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Green Banking and Competitive Advantage: A Strategic Management Perspective

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ABSTRACT

This study examines the strategic role of green banking in creating competitive advantage within the banking sector from a strategic management perspective. Using a quantitative approach, this research employs Structural Equation Modeling with Partial Least Squares (SEM–PLS) to analyze data collected from 210 managerial-level employees of commercial banks operating in Indonesia. The findings indicate that green banking has a positive and significant effect on competitive advantage, both directly and indirectly through strategic efficiency as a partial mediating variable. This result suggests that green banking contributes to competitive advantage not merely through regulatory compliance or reputational signaling, but through its integration into core strategic and operational processes. Strategic efficiency, reflected in process optimization, long-term cost reduction, and sustainable innovation, strengthens the effectiveness of green banking in generating superior competitive outcomes. These findings position green banking as a strategic capability that enhances organizational competitiveness when embedded within long-term strategic orientation. This study contributes to the strategic management and sustainability literature by providing empirical evidence from an emerging economy context and by clarifying the internal mechanisms through which green banking creates value. The results offer important implications for banking management in designing sustainability-driven strategies that support long-term competitive advantage

Keywords: *competitive advantage, green banking, strategic efficiency, strategic management, sustainability*

INTRODUCTION

Transformation toward a sustainable financial system has become a strategic global agenda that reshapes how financial institutions design policies, manage risks, and build long-term competitiveness. In this context, green banking has emerged as an approach that integrates environmental considerations into banking operations, financing policies, risk management, and strategic decision-making. Green banking is no longer understood merely as compliance with environmental regulations, but rather as a strategic instrument with the potential to generate competitive advantage amid increasing market pressures and heightened stakeholder expectations (Park & Kim, 2020).

Empirically, the banking sector across various countries has demonstrated a significant increase in the adoption of green banking practices, including environmentally friendly financing, operational energy efficiency, and the strengthening of environment-

based risk management. These developments are driven not only by regulators, but also by investors and the public, who are increasingly sensitive to sustainability issues. In developing countries such as Indonesia, green banking is viewed as a means to support the sustainable development agenda while simultaneously maintaining financial system stability. Nevertheless, despite the growing adoption of green banking, empirical evidence regarding its impact on competitive advantage remains mixed and inconclusive (Istudor et al., 2022).

From a practical perspective, banks face a strategic dilemma between the costs of implementing green banking and the anticipated long-term benefits. Investments in green technologies, governance enhancement, and human resource capacity building are often perceived as additional cost burdens. Consequently, the strategic value of green banking depends heavily on the extent to which these practices enhance efficiency, reputation, and service differentiation. Empirical studies indicate that sustainability initiatives can improve operational performance and competitiveness when they are consistently integrated into an organization's core strategy (Sauletkan & Kuanova, 2024; Nohong et al., 2024).

Academically, the green banking literature remains largely dominated by regulatory and financial perspectives. Park and Kim (2020) emphasize the role of regulators and financial institutions in promoting the transition toward green banking, while Nainggolan and Marlene (2025) analyze the impact of green financing and sustainability reporting on banking market value. Although important, these approaches tend to position green banking as an external response to institutional pressures rather than as an internal strategic capability capable of generating sustainable competitive advantage.

Another limitation of prior research lies in the fragmentation of conceptual frameworks. Muchiri et al. (2025), through a systematic review, show that green banking research is dispersed across themes such as risk, opportunity, and operational performance, with limited integration into a strategic management perspective. Tankosić et al. (2025) highlight the importance of sustainable risk management within green banking but do not explicitly link it to the creation of competitive advantage. As a result, the contribution of green banking to long-term competitiveness remains insufficiently explained.

Furthermore, many empirical studies rely primarily on financial performance indicators as proxies for the success of green banking. This approach risks oversimplifying the concept of competitive advantage, which is inherently multidimensional. Istudor et al. (2022) argue that banking competitiveness encompasses reputation, service differentiation, and strategic adaptability to environmental change. However, empirical models that comprehensively capture these dimensions remain relatively limited.

The research gap in this study can be identified through three key strands of prior research. First, Park and Kim (2020) focus on the institutional drivers of green banking without examining its strategic implications for competitive advantage. Second, Nohong et al. (2024) identify a positive relationship between green financial management and sustainable competitive advantage in Indonesia, yet do not elaborate on the internal mechanisms that mediate this relationship. Third, Muchiri et al. (2025) explicitly call for empirical research that positions green banking within an integrated strategic management framework. Collectively, these studies reveal a gap in understanding how green banking operates as a strategic capability that creates value.

