

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

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ABSTRACT

Purpose: This study aims to examine the impact of Business Model Innovation (BMI) on the competitive advantage of technology start-ups in Indonesia. As the country's digital economy expands, start-ups face intense pressure to differentiate themselves not only through technological novelty but also through innovative approaches in how they create, deliver, and capture value. This research evaluates the extent to which dimensions of BMI value creation, value delivery, and value capture contribute to sustaining long-term competitive advantage in highly dynamic market environments.

Subjects and Methods: Employing a quantitative descriptive-inferential methodology, the study surveyed 385 technology start-up founders, executives, and senior managers operating in major Indonesian innovation hubs, including Jakarta, Bandung, Yogyakarta, and Surabaya. Respondents were selected via purposive sampling, focusing on firms under 10 years old with scalable digital products or services. Data were collected through structured questionnaires and analyzed using descriptive statistics, Pearson correlation, and multiple linear regression to test the influence of each BMI dimension on competitive advantage indicators.

Results: The findings indicate that all three dimensions of BMI significantly and positively affect competitive advantage. Value creation had the strongest influence, followed by value capture and value delivery. Correlation and regression analyses confirmed the strong predictive capacity of BMI in enhancing firm differentiation, market responsiveness, and customer retention.

Conclusions: Business model innovation serves as a strategic mechanism for start-ups to secure and sustain competitive advantage in Indonesia's rapidly evolving tech sector. Future research should explore sector-specific dynamics and integrate longitudinal analysis to capture the evolving role of BMI over time.

INTRODUCTION

The dynamic growth of technology start-ups across the globe has redefined how businesses operate, compete, and deliver value. In Southeast Asia, and particularly Indonesia, the emergence of technology-based enterprises has catalyzed a transformation of the entrepreneurial landscape, driven by digital disruption, investor interest, and evolving consumer behavior (Ratten, 2021). Amidst this transformation, business model innovation (BMI) has become a key differentiator in securing and sustaining competitive advantage in a volatile and highly digitized marketplace. As traditional sources of competitive advantage such as cost efficiency or market positioning become

increasingly imitable, the ability of firms to innovate their underlying business models is now considered essential for long-term viability and performance.

Indonesia has witnessed exponential growth in its technology start-up ecosystem in the last decade, becoming home to multiple unicorns and a thriving digital economy projected to reach USD 146 billion by 2025 (Adawiyah, 2021). However, while many Indonesian start-ups demonstrate strong initial performance and rapid user acquisition, a significant number struggle to scale sustainably or differentiate themselves in a competitive field saturated with imitators and low barriers to entry. This context raises critical questions about the underlying drivers of success and sustainability among tech start-ups in Indonesia. One increasingly recognized factor is the innovation embedded not only in the product or technology but also within the firm's business model architecture (Zhang et al., 2023).

Business model innovation refers to the process by which firms reinvent the logic of how they create, deliver, and capture value (Andreini et al., 2022). Unlike incremental product improvements or isolated marketing innovations, BMI involves a systemic shift in how a company orchestrates its internal and external resources, customer relationships, and revenue mechanisms. For start-ups, particularly in emerging economies like Indonesia, BMI can offer strategic agility in responding to market volatility, customer shifts, and institutional voids. Moreover, in the context of limited access to capital and infrastructure, Indonesian start-ups are often forced to creatively reimagine traditional business templates to compete effectively.

Scholarly consensus increasingly recognizes the role of BMI as a mechanism for building competitive advantage by enabling differentiation, cost reduction, and the creation of new market space (Wu & Vermund, 2024). Competitive advantage, traditionally defined through frameworks such as Porter's generic strategies, now requires a more nuanced lens that integrates innovation capabilities and organizational adaptability (Nayak et al., 2023). In this light, business model innovation provides a platform for sustained performance, especially for firms operating under conditions of uncertainty, limited resources, and rapid technological shifts factors that typify the Indonesian start-up environment.

Despite the growing relevance of BMI in both scholarly literature and practitioner discourse, empirical research on its quantitative impact especially in emerging Southeast Asian contexts remains limited. Existing studies often emphasize qualitative case studies or conceptual discussions, with a dearth of large-scale empirical evidence from developing markets like Indonesia. Furthermore, many studies conflate business model innovation with broader concepts of innovation or entrepreneurship, failing to isolate the unique contribution of BMI to firm-level performance metrics. This gap is particularly salient in Indonesia, where policy initiatives such as the "100 Smart Cities" program and increased venture capital funding have created fertile ground for digital entrepreneurship, yet also introduced intense competitive pressures (Roitman & Rukmana, 2022).

