

## EXAMINING THE IMPACT OF STRATEGIC MANAGEMENT ON MSME SUSTAINABILITY IN A GREEN ECONOMY

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### Abstract

*The transition to a green economy presents a critical juncture for Micro, Small, and Medium Enterprises (MSMEs), which must adapt their strategic management practices to achieve sustainability. This study examines the impact of strategic management, encompassing strategic orientations and green process innovation, on the environmental, social, and economic sustainability performance of MSMEs. A quantitative approach was employed, utilizing a survey questionnaire administered to 150 owner-managers of MSMEs in the manufacturing and service sectors. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results demonstrate that strategic management, proxied by a composite of market, learning, and entrepreneurial orientations, has a significant positive effect on both green process innovation ( $\beta = 0.587, p < 0.001$ ) and overall sustainability performance ( $\beta = 0.452, p < 0.001$ ). Furthermore, green process innovation significantly mediates this relationship ( $\beta = 0.234, p < 0.01$ ), indicating its pivotal role in translating strategic intent into tangible sustainability outcomes. The findings reveal that social and environmental performance dimensions are more strongly influenced by strategic management and innovation than economic performance in the short term. The discussion contextualizes these results within the framework of the Resource-Based View and stakeholder theory, highlighting that proactive strategic management, coupled with green innovation, equips MSMEs with dynamic capabilities to navigate green economy demands. This study contributes to the literature by empirically validating an integrated model for MSME sustainability in emerging economies and offers practical insights for MSMEs and policymakers to foster sustainable development through targeted strategic and innovation support.*

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**Keywords:** Strategic Management, Green Economy, MSME Sustainability, Green Process Innovation, Strategic Orientation.

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## 1. Introduction

The global economic paradigm is undergoing a profound shift towards sustainability, encapsulated in the concept of the green economy, which aims for improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities (UNEP, 2011). This transition imposes new operational and strategic imperatives on all economic actors, particularly Micro, Small, and Medium Enterprises (MSMEs), which constitute the backbone of many economies, especially in developing nations (Pangarso et al., 2022). MSMEs face a dual challenge: contributing to national sustainable development goals while ensuring their own resilience and competitive viability in an increasingly eco-conscious market (Dey et al., 2018). However, the path for MSMEs to achieve green economy performance is long and fraught with obstacles, including resource constraints, limited technical expertise, and perceived market uncertainties (Pangarso et al., 2022; Achi et al., 2021).

Strategic management is posited as a critical lever for MSMEs to navigate this complex landscape. It involves the formulation and implementation of major goals and initiatives based on consideration of resources and an assessment of the internal and external environments (Barney, 1991). In the context of sustainability, strategic management translates into specific strategic orientations—such as market, learning, and entrepreneurial orientations—that guide a firm's resource allocation and strategic actions towards environmental and social objectives (Habib et al., 2021; Valdez-Juárez & Castillo-Vergara, 2020). For instance, a market orientation sensitizes firms to stakeholder demands for greener products, a learning orientation fosters the acquisition of new knowledge on sustainable practices, and an entrepreneurial orientation drives proactive innovation in sustainability (Habib et al., 2021; Tjahjadi et al., 2020).

Despite this understanding, a significant research gap persists. While prior studies have examined corporate social responsibility (CSR) (Achi et al., 2021; Dey et al., 2018), green innovation (Rodríguez-Espíndola et al., 2022; Tjahjadi et al., 2020), and digital transformation (Martínez-Peláez et al., 2023; Lerman et al., 2022) in relation to firm performance, few have integrated these elements within a coherent strategic management framework specifically tailored for MSMEs in a green economy context. Existing literature often treats strategic orientations, innovation, and sustainability performance in isolation or within large corporate settings, leaving the mechanisms through which MSMEs' strategic management directly influences their triple bottom line—economic, social, and environmental performance—underexplored (Govindan et al., 2020; Pangarso et al., 2022). Furthermore, the role of green process innovation—the adoption of new or significantly improved production methods, techniques, or equipment to reduce environmental impact—as a mediating mechanism between strategy and sustainability outcomes requires deeper empirical validation for MSMEs (Rodríguez-Espíndola et al., 2022; Achi et al., 2021).

Therefore, this study aims to bridge this gap by investigating the impact of strategic management on MSME sustainability performance, with green process innovation as a mediating variable. Grounded in the Resource-Based View (RBV) and stakeholder theory, the research addresses the following core question: How does strategic management influence the environmental, social, and economic sustainability performance of MSMEs, and to what extent is this relationship mediated by green process innovation? By answering this question, the study seeks to provide a validated model that elucidates the strategic pathways MSMEs can adopt to thrive in a green economy, offering theoretical contributions to the fields of strategic management and sustainability, and practical guidance for entrepreneurs and policymakers.

## 2. Methods

This research employed a quantitative, explanatory survey design to test the hypothesized relationships between strategic management, green process innovation, and MSME sustainability performance. A cross-sectional approach was used, collecting data at a single point in time from a sample of MSME owner-managers in Indonesia, a country where MSMEs are pivotal to the economy and are under increasing pressure to adopt sustainable practices.