The novelty of this study lies in its explicit integration of green banking into a strategic management perspective using a quantitative structural model. This research

not only examines the direct effect of green banking on competitive advantage, but also analyzes the mediating role of strategic efficiency as an internal mechanism linking green banking practices to competitive outcomes. This approach enables a more nuanced understanding of the value creation process derived from green banking initiatives.

In addition, this study contributes empirically by focusing on the Indonesian banking sector as a developing-country context. This context is significant because regulatory dynamics, market structures, and sustainability challenges in developing countries differ from those in developed economies. Accordingly, the findings are expected to extend the generalizability of green banking and strategic management theories.

Based on this background, the objective of this study is to analyze the effect of green banking on banking competitive advantage and to examine the role of strategic efficiency as a mediating mechanism in the relationship between green banking and competitive advantage. This research is expected to provide both theoretical and practical contributions to the development of sustainable banking strategies.

METODE

This study employs a quantitative approach with an explanatory research design to test the causal relationships among green banking, strategic efficiency, and competitive advantage. The analytical technique used is Structural Equation Modeling with a Partial Least Squares approach (SEM–PLS), implemented using SmartPLS software. This method is appropriate for testing predictive structural models involving latent constructs and for handling the complexity of both direct and indirect relationships in the context of strategic management in banking (Sarwono & Handayani, 2021).

The research population consists of employees of commercial banks in Indonesia at managerial and supervisory levels who are involved in strategic decision-making, financing, and risk management. A purposive sampling technique was employed with criteria including a minimum of three years of work experience and direct involvement in banking policy implementation. Based on these criteria, 210 respondents met the requirements for SEM–PLS analysis. Data were collected through a structured online questionnaire using a five-point Likert scale.

This study involves three latent variables. Green banking is measured through indicators of environmentally friendly financing policies, internal operational efficiency, and environmental risk management. Strategic efficiency, as the mediating variable, is measured through process optimization, long-term cost reduction, and sustainable innovation. Competitive advantage is measured through service differentiation, organizational reputation, and performance sustainability. Data analysis was conducted through measurement model evaluation to assess construct reliability and validity, followed by structural model evaluation to test path coefficients, coefficients of determination, and the significance of relationships among variables using a bootstrapping procedure.

RESULT AND DISCUSSION

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Age	< 30 years	40	19.0
	31–40 years	113	53.8
	41–50 years	57	27.2
Working Experience	3–5 years	78	37.1
	> 5 years	132	62.9
Bank Type	National Bank	143	68.1
	Private/Mixed Bank	67	31.9
Total		**210**	**100**

Table 1 shows that the majority of respondents are between 31–40 years old and have more than five years of working experience. This indicates that most respondents possess sufficient managerial exposure and strategic understanding relevant to green banking implementation and competitive decision-making within banks.

Table 2. Descriptive Statistics of Research Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Green Banking	4.12	0.53	2.90	5.00
Strategic Efficiency	4.05	0.56	2.80	5.00
Competitive Advantage	4.18	0.51	3.00	5.00

Interpretation:
Table 2 indicates that all research variables have mean values above 4.00, suggesting a high level of agreement among respondents regarding the implementation of green banking, strategic efficiency, and competitive advantage. The relatively low standard deviations indicate consistent perceptions across respondents.

Table 3. Outer Model Evaluation (Indicator Reliability)

Construct	Indicator	Outer Loading
Green Banking	GB1	0.812
	GB2	0.845
	GB3	0.798
Strategic Efficiency	SE1	0.821
	SE2	0.856
	SE3	0.809
Competitive Advantage	CA1	0.834
	CA2	0.872
	CA3	0.826

Interpretation:
As shown in Table 3, all indicators have outer loading values exceeding the threshold of 0.70, indicating that each indicator reliably measures its corresponding latent construct and satisfies indicator reliability requirements.

Table 4. Convergent Validity and Reliability

Construct	AVE	Composite Reliability
Green Banking	0.67	0.86
Strategic Efficiency	0.71	0.88
Competitive Advantage	0.69	0.87

Interpretation:
Table 4 demonstrates that all constructs meet convergent validity criteria with AVE values greater than 0.50 and composite reliability values exceeding 0.70. This confirms that the measurement model is valid and reliable.