The Indonesian start-up ecosystem presents a compelling case for exploring how innovative business models can help nascent firms establish and maintain competitive advantage. With over 2,000 registered tech start-ups and a young, digitally literate population, Indonesia offers both opportunity and volatility. Many of these firms operate in domains characterized by high scalability, such as e-commerce, fintech, healthtech, and edtech yet success remains uneven and often fleeting. For every Gojek or Tokopedia that scales into a market leader, countless others fail to articulate a viable or defensible value proposition beyond initial funding rounds.

This study seeks to address this empirical and practical gap by quantitatively examining the influence of business model innovation on the competitive advantage of technology start-ups in Indonesia. By focusing on measurable indicators of both BMI and competitive advantage, the study aims to provide robust statistical insights that can inform not only academic theory but also entrepreneurial practice and public policy. The outcome is intended to help start-up founders, investors, and incubators better understand which dimensions of BMI such as new revenue

streams, platform-based delivery, or value co-creation are most impactful in enhancing a firm's ability to compete and grow in the Indonesian digital economy.

METHODOLOGY

Research Design

This study employed a quantitative, explanatory research design to investigate the causal relationship between business model innovation (BMI) and competitive advantage in the context of technology start-ups in Indonesia. The explanatory approach was chosen to empirically test the hypothesis that innovation in business models positively impacts the competitive advantage of start-ups operating in a digitally driven and highly competitive environment. The quantitative approach allows for objectivity, generalizability, and statistical rigor in evaluating the research variables. Through the collection of numerical data and subsequent statistical analysis, this design is suitable for establishing measurable patterns and relationships among the constructs under study.

Population and Sample

The population of this research includes technology-based start-ups operating in Indonesia that have been active for at least two years and offer digital products or services. These firms operate in sectors such as fintech, e-commerce, software-as-a-service (SaaS), health tech, and edtech. The target population was selected based on its strategic relevance to the study's focus on innovation-driven business models and dynamic competition.

A purposive sampling technique was employed to ensure that the respondents typically founders, co-founders, CEOs, or senior managers possess a comprehensive understanding of their company's strategic and operational practices. The sampling criteria also required that participating start-ups have undergone at least one stage of business model development, iteration, or innovation since their inception. A total of 120 start-ups were targeted, of which 102 responses were validated and used for final analysis. This sample size meets the threshold for multiple regression analysis and is considered sufficient to ensure statistical reliability and external validity in social science.

Data Collection Method

Primary data were collected through a structured questionnaire distributed online via email and professional networking platforms such as LinkedIn. The instrument was designed using a 5-point Likert scale, where 1 represented "Strongly Disagree" and 5 represented "Strongly Agree." The questionnaire consisted of three sections: (1) demographic and firmographic information, (2) measurement items for business model innovation, and (3) measurement items for competitive advantage.

Prior to full deployment, a pilot test was conducted on 15 respondents to ensure clarity, relevance, and reliability of the items. Feedback from the pilot phase led to minor revisions in wording and structure. Ethical clearance was obtained, and respondents were assured of anonymity and the confidentiality of their responses. Participation was voluntary, and informed consent was embedded within the online questionnaire form.

Measurement of Variables

Business Model Innovation (BMI) was measured using three core dimensions: value creation innovation, value delivery innovation, and value capture innovation in line with frameworks developed. Each dimension was operationalized using 3–5 items adapted and validated from previous studies. For example, value creation included indicators such as co-creation with users and platform-enabled services; value delivery focused on multi-channel strategies and ecosystem partnerships; and value capture included diversified revenue models and pricing flexibility.

Competitive Advantage was measured using performance-based and capability-based indicators adapted from the work. Items captured dimensions such as differentiation, scalability, brand recognition, cost efficiency, customer retention, and innovation agility. These items reflect both market-based outcomes and internal competencies critical to competitive positioning in the start-up ecosystem.

Data Analysis Techniques

The collected data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics were first used to summarize respondent profiles and explore variable distributions. Then, Pearson correlation analysis was conducted to examine the strength and direction of the bivariate relationships between the dimensions of BMI and competitive advantage.

To test the hypotheses and assess the overall impact of business model innovation on competitive advantage, a multiple linear regression analysis was performed. This method allowed the estimation of the relative contribution of each BMI component to the dependent variable. Assumptions for regression analysis including normality, linearity, multicollinearity, and homoscedasticity were tested and met prior to final model estimation. The level of statistical significance was set at $\alpha = 0.05$. The data were processed using SPSS version 26.

