

Influence of Leadership and Digital Competence on Marketing Performance: Mediation by Innovation, Moderation by Competition

Marbawi¹, Nur Faliza², Aiyub Yahya³, Rina Malinda⁴, Pipi Santika⁵

Abstract

This study investigates the influence of strategic leadership, digital proficiency, technological innovation, and the competitive landscape on marketing success, highlighting the mediating function of technological innovation and the moderating effect of the competitive environment. We collected data from 305 employees at Indonesian Sharia Bank, Aceh Sharia Bank, and PT Pupuk Iskandar Muda. The SEM-PLS analysis reveals that strategic leadership and digital competency significantly improve technical innovation and marketing performance. Technological innovation substantially enhances marketing outcomes. While the competitive landscape improves marketing performance, its moderating influence is significant and detrimental. The study highlights the need for developing leadership and digital skills to drive innovation. By investing in these fields and understanding the competitive landscape, companies can strengthen their competitive edge and improve marketing results. Persist in implementing these discoveries.

Keywords: *Strategic Leadership, Digital Competence, Technological Innovation, Competitive Environment, Marketing Performance.*

Introduction

In the digital era, strategic leadership and digital competence are crucial for enhancing marketing effectiveness. Effective leadership often improves organizational performance through employee readiness (Katsaros et al., 2020) and external factors (Jaleha & Machuki, 2018). Digital leadership enables transformation (Senadjki, 2023), whereas the oversight of middle managers, supported by emotional intelligence, improves employee engagement (Li, 2024). The implementation of digital technology enhances strategic flexibility and benefits SMEs in international marketing (Zahoor & Lew, 2023). The amalgamation of digital marketing skills with leadership and technological proficiency enhances organizational performance (Amelda et al., 2021), whereas innovation is crucial for success (Smajlović et al., 2019). However, gaps remain in understanding the relationship among strategic leadership, digital competence, and performance. Research has investigated employee readiness as a mediator (Kurzahls et al., 2020), although further integration of organizational policies and digital practices is necessary (Gilli et al., 2022). The importance of digital leadership in organizational learning under uncertain circumstances and the identification of critical competencies require further investigation (Jian & Moon, 2021; Henderikx & Stoffers, 2022). This study amalgamates digital culture, leadership, and competence to enable organizational transformation. Looking at how organizations work together and examples like the Indonesian Navy's use of technology (Kalambo, 2024), along with ideas like inverse transparency (Gierlich-Joas et al., 2020), can help us learn a lot about how leadership and digital skills affect performance and innovation.

Literature Review

Investigates the critical influence of strategic leadership, digital proficiency, and technological innovation on fostering technological advancement, thereby impacting competitive advantage and performance. Research highlights its advantageous effects in telecommunications (Wanaswa et al., 2021), innovative ambidexterity (Rahimian & Rajaei, 2017), and small and medium-sized manufacturing firms (Walden et al.,

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2020). Digital competency, encompassing basic to expert skills, drives innovation and competition. Studies demonstrate its advantageous impact on business model innovation (Wang et al., 2023) and product development (Halili & Sulaiman, 2021), crucial for digital success.

Improving digital competence is crucial for increasing marketing effectiveness. Studies demonstrate that improving digital resource competencies enhances organizational performance (Jian & Moon, 2021), with digital competence acting as a mediator variable between strategic orientation and success (Jian & Moon, 2021). By creating new market items and optimizing firm procedures, technological innovation significantly enhances marketing performance. Research underscores its positive impact on the success of small businesses (Hakim et al., 2022) and the global strategies of corporations (Bagheri et al., 2019). The competitive environment shapes corporate strategies and capabilities, hence affecting marketing effectiveness. Studies demonstrate that it enhances the relationship among market orientation, innovation, and organizational performance in SMEs (Udriyah et al., 2019) and boosts performance in competitive industries (Eldor, 2019).

Digital competency influences the relationship between strategic leadership, technological innovation, and marketing performance. Research highlights its importance in fostering innovation and organizational transformation (Ruel et al., 2020; Mihardjo & Sasmoko, 2020), especially among executives (Çallı et al., 2022). Digital competency serves as a vital intermediate between technological innovation and marketing efficacy. Research demonstrates that it enhances organizational success by fostering creativity and digital engagement (Lucas et al., 2022; Heidari et al., 2021), with technical competencies being crucial (Ilomäki et al., 2014). The competitive landscape influences the technical innovation's marketing performance. One study shows that it has an effect on innovation outcomes (Xie, 2024). For example, the level of competition affects how well marketing innovations work (Peng et al., 2021), and the organization of resources makes green innovation easier (Xie, 2024).

