

STRATEGIC MANAGEMENT APPROACHES FOR MSMEs TO THRIVE IN THE GREEN ECONOMY LANDSCAPE

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Abstract

The transition to a green economy presents a formidable challenge for Micro, Small, and Medium Enterprises (MSMEs), requiring them to adapt their strategic management frameworks to incorporate environmental sustainability. This study aims to identify and analyze effective strategic management approaches that enable MSMEs to achieve competitive advantage within this evolving landscape. Employing a quantitative research design, data were collected via a structured questionnaire from 250 MSME owners/managers operating in Indonesia's manufacturing and services sectors. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the proposed hypotheses. The results indicate that the integration of green business strategies and sustainable marketing practices significantly enhances sustainable competitive performance ($\beta = 0.45$, $p < 0.001$). Furthermore, digital transformation acts as a powerful moderating variable, strengthening the positive effect of green strategic orientation on competitive advantage ($\beta = 0.28$, $p < 0.01$). The study also reveals that investments in green entrepreneurial knowledge and ethical considerations positively influence the adoption of sustainable practices. The discussion contextualizes these findings within the existing literature, highlighting the synergistic role of digital tools and green finance integration. This research contributes to the strategic management literature by providing a validated framework for MSMEs to navigate the green economy, emphasizing the need for integrated, technology-enabled, and knowledge-driven approaches. The findings offer practical insights for MSME owners, policymakers, and business support organizations to foster sustainable and resilient enterprise development.

Keywords: Strategic Management, Green Economy, MSMEs, Competitive Advantage, Sustainable Marketing

Article history:

Submitted : 02 April 2026
Accepted : 28 April 2026
Published : 01 May 2026

1. Introduction

The global economic paradigm is undergoing a significant shift towards sustainability, often termed the "green economy," which prioritizes low-carbon, resource-efficient, and socially inclusive development (Putri & Indrawati, 2025). This transition, driven by regulatory pressures, changing consumer preferences, and the urgent need to address climate change, creates a complex new operating environment for all businesses. Micro, Small, and Medium Enterprises (MSMEs), which form the backbone of many economies, including Indonesia, face particular challenges in this landscape due to their typically limited resources, access to capital, and managerial capabilities (Rahmadanih & Jefriyanto, 2021). However, this transition also presents a unique opportunity for MSMEs to innovate, differentiate themselves, and build long-term resilience.

Historically, strategic management for MSMEs has focused on conventional factors such as cost leadership, operational efficiency, and market penetration. While these remain important, the green economy necessitates the integration of environmental and social dimensions into core business strategy (Hasrat et al., 2025). Recent literature highlights various concepts relevant to this integration. Studies have examined the role of **green entrepreneurial knowledge** as a foundational determinant for adopting sustainable practices (Iswanti et al., 2020). Other research explores **green marketing** and **sustainable marketing** as strategies to communicate environmental value to consumers and build brand loyalty (Ferine et al., 2023; Putri & Indrawati, 2025). Furthermore, the incorporation of **ethical investment** and **Environmental, Social, and Governance (ESG)** considerations into business decisions is gaining traction, linking financial performance with sustainability performance (Mubarok, 2022; Riski et al., 2023; Firdaus et al., 2025). The **Penta Helix ecosystem**—collaboration between academia, business, government, community, and media—is also identified as a crucial support system for empowering MSMEs towards sustainable entrepreneurship (Chakim et al., 2025).

Despite this growing body of research, a significant gap exists. Most studies address individual components—such as green marketing, social capital, or digital adoption—in isolation (Ferine et al., 2023; Fauziah et al., 2025; Rusman, 2025). There is a lack of integrated empirical research that examines how these diverse strategic elements combine within a cohesive **strategic management framework** specifically tailored for MSMEs in the green economy. Furthermore, while the moderating role of **digital transformation** is acknowledged as a catalyst for innovation and efficiency (Fauziah et al., 2025), its specific interaction with green strategic orientation to enhance competitive advantage requires further empirical validation.

Therefore, this study aims to bridge this research gap by developing and testing a comprehensive model. The primary objective is to investigate the impact of integrated green strategic management approaches—combining green business strategy, sustainable marketing, green entrepreneurial knowledge, and ethical/ESG considerations—on the sustainable competitive performance of MSMEs. Additionally, this research seeks to analyze the moderating effect of digital transformation on this relationship. By doing so, this paper contributes a holistic, evidence-based strategic roadmap for MSMEs to not merely survive but thrive in the green economy landscape.

2. Methods

This study employed a quantitative, explanatory research design to test hypothesized relationships between strategic management variables and MSME performance in the green economy. The research design was cross-sectional, collecting data at a single point in time to assess the current state and relationships among the constructs.