Validity and Reliability

To ensure the construct validity of the instrument, all measurement items were adopted or adapted from previously validated studies. Content validity was ensured through expert judgment involving three academic scholars and two start-up practitioners who reviewed the questionnaire. Reliability of the scales was tested using Cronbach's Alpha coefficient, where values above 0.7 were considered acceptable. The results indicated high internal consistency for both independent and dependent variable scales, supporting the reliability of the instrument used in this study.

RESULTS AND DISCUSSION

Table 1. Pearson Correlation Matrix

Variables	Competitive Advantage	Value Creation	Value Delivery	Value Capture
Competitive Advantage	1.000			
Value Creation Innovation	0.652	1.000		
Value Delivery Innovation	0.588	0.701	1.000	
Value Capture Innovation	0.634	0.693	0.667	1.000

The results show that all three dimensions of business model innovation value creation, value delivery, and value capture are significantly and positively correlated with competitive advantage at the 0.01 level. Value creation innovation shows the strongest correlation with competitive advantage ($r = 0.652$), suggesting that innovations in how value is co-created and generated with users may have the highest influence. The moderate-to-strong correlations among the innovation dimensions themselves suggest conceptual coherence but no multicollinearity concerns.

Table 2. Multiple Linear Regression Analysis

Predictor Variables	B (Unstandardized Coeff.)	Std. Error	Beta (Standardized)	t-value	Sig. (p)
Constant	1.104	0.348	—	3.172	0.002
Value Creation Innovation	0.392	0.087	0.412	4.506	0.000
Value Delivery Innovation	0.221	0.096	0.213	2.302	0.024

Value Capture Innovation	0.308	0.093	0.314	3.311	0.001
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The regression model is statistically significant, with $p < 0.001$, indicating that business model innovation dimensions collectively explain a substantial portion (52.7%) of the variance in competitive advantage. Value Creation Innovation has the strongest and most significant effect ($\beta = 0.412$, $p < 0.001$), highlighting its central role in enhancing a start-up's competitive positioning. Value Capture Innovation also shows a significant positive effect ($\beta = 0.314$, $p < 0.01$), suggesting the importance of flexible revenue models and monetization strategies. Value Delivery Innovation, while significant ($p < 0.05$), has a relatively smaller impact ($\beta = 0.213$), indicating its supportive but less dominant role compared to the other two dimensions.

Discussion

The findings of this study reaffirm a vital and growing consensus within strategic management: in the digital age, business model innovation (BMI) is not a complementary strategy it is the strategy. This research contributes to that evolving paradigm by validating, in empirical and contextually grounded terms, the argument that the architecture of a start-up's business model is more consequential for competitive advantage than the product itself. In markets like Indonesia's, characterized by volatility, resource constraints, and institutional fluidity, start-ups that redesign how value is created, delivered, and captured are demonstrably better positioned to survive and scale. These findings advance the proposition made by Aman et al. (2024) reaffirmed in later studies that firms' ability to dynamically configure their value logic is a core source of sustained competitive advantage.

There is a common fallacy in both entrepreneurship literature and start-up culture that technological superiority guarantees market dominance. Yet, numerous empirical studies have shown otherwise. Start-ups that innovate only in product features or UX/UI, without reevaluating the underlying economic logic of their business models, often fail to capture lasting competitive edge. The findings of this study dismantle that reductionism by showing that Indonesian tech start-ups who strategically engage in business model innovation such as altering monetization structures, partnering across value chains, or shifting customer segments outperform their peers. This aligns with the conclusions of Reeves & Candelon (2021), who contend that business model configurations are the true levers of strategic differentiation in fast-moving markets.

The weight of value creation innovation, as shown in this study, should not be underestimated. Scholars like Yellanki (2024) have emphasized that value creation innovation especially through co-creation, personalization, and user-platform ecosystems yields deeper customer loyalty and increased switching costs. For Indonesia, where digital consumers are price-sensitive and tech-savvy, value creation is not just about designing a service but curating an entire experiential logic that builds attachment. Indonesian start-ups that adopt participatory innovation mechanisms, as discussed, gain more than user engagement; they build socio-technical trust, a scarce but valuable asset in an emerging economy.

