystems where rapid changes in consumer behavior and technology disrupt markets frequently. Furthermore, this study expands on the Resource-Based View (RBV) by showing that competitive advantage in startups is not merely derived from static resources but from the continuous ability to reconfigure business models that leverage those resources innovatively. While RBV has traditionally focused on tangible and intangible assets, this research supports the evolving view that innovative business models themselves become a valuable, inimitable resource that competitors cannot easily replicate.

For Indonesian startups, the findings of this study emphasize the strategic importance of ongoing business model experimentation. In markets characterized by intense competition, platform dependency, and frequent technological disruption, static business models quickly lose relevance. Startups need to focus on evolving their value propositions to meet changing customer expectations, which this study found to have the strongest impact on competitive advantage. This aligns with the increasing consumer demand in Indonesia for personalized, seamless, and user-friendly digital services across sectors. Additionally, while value creation and value capture innovations are slightly less dominant than value proposition innovation, they remain critical. Startups that optimize internal processes (value creation) and adapt revenue mechanisms (value capture) are better positioned to build resilience against market shocks and shifts. This insight is particularly relevant for startups pursuing scalability and sustainability in Indonesia's emerging markets, where monetization models such as subscriptions, data-driven insights, and multi-sided platforms are still maturing.

Furthermore, policymakers, investors, and ecosystem builders in Indonesia should take note of these findings. Supporting startups through funding is no longer sufficient without providing mentorship, infrastructure, and policy that encourage strategic thinking around continuous

business model renewal. This research suggests that such innovation capacity is foundational to maintaining Indonesia's competitive edge in Southeast Asia's digital economy. This study also offers context-specific insights for Indonesia's unique digital landscape. Unlike more mature markets, Indonesia's startup ecosystem is characterized by hyper-competition and accelerated growth cycles driven by mobile-first consumers, uneven digital infrastructure, and evolving regulatory frameworks. Startups operating in this environment face pressures to adapt quickly or risk irrelevance. The empirical validation of BMI's significant role in competitive advantage emphasizes that strategic agility must extend beyond product innovation to include business model reconfiguration. In addition, this study responds to calls within the literature for more research on BMI in emerging economies (Zott et al., 2011; Foss & Saebi, 2017), where resource constraints and institutional voids create distinct challenges and opportunities. Indonesian startups' ability to innovate business models demonstrates that even in such environments, strategic innovation, not merely technological adoption, is key to sustained competitive advantage.

CONCLUSION

The current research is interested in the impact of Business Model Innovation (BMI) on Competitive Advantage of technology startups in the market of digital services platform industry in Indonesia. The results provide empirical support to the stated significance of BMI having a constructive impact on the competitive advantage, namely, the innovative methods of value creation, delivery, capture, are, indeed, upbeat on customer pleasure, benefit, a market share, and business adjustability. The dimension of BMI where the dimension has proved to be the most influential dimension in enhancing the value competitive advantage is the Value Proposition Innovation which comes ahead of the Value Creation Innovation and Value Capture Innovation. These findings indicate that startups will need to constantly improve their services and add distinctive value when addressing emerging consumer needs in Indonesia digital economy that operates rapidly. Theoretically, this paper keeps Dynamic capabilities perspective and Resource-Based View (RBV) by establishing the fact that BMI is a dynamic organizational capability that is necessary in maintaining a competitive edge in very competitive and volatile markets. In practice, the findings stress that the business model innovation, in combination with technological innovation, must be viewed as a strategic practice adopted by Indonesian technology start-ups to make them competitive and resilient. Moreover, the study is of significance to emerging market business model innovation research, which is a relatively new body of research; the findings presented here are immediately applicable into the perspective of policymakers, investors, and entrepreneurs focused on the Indonesian digital ecosystem. Lastly, several limitations of the study are also admitted, among which one can distinguish the cross-sectional nature of the study and its emphasis on a specific sector. The future studies can take a step further on this investigation by conducting longitudinal studies and comparisons among different industries and regions furthering the knowledge of how BMI influences competitive advantage.

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