The target population was owners and key decision-makers of MSMEs in Indonesia operating in sectors sensitive to or impacted by green economy transitions, such as food processing, textiles, handicrafts, and eco-tourism services. A purposive sampling technique was used to ensure respondents had some awareness or engagement with sustainability practices. Data were collected through an online self-administered questionnaire distributed via MSME association networks and social media groups. A total of 250 valid responses were obtained, representing a response rate of approximately 62% from the initial

outreach. The sample consisted of 60% micro enterprises, 30% small enterprises, and 10% medium enterprises.

The questionnaire was developed based on a thorough literature review. Key constructs were measured using multi-item scales adapted from established studies:

- **Green Business Strategy (GBS):** Measured by items related to resource efficiency, waste management, and low-carbon operational goals (adapted from Hasrat et al., 2025; Aji et al., 2022).
- **Sustainable Marketing (SM):** Measured by items assessing eco-labeling, green communication, and sustainable supply chain engagement (adapted from Putri & Indrawati, 2025; Ferine et al., 2023).
- **Green Entrepreneurial Knowledge (GEK):** Measured by items evaluating the owner's understanding of environmental regulations, green technologies, and sustainable business models (adapted from Iswanti et al., 2020).
- **Ethical/ESG Investment Orientation (ESG):** Measured by items concerning the consideration of environmental and social impact in financial decisions and investment choices (adapted from Mubarak, 2022; Riski et al., 2023).
- **Digital Transformation (DT):** Measured by items evaluating the use of digital tools for operations, marketing, data analysis, and customer engagement (adapted from Fauziah et al., 2025; Rusman, 2025).
- **Sustainable Competitive Performance (SCP):** The dependent variable was measured by items capturing market share growth, profitability resilience, brand reputation enhancement, and customer loyalty specifically attributed to sustainability efforts (adapted from Wahyono et al., 2023; Rijal et al., 2023).

All scales used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The questionnaire also included demographic and firm characteristic questions. Content validity was assessed through expert review, and a pilot test with 30 respondents was conducted to ensure clarity and reliability. Data analysis was performed using SmartPLS 4 software. The analysis followed two main stages: (1) Assessment of the measurement model (outer model) to evaluate reliability and validity of the constructs; and (2) Assessment of the structural model (inner model) to test the hypothesized relationships and moderating effects using Partial Least Squares Structural Equation Modeling (PLS-SEM). Path coefficients (β), p-values, and R^2 values were examined to determine the significance and strength of the relationships.

3. Results and Discussion

The measurement model assessment confirmed the reliability and validity of the constructs. All constructs demonstrated Composite Reliability (CR) values above 0.70 and Average Variance Extracted (AVE) values above 0.50, indicating satisfactory internal consistency reliability and convergent validity. Discriminant validity was established as the Heterotrait-Monotrait (HTMT) ratio of correlations for all construct pairs was below the threshold of 0.90.

The structural model analysis tested the direct effects of the strategic antecedents on Sustainable Competitive Performance (SCP) and the moderating effect of Digital Transformation (DT). The results of the path analysis are summarized in Table 1.

Table 1. Path Coefficients and Significance for Direct Effects

Path (Direct Effect)	Path Coefficient (β)	Standard Error	t-statistic	p-value	Significance
GBS -> SCP	0.45	0.07	6.43	<0.001	Significant
SM -> SCP	0.32	0.06	5.33	<0.001	Significant
GEK -> SCP	0.18	0.05	3.60	0.001	Significant
ESG -> SCP	0.15	0.05	3.00	0.003	Significant
DT -> SCP	0.25	0.06	4.17	<0.001	Significant

Table 1 shows that all hypothesized direct paths are statistically significant. **Green Business Strategy (GBS)** has the strongest direct effect on Sustainable Competitive Performance ($\beta = 0.45$, $p < 0.001$), indicating that operational integration of green principles is a primary driver of competitive advantage. **Sustainable Marketing (SM)** also shows a strong positive effect ($\beta = 0.32$, $p < 0.001$). **Green Entrepreneurial Knowledge (GEK)** and **Ethical/ESG Orientation (ESG)** have smaller but still significant positive effects. **Digital Transformation (DT)** independently contributes to SCP ($\beta = 0.25$, $p < 0.001$).

The analysis of the moderating effect of Digital Transformation (DT) on the relationship between Green Business Strategy (GBS) and Sustainable Competitive Performance (SCP) yielded significant results, as shown in Table 2.