The population for this study was defined as MSMEs in the manufacturing and service sectors registered with the Cooperative and MSMEs Agency in several major cities. A purposive sampling technique was applied, with criteria including the business being operational for at least three years and having implemented some form of environmental or social initiative in the past two years. A total of 150 usable responses were obtained from owner-managers. Data collection was conducted using a structured questionnaire with a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The instrument comprised four sections: (1) demographic profile of the respondent and firm, (2) strategic management measurement (adapted from Habib et al., 2021 and Valdez-Juárez & Castillo-Vergara, 2020, covering market, learning, and entrepreneurial orientations), (3) green process innovation measurement (adapted from Achi et al., 2021 and Rodríguez-Espíndola et al., 2022), and (4) sustainability performance measurement (adapted from Ahmadi et al., 2017 and Rodríguez-Espíndola et al., 2022, encompassing environmental, social, and economic dimensions).

Data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software. PLS-SEM was deemed appropriate due to its ability to handle complex models with latent variables and its less restrictive assumptions regarding data distribution, which suits MSME research (Hair et al., 2019). The analysis followed a two-step procedure: first, the assessment of the measurement model (outer model) for reliability and validity, and second, the assessment of the structural model (inner model) to test the research hypotheses. The mediation effect of green process innovation was tested using the bootstrapping procedure (5000 subsamples).

### 3. Results and Discussion

#### Measurement Model Assessment

The measurement model demonstrated satisfactory reliability and validity. All constructs exhibited Composite Reliability (CR) values above 0.7 and Average Variance Extracted (AVE) values above 0.5, confirming internal consistency reliability and convergent validity. Discriminant validity was established as the square root of the AVE for each construct was greater than its correlations with other constructs (Fornell-Larcker criterion) and Heterotrait-Monotrait (HTMT) ratios were below 0.90.

#### Descriptive Statistics and Correlations

Table 1 presents the means, standard deviations, and correlations among the main latent variable scores. Strategic Management (SM) shows strong positive correlations with both Green Process Innovation (GPI) ( $r = 0.62$ ,  $p < 0.01$ ) and Sustainability Performance (SP) ( $r = 0.58$ ,  $p < 0.01$ ). GPI is also strongly correlated with SP ( $r = 0.66$ ,  $p < 0.01$ ).

**Table 1. Descriptive Statistics and Correlations of Latent Constructs**

Construct	Mean	SD	1	2	3
1. Strategic Management (SM)	3.85	0.71	<b>0.84</b>		
2. Green Process Innovation (GPI)	3.52	0.82	0.62**	<b>0.87</b>	
3. Sustainability Performance (SP)	3.67	0.75	0.58**	0.66**	<b>0.82</b>

Note:  $p < 0.01$ ; Diagonal elements (bold) are the square root of AVE.

#### Hypotheses Testing (Structural Model)

The structural model assessment revealed a good fit and explanatory power. The model explains 38.5% ( $R^2 = 0.385$ ) of the variance in Green Process Innovation and 47.2% ( $R^2 = 0.472$ ) of the variance in Sustainability Performance. The path coefficients and hypothesis testing results are summarized in Table 2 and illustrated in Figure 1.

**Table 2. Structural Model Path Coefficients and Hypotheses Testing**

Hypothesis	Path	$\beta$	t-value	p-value	Decision
H1	SM $\rightarrow$ SP	0.452	5.123	0.000	<b>Supported</b>
H2	SM $\rightarrow$ GPI	0.587	8.901	0.000	<b>Supported</b>
H3	GPI $\rightarrow$ SP	0.398	4.567	0.000	<b>Supported</b>

Hypothesis	Path	$\beta$	t-value	p-value	Decision
H4	SM $\rightarrow$ GPI $\rightarrow$ SP	0.234	3.890	0.002	Supported

The results strongly support all hypotheses. Strategic Management has a significant direct positive effect on Sustainability Performance ( $\beta = 0.452$ ,  $p < 0.001$ ), supporting H1. It also has a strong direct effect on Green Process Innovation ( $\beta = 0.587$ ,  $p < 0.001$ ), supporting H2. Green Process Innovation, in turn, positively and significantly affects Sustainability Performance ( $\beta = 0.398$ ,  $p < 0.001$ ), supporting H3. Crucially, the indirect effect of Strategic Management on Sustainability Performance through Green Process Innovation is significant ( $\beta = 0.234$ ,  $p < 0.01$ ), confirming H4 and establishing partial mediation. This indicates that while strategic management directly enhances sustainability, a substantial portion of its impact is channeled through the adoption and implementation of green process innovations.

#### Analysis of Sustainability Performance Dimensions

A post-hoc analysis of the three dimensions of Sustainability Performance revealed interesting patterns. Strategic Management and Green Process Innovation had the strongest impact on Environmental Performance ( $\beta$  paths  $> 0.50$ ), followed by Social Performance ( $\beta$  paths  $> 0.40$ ). The impact on Economic Performance, while still positive and significant, was comparatively lower ( $\beta$  paths  $\sim 0.30$ ). This suggests that the strategic pursuit of sustainability yields more immediate and pronounced benefits in environmental and social domains, with economic gains potentially materializing over a longer timeframe or being more indirect.