Hypothesis 1 : Strategic leadership positively influences technological innovation.

Hypothesis 2 : Digital competence positively influences technological innovation.

Hypothesis 3 : Strategic leadership has a significant positive influence on marketing

Hypothesis 4 : Digital competence positively influences marketing performance.

Hypothesis 5 : Technological innovation positively influences marketing performance.

Hypothesis 6 : Competitive environment positively influences marketing performance

Hypothesis 7 : Digital competence mediates the influence of strategic leadership on marketing performance.

Hypothesis 8: Digital competence mediates the influence of technological innovation on marketing performance.

Hypothesis 9: Competitive environment moderates the relationship between technological innovation and marketing performance.

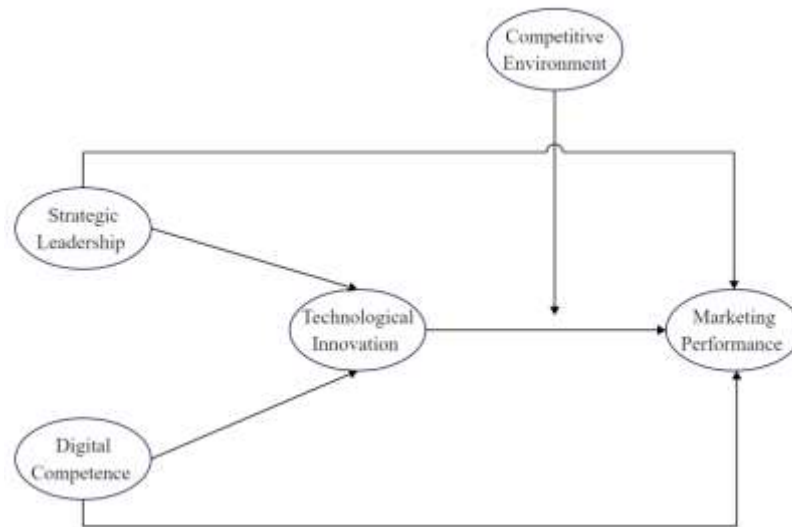


Figure 1. Conceptual Framework

Methodology

This research employs a variety of scales and contemporary frameworks for measuring variables. Samimi et al. (2022) developed a scale for strategic leadership encompassing visionary thinking, transformational leadership, strategic decision-making, and ethical leadership. Carretero et al. (2017) evaluated the DigComp 2.1 framework for assessing digital competence, encompassing the domains of information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. Hansens and Pauwels (2016) suggested measures for assessing marketing performance, including indicators such as customer equity, brand value, customer lifetime value, and return on marketing investment (ROMI). Rajapathirana and Hui (2018) created a scale for evaluating technical innovation, which includes variables such as product innovation, process innovation, marketing innovation, and organizational innovation. Ultimately, Mathooko and Ogutu (2015) refined the framework to evaluate the competitive environment. This includes elements such as industry rivalry, the threat of new entrants, the risk of replacements, the negotiating power of suppliers and customers, and the role of complementors.

We conducted the research in Lhokseumawe City with representatives from Bank Syariah Indonesia, Bank Aceh Syariah, and PT Pupuk Iskandar Muda. We conducted a quantitative analysis using SEM-PLS and Smart-PLS software. The research involves collecting data from 369 employees through questionnaires, focusing on direct, indirect (mediation), and moderation hypotheses. The analysis assesses model validity, reliability, and fit by examining path coefficients and interaction effects.