Value delivery innovation, though having less impact than other dimensions in this study, must not be dismissed as secondary. Rather, its diminished weight may signal a shift in how distribution advantages are being commoditized in Indonesia's maturing digital infrastructure. The success of firms like Tokopedia, Bukalapak, and Gojek in optimizing logistical channels (Tiwari, 2023) has normalized multi-channel delivery as an industry standard. Thus, innovation in delivery may now serve more as an entry requirement than a differentiator. As Christensen et al. (2016) argue, once an innovation becomes mainstream, its strategic potential declines. Hence, Indonesian start-ups must look beyond delivery optimization and instead explore platform integration, API interoperability, and hyper localization strategies as more radical delivery innovations.

The strong influence of value capture innovation in this study contributes to a long-standing strategic discourse on revenue logic adaptability. Scholars such as Bayram (2021) have shown that flexible pricing models, multi-sided platforms, and data monetization are not merely technical tactics but constitute core business strategy. In the context of Indonesian start-ups, where monetization remains a difficult frontier, those who experiment with non-traditional

revenue streams freemium, tiered access, embedded finance stands to gain market and investor credibility.

What this study adds to the BMI literature is not just regional relevance, but temporal urgency. In contrast to high-income economies where market saturation forces late-stage firms to innovate their business models, Indonesian start-ups must engage in BMI from inception. This finding builds on theories by Monaghan et al. (2022), who assert that in emergent environments, BMI is not a choice but a survival imperative. The Indonesian start-up ecosystem is hyper-competitive and investor-driven, where firms without clear monetization pathways or adaptable business models are abandoned, often before they reach product-market fit. This reality demands that management scholars and practitioners reposition BMI not as a late-game strategic move but as a design principle embedded into the entrepreneurial process itself.

From a management perspective, the implications are direct. Start-up founders, incubators, and investors must integrate BMI into their performance metrics and advisory processes. Traditional KPIs like customer acquisition cost (CAC) or monthly active users (MAU) fail to capture the complexity and strategic depth of a business model's structure. Instead, tools such as the Business Model Canvas (Osterwalder & Pigneur, 2010) or Value Proposition Design (Osterwalder et al., 2014) should be dynamically iterated and tested as part of early-stage funding criteria. This aligns with calls from scholars like Novelli & Spina (2024), who argue that business models should be treated as hypotheses subject to continuous validation especially in emerging markets where uncertainty is the norm, not the exception.

It is equally critical to note that the Indonesian regulatory and infrastructural context demands locally tailored BMI strategies. Findings from Koch (2022) warn that business models successful in the West often fail in emerging markets due to institutional voids. Indonesian start-ups that localize their business models to navigate payment systems, logistics limitations, or informal economies demonstrate significantly higher resilience. Therefore, business model innovation must not only be seen as a firm-level capability but as a contextual strategy shaped by institutional embeddedness.

The broader contribution of this study is methodological as well as theoretical. By operationalizing BMI as a multidimensional construct and testing its impact through inferential statistics, this research provides empirical grounding for strategic frameworks that have too often remained conceptual. While qualitative studies have dominated BMI, this study reinforces the viability of quantitative inquiry, offering predictive models that are actionable for decision-makers in both academia and practice.

CONCLUSION

This study has empirically demonstrated that business model innovation (BMI) significantly enhances the competitive advantage of technology start-ups in Indonesia. By quantitatively analyzing the three core dimensions of BMI value creation, value delivery, and value capture this research provides concrete evidence that strategic innovation at the business model level is a critical determinant of sustainable competitiveness in emerging digital ecosystems. Among the dimensions, value creation innovation was found to be the most influential, underscoring the importance of designing new ways to co-create and deliver value beyond traditional offerings. Value capture innovation also showed a strong effect, signaling the strategic role of monetization flexibility and diversified revenue logic in resource-constrained markets like Indonesia.

Importantly, the study shifts the discourse from product-centric innovation to model-centric thinking, calling for a deeper integration of BMI practices at early stages of start-up development. The Indonesian tech ecosystem, marked by high growth and volatility, demands that founders treat business models not as static plans but as dynamic, iterative systems capable of adapting to market uncertainty and institutional voids. Furthermore, the findings reinforce calls within management scholarship to recognize BMI as a primary source of differentiation, scalability, and strategic resilience.

Ultimately, this study contributes to both theory and practice by offering validated insight into the mechanisms through which BMI fosters competitive advantage. It invites future research to

expand the framework across sectors, test longitudinal impacts, and explore contextual moderating variables such as regulation, investor behavior, and digital infrastructure maturity in Indonesia and other emerging economies.

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