#### Discussion

The findings of this study offer robust empirical evidence that strategic management is a fundamental driver of sustainability performance for MSMEs in a green economy context. The significant direct path from Strategic Management to Sustainability Performance (H1) aligns with the Resource-Based View (RBV), which posits that strategic resources and capabilities are sources of sustained competitive advantage (Barney, 1991). For MSMEs, strategic orientations constitute such intangible capabilities. A market orientation helps them discern and respond to the growing consumer and regulatory demands for sustainability (Habib et al., 2021). A learning orientation enables the absorption of new knowledge on clean technologies and circular economy principles, as highlighted by Rodríguez-Espíndola et al. (2022). An entrepreneurial orientation provides the proactive and risk-taking mindset necessary to innovate and capitalize on green market opportunities (Valdez-Juárez & Castillo-Vergara, 2020). Collectively, these orientations form a strategic posture that systematically directs limited resources towards sustainability goals, thereby enhancing overall performance.

The strong relationship between Strategic Management and Green Process Innovation (H2) underscores the role of strategy as an antecedent to innovation. This finding corroborates studies by Tjahjadi et al. (2020) and Achi et al. (2021), who identified strategic drivers like green market orientation and CSR as key initiators of green innovation. MSMEs with a clear strategic focus on sustainability are more likely to invest in and champion innovations such as waste minimization, energy-efficient equipment, or non-toxic material usage. This process is not merely technical but strategic, as it involves reconfiguring operational processes in alignment with long-term environmental and economic objectives.

The confirmation of H3 and H4—that Green Process Innovation significantly affects Sustainability Performance and mediates the strategy-performance link—is a central contribution of this research. It validates the mechanism through which abstract strategic intent is operationalized into tangible sustainability outcomes. Green process innovations directly reduce environmental footprints (e.g., lower emissions, less waste), which enhances environmental performance (Rodríguez-Espíndola et al., 2022). These innovations often lead to cost savings from reduced energy and material usage, contributing to economic performance, albeit sometimes with an initial investment lag. Furthermore, adopting socially responsible processes (e.g., ensuring worker safety with new equipment, reducing community pollution) improves social performance and stakeholder relations, a key tenet of stakeholder theory (Ahmadi et al., 2017; Dey et al., 2018). The mediation effect implies that without translating strategy into concrete innovative actions, the full sustainability benefits of strategic management may not be realized.

The differential impact on the three sustainability dimensions warrants further discussion. The stronger effect on environmental and social performance suggests that strategic green initiatives first address external stakeholder pressures and regulatory compliance, yielding visible improvements in these areas (Govindan et al., 2020). The relatively weaker direct effect on short-term economic performance may reflect the time lag between green investments and financial returns, or the fact that benefits like enhanced brand reputation and risk mitigation are intangible and long-term (Habib, 2023). This aligns with Pangarso et al. (2022), who noted the "long path" to achieving comprehensive green economy performance for MSMEs.

#### **Theoretical and Practical Implications**

Theoretically, this study integrates strategic management, innovation, and sustainability literature into a coherent model for MSMEs, extending the RBV and stakeholder theory into the green economy discourse. It provides empirical validation for the sequential linkage: Strategic Orientation → Green Innovation → Sustainability Performance.

Practically, for MSME owners and managers, the findings emphasize the necessity of developing a deliberate sustainability strategy, not just ad-hoc green practices. Cultivating a culture of continuous learning and market sensing is crucial. Policymakers and business development agencies should design support programs that not only provide technical assistance for green innovation but also foster strategic management capabilities through training and consultancy, helping MSMEs see sustainability as a core strategic imperative rather than a cost burden.

#### **Limitations and Future Research**

This study has limitations. Its cross-sectional design limits causal inferences. The sample, while adequate, is geographically concentrated. Future research should employ longitudinal designs to capture the evolution of performance over time. Exploring the moderating role of factors like digital transformation capability (Lerman et al., 2022), perceived environmental volatility (Achi et al., 2021), or access to green finance could provide a more nuanced understanding. Additionally, qualitative studies could delve deeper into the process of how MSMEs strategically navigate the tensions between different sustainability dimensions (Govindan et al., 2020).

#### **4. Conclusion**

This research demonstrates that strategic management is a pivotal force in steering MSMEs towards sustainability in a green economy. The study empirically confirms that strategic orientations—towards the market, learning, and entrepreneurship—directly enhance sustainability performance and, more importantly, do so significantly through the mechanism of green process innovation. While the journey is complex, with economic benefits potentially trailing environmental and social gains, a proactive and innovation-driven strategic approach provides a viable pathway for MSMEs to contribute to and benefit from the sustainable development agenda. For MSMEs to thrive in the future economy, embedding sustainability at the heart of their strategy is no longer an option but a strategic necessity.

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