Result and Discussion

Measurement Model (Outer Model)

Convergent Validity indicates that each item demonstrates outstanding convergent validity. All items effectively evaluate the intended construct, hence affirming the validity of the measured construct. Convergent validity demonstrates that the research instrument used in evaluating the intended concepts is of high caliber, ensuring the reliability of the study outcomes. (Figure 1)

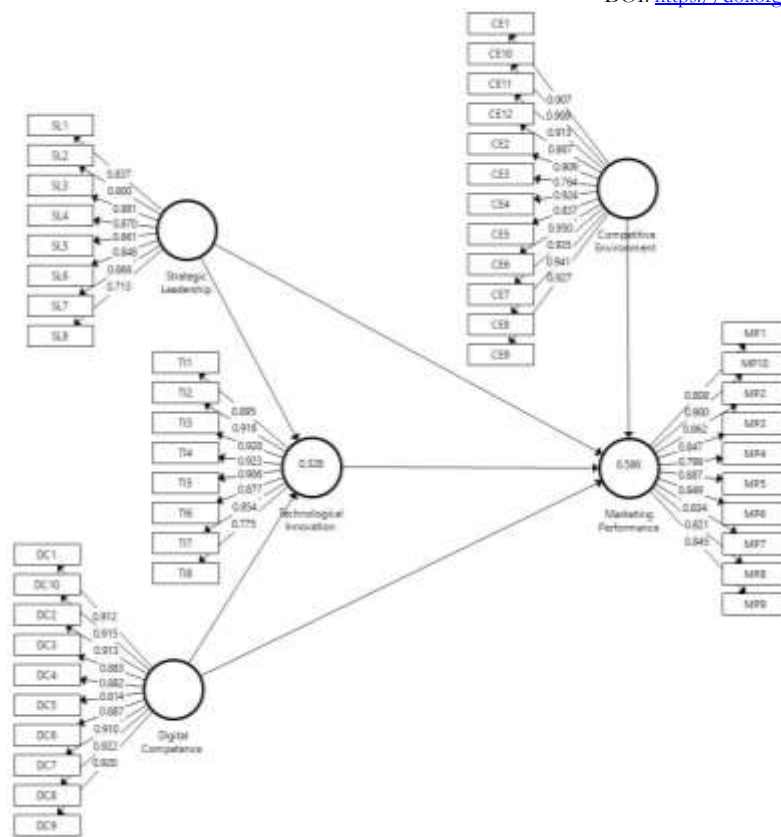


Figure 1. Measurement Model (Outer Model)

Table 1 of the measurement model (outer model) demonstrates that the constructs display exceptional reliability and validity. Cronbach's alpha scores range from 0.938 to 0.978, and rho_A values fluctuate between 0.941 and 0.980, both indicating strong internal consistency. The composite reliability values exceed 0.949, and the Average Variance Extracted (AVE) scores are over 0.50, ranging from 0.699 to 0.810, signifying robust convergent validity. These data confirm the dependability and validity of the concepts.

Table 1. Construct Reliability and Validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Competitive Environment	0,978	0,980	0,981	0,810
Digital Competence	0,973	0,973	0,976	0,803
Marketing Performance	0,956	0,959	0,962	0,715
Strategic Leadership	0,938	0,941	0,949	0,699
Technological Innovation	0,960	0,963	0,967	0,784

Table 2. The square root of the AVE (diagonal values) is higher than the inter-construct correlations (off-diagonal values) in Table 2, which proves that the test is discriminant. The square root of the AVE for the competitive environment is 0.900, exceeding its correlations with other variables, namely 0.463 for digital competence and 0.611 for marketing performance. This signifies that the constructs effectively evaluate distinct notions.

Table 2. Discriminant Validity

	Competitive Environment	Digital Competence	Marketing Performance	Strategic Leadership	Technological Innovation
Competitive Environment	0,900				
Digital Competence	0,463	0,896			
Marketing Performance	0,611	0,551	0,846		
Strategic Leadership	0,526	0,465	0,638	0,836	
Technological Innovation	0,484	0,428	0,593	0,536	0,886

Structural Model (Inner Model)