Table 2. Moderating Effect of Digital Transformation

Interaction (Moderation)	Effect Path Coefficient (β)	Standard Error	t-statistic	p-value	Significance
GBS * DT -> SCP	0.28	0.06	4.67	<0.001	Significant

The positive and significant moderation coefficient ($\beta = 0.28$, $p < 0.001$) confirms that Digital Transformation strengthens the positive impact of Green Business Strategy on Sustainable Competitive Performance. This means that for MSMEs with higher levels of digital adoption, the implementation of a green business strategy leads to a greater enhancement in competitive performance compared to MSMEs with lower digital adoption.

The model explains a substantial portion of the variance in the dependent variable. The R^2 value for Sustainable Competitive Performance (SCP) is 0.65, indicating that 65% of the variance in SCP is explained by the combined direct effects of GBS, SM, GEK, ESG, DT, and the moderating interaction.

Discussion

The findings of this study provide robust empirical support for a holistic strategic management framework for MSMEs in the green economy. The results underscore that competitive advantage in this context is not driven by a single initiative but by the synergistic integration of multiple strategic orientations.

The strongest direct driver, **Green Business Strategy (GBS)**, aligns with recent calls for integrating environmental sustainability into core operations (Hasrat et al., 2025; Putri & Indrawati, 2025). This finding suggests that internal operational changes—such as efficient resource use, waste management, and adopting cleaner technologies—create tangible cost savings, operational resilience, and a foundation for authentic green marketing claims, directly enhancing performance. The significant effect of **Sustainable Marketing (SM)** corroborates studies emphasizing that communicating green values effectively builds brand differentiation and customer loyalty in an increasingly eco-conscious market (Ferine et al., 2023; Wahyono et al., 2023). It is logical that SCP is enhanced when external market communication (SM) is aligned with internal operational reality (GBS).

The positive, though relatively smaller, effects of **Green Entrepreneurial Knowledge (GEK)** and **Ethical/ESG Orientation (ESG)** highlight foundational and motivational factors. GEK provides the necessary understanding to design and implement effective GBS and SM (Iswanti et al., 2020), while ESG orientation ensures that sustainability is embedded in financial and investment decisions, aligning long-term business goals with ethical imperatives (Mubarok, 2022; Riski et al., 2023). These factors may act as necessary precursors or enablers for the more direct strategic actions (GBS and SM).

A critical contribution of this study is the validation of **Digital Transformation (DT)** as a significant moderator. The finding that DT amplifies the effect of GBS on SCP provides empirical evidence for theoretical propositions that digital tools are catalysts for green innovation (Fauziah et al., 2025; Rusman, 2025). Digital technologies can enable precise monitoring of resource consumption, facilitate circular economy models through online platforms, enhance the reach and impact of sustainable marketing campaigns, and improve access to green finance and networks. Thus, MSMEs that pursue a green strategy without leveraging digital tools may realize lesser benefits compared to those that integrate both.

The integrated model ($R^2 = 0.65$) demonstrates strong explanatory power, suggesting that the proposed framework captures the key strategic levers for MSMEs. This aligns with the concept of the **Penta Helix ecosystem**, where multiple actors (including those providing digital and knowledge resources) support enterprise transformation (Chakim et al., 2025). The findings imply that for MSMEs to thrive, support programs should not focus on isolated aspects (e.g., only marketing training) but should promote integrated capacity building encompassing operational green practices, marketing, digital skills, and sustainability knowledge.

4. Conclusion

This research concludes that thriving in the green economy requires MSMEs to adopt a multi-faceted strategic management approach. Competitive advantage is significantly driven by the direct implementation of green business strategies and sustainable marketing practices. These efforts are further strengthened when underpinned by green entrepreneurial knowledge and an ethical/ESG orientation in decision-making. Most importantly, digital transformation acts as a powerful amplifier, significantly enhancing the competitive returns from green strategic investments.

The study offers both theoretical and practical contributions. It advances strategic management theory by proposing and validating an integrated model specific to the MSME context in the green economy, highlighting the moderating role of digitalization. For practitioners, including MSME owners, policymakers, and business development service providers, the findings advocate for comprehensive support programs. Interventions should simultaneously address operational greening, marketing communication, digital tool adoption, and knowledge enhancement to maximize the competitive outcomes for MSMEs.

Limitations of this study include its focus on a specific geographical context (Indonesia) and the use of a cross-sectional design, which limits insights into longitudinal effects. Future research could explore these relationships in different cultural and regulatory settings, employ longitudinal designs to track performance evolution, and investigate the specific digital tools (e.g., IoT, AI, blockchain) that are most effective in moderating the green strategy-performance link.

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