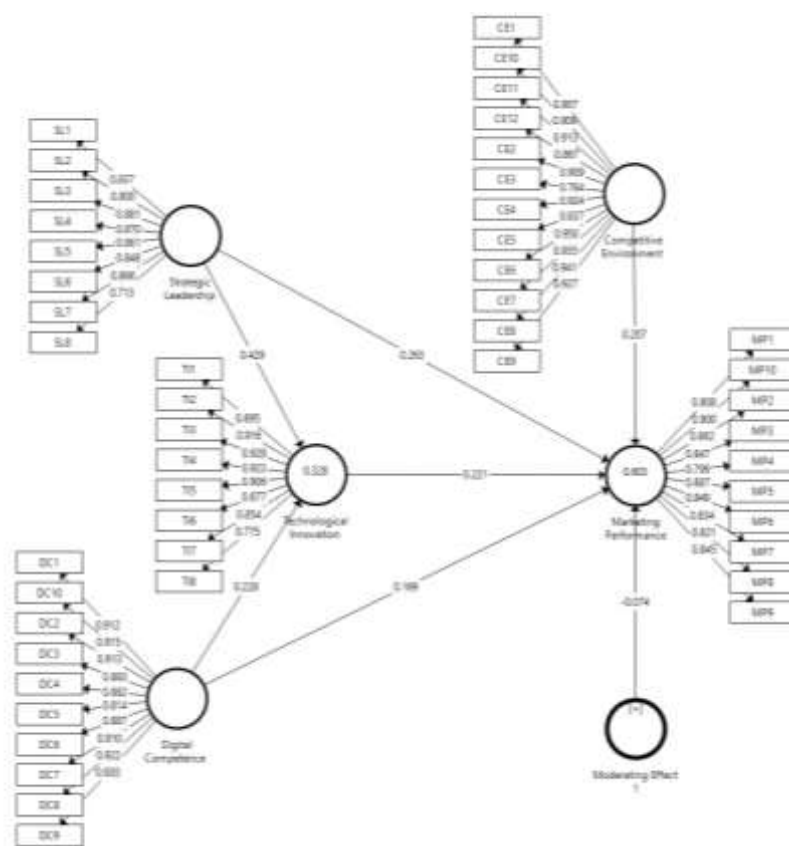


Figure 2. Structural Model (Inner Model)

Figure 3 demonstrates that strategic leadership significantly influences both technological innovation ($\beta = 0.429$) and marketing performance ($\beta = 0.263$). The route coefficients for direct and indirect effects in the structural model (inner model) illustrate these impacts. Digital competence positively influences technical innovation ($\beta = 0.228$) and marketing performance ($\beta = 0.169$). The competitive landscape affects marketing performance ($\beta = 0.207$), whereas technological innovation improves marketing performance ($\beta = 0.221$). The moderating impact negatively influences marketing performance ($\beta = -0.074$). Indirect effects indicate that digital competence and strategic leadership enhance marketing success through technical innovation, with coefficients of $\beta = 0.050$ and $\beta = 0.095$, respectively. All connections have statistical significance.

Table 3. R Square, R Square Adjusted, f Square

R Square	Original Sample (O)
Marketing Performance	0,603
Technological Innovation	0,328
R Square Adjusted	
Marketing Performance	0,596
Technological Innovation	0,323
f Square	
Competitive Environment -> Marketing Performance	0,063
Digital Competence -> Marketing Performance	0,048
Digital Competence -> Technological Innovation	0,061
Moderating Effect 1 -> Marketing Performance	0,043
Strategic Leadership -> Marketing Performance	0,101
Strategic Leadership -> Technological Innovation	0,215
Technological Innovation -> Marketing Performance	0,078

Table 3's analysis demonstrates the developed model's significant explanatory capability, with an R-squared value of 60.3% for marketing success and 32.8% for technological innovation. with few alterations. F Square highlights the influence of each moderator variable on marketing success and technological innovation, particularly illustrating the significant effects of strategic leadership on both aspects.

The Effect of Strategic Leadership on Technological Innovation

This study supports the idea that effective strategic leadership provides clear guidance, informed decision-making, and incentive for organizational members to achieve strategic marketing goals (Jaleha & Machuki, 2018; Akeke et al., 2021). Theoretical implications highlight the importance of strategic leadership in enhancing creativity and organizational effectiveness. Rahimian and Rajaei (2017) recommend that companies develop and improve strategic leadership practices inside their marketing strategies to achieve their objectives.

The Influence of Digital Competence on Technological Innovation

Digital Competence significantly affects Technological Innovation ($\beta = 0.228$, $p = 0.001$). This finding corroborates other research suggesting that enhancing digital competencies promotes the adoption and progression of technological advances inside enterprises (Jian & Moon, 2021; Halili & Sulaiman, 2021). Theoretical implications highlight the importance of developing digital competences in order to address the challenges posed by digital transformation. He et al. (2023) recommended that companies invest resources in enhancing their digital capabilities to improve innovation and competitiveness.

The Influence of Strategic Leadership on Marketing Performance

Strategic leadership has a positive and substantial impact on marketing performance ($\beta = 0.263$, $p = 0.001$). This discovery supports previous research indicating that effective strategic leadership provides clear direction, informed decision-making, and drive to achieve strategic marketing goals (Jaleha & Machuki, 2018; Akeke et al., 2021). Theoretical implications suggest that effective strategic leadership methods can enhance marketing efficacy by establishing clear visions and optimizing the allocation of corporate resources. This underscores the imperative of developing and reinforcing strategic leadership as a core element of marketing strategy to achieve targeted outcomes (Rahimian & Rajaei, 2017).

The Influence of Digital Competence on Marketing Performance

Digital Competence positively influences Marketing Performance ($\beta = 0.169$, $p = 0.006$), indicating that digital skills enhance the achievement of organizational marketing goals. Previous research demonstrates that the development of digital competencies can enhance organizational performance in marketing contexts (Jian & Moon, 2021; Wang et al., 2023). Theoretical implications highlight the integration of digital competencies into corporate marketing strategy. This highlights the imperative of investing in training and developing digital skills to improve marketing strategies (Charles, 2024).

The Impact of Technological Innovation on Marketing Performance

Technological innovation significantly influences marketing performance ($\beta = 0.221$, $p = 0.002$). This discovery supports the idea that the adoption of technological advancements may enhance organizational marketing effectiveness (Wanaswa et al., 2021; Rahimian & Rajaei, 2017). Theoretical implications underscore the significance of technological advancements in improving competitive advantage and organizational efficacy. We encourage companies to efficiently integrate the latest technologies into their marketing strategies to achieve competitive advantages.

The Influence of Competitive Environment on Marketing Performance

The competitive environment has a favorable and significant impact on marketing performance ($\beta = 0.207$, $p < 0.001$). This finding highlights that market conditions and competitive intensity affect organizational marketing outcomes (Peng et al., 2021; Xie, 2024). Theoretical implications underscore the importance for organizations to understand competition dynamics when formulating effective marketing strategies. This necessitates companies to adjust their marketing strategies in response to changing market dynamics.

The Influence of Competitive Environment as a Moderator on Marketing Performance

The competitive environment exerts a negative and significant moderating effect on the relationship between technological innovation and marketing performance ($\beta = -0.074$, $p < 0.001$). This indicates that the competitive landscape in which companies operate may weaken the positive relationship between technological innovation and marketing outcomes (Xie, 2024). Theoretical implications underscore the importance of accounting for varied competitive environments in the development of effective marketing strategies. Organizations must accurately identify and aggressively manage competitive factors that may hinder the transformation of technological breakthroughs into enhanced marketing performance. Understanding and adapting to these moderating elements can help organizations navigate market challenges and improve their marketing strategy accordingly.

The Function of Digital Competence in Mediating the Influence of Technological Innovation on Marketing Performance

Digital Competence mediates the relationship between Strategic Leadership and Technological Innovation concerning Marketing Performance ($\beta = 0.050$, $p = 0.042$). This discovery underscores the importance of digital competencies in linking leadership strategies and technology implementation to achieve strategic marketing goals (Ruel et al., 2020). Theoretical implications suggest that digital competence serves both as a complement and a mediator in organizational strategy processes. This compels companies to integrate digital competencies into every aspect of their marketing plan.

The Influence of Digital Competence as a Mediator between Strategic Leadership and Marketing Performance

The study indicates a significant indirect effect of strategic leadership on marketing performance through technology innovation ($\beta = 0.095$, $p = 0.008$). This highlights the importance of strategic leadership in promoting innovation that enhances marketing outcomes (Kurzahls et al., 2020; Rahimian & Rajaei, 2017). Organizations could potentially employ innovation-focused leadership strategies to enhance their competencies and marketing efficacy. It is imperative to foster a culture that prioritizes and supports technological breakthroughs to maintain competitive advantages in dynamic markets.

Conclusion

This study emphasizes the essential role of strategic leadership, digital expertise, technological innovation, and the competitive environment in enhancing marketing effectiveness. Leadership fosters innovation and strategic goals, while digital competence enables technological integration, improving competitiveness. These findings highlight the imperative of investing in leadership development and digital expertise to maintain competitive advantage.

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