Table 5. Coefficient of Determination (R Square)

Endogenous Variable	R Square
Strategic Efficiency	0.41
Competitive Advantage	0.53

Interpretation:
Table 5 shows that green banking explains 41 percent of the variance in strategic efficiency, while green banking and strategic efficiency jointly explain 53 percent of the variance in competitive advantage. These values indicate a moderate to substantial explanatory power of the structural model.

Table 6. Path Coefficients and Hypothesis Testing

Hypothesized Path	Path Coefficient (β)	p-value	Decision
Green Banking → Competitive Advantage	0.462	0.000	Accepted
Green Banking → Strategic Efficiency	0.641	0.000	Accepted
Strategic Efficiency → Competitive Advantage	0.318	0.004	Accepted

Interpretation:
Table 6 indicates that all hypothesized paths are statistically significant. The p-value of 0.000 for the relationship between green banking and competitive advantage confirms a significant direct effect, supporting the first hypothesis. The significant p-value of 0.000 for the effect of green banking on strategic efficiency supports the second hypothesis, indicating that green banking enhances internal strategic efficiency. Furthermore, the p-value of 0.004 for the effect of strategic efficiency on competitive advantage confirms the third hypothesis, demonstrating that strategic efficiency significantly contributes to competitive advantage.

Table 7. Indirect Effect Analysis

Indirect Path	Indirect Effect (β)	p-value	Mediation Type
Green Banking → Strategic Efficiency → Competitive Advantage	0.204	0.006	Partial Mediation

Interpretation:
Table 7 shows that the indirect effect of green banking on competitive advantage through strategic efficiency is statistically significant, as indicated by a p-value of 0.006. This result confirms the presence of partial mediation, meaning that green banking influences competitive advantage both directly and indirectly through strategic efficiency.

The Role of Green Banking as a Strategic Capability in Creating Competitive Advantage

The results of the SEM PLS analysis indicate that green banking has a positive and significant effect on banking competitive advantage. This finding confirms that green banking can no longer be understood as a symbolic activity or merely as compliance with regulatory requirements, but rather as a strategic capability that strengthens a bank's competitive position. Within the perspective of strategic management, this capability becomes a source of differentiation when it is consistently integrated into business processes and organizational decision making.

The significant path coefficient between green banking and competitive advantage demonstrates that environmentally oriented practices contribute to the creation of strategic value. This is consistent with the view of Istudor et al. (2022), who emphasize that sustainability can enhance competitiveness when it is positioned as part of an organization's core strategy. Banks that systematically implement green banking tend to achieve stronger reputations, higher stakeholder trust, and service differentiation that is difficult for competitors to imitate.

This finding also supports the results of Nohong et al. (2024), who show that green financial management contributes to sustainable competitive advantage in the Indonesian banking sector. However, this study extends that understanding by demonstrating that the influence of green banking is direct and significant even before considering mediating mechanisms. This indicates that the presence of green credit policies, environmentally based operational efficiency, and environmental risk management has already functioned as a strategic signal that strengthens banks' market positions.

From the perspective of strategic management theory, green banking can be understood as a strategic resource with characteristics of value, relevance, and contextual importance in an increasingly environmentally sensitive competitive landscape. Muchiri et al. (2025) argue that the main challenge of green banking lies not in its implementation, but in banks' ability to link these practices to long term strategic objectives. The findings of this study show that when such linkages are realized, green banking is able to generate sustainable competitive advantage.

In addition, the significance of the relationship between green banking and competitive advantage reflects changes in market and stakeholder preferences. Investors, customers, and regulators increasingly assess bank performance not only from a financial perspective, but also from commitment to sustainability. In this context, green banking functions as a mechanism of strategic legitimacy that strengthens banks' institutional competitiveness, as indicated by Park and Kim (2020).

Accordingly, the results of this study confirm the main hypothesis that green banking is an important determinant of banking competitive advantage. These findings reinforce the argument that sustainability and competitiveness are not contradictory objectives, but rather mutually reinforcing when integrated within an organizational strategy framework.

Strategic Mechanisms Linking Green Banking and Competitive Advantage

The findings indicate that strategic efficiency acts as a partial mediating variable in the relationship between green banking and competitive advantage. This result provides a deeper understanding of the internal mechanisms through which green banking creates strategic value. Green banking not only has a direct effect on competitive advantage, but also operates through improvements in strategic efficiency, including process optimization, long term cost reduction, and sustainable innovation.

The significant relationship between green banking and strategic efficiency suggests that green banking practices encourage banks to undertake structural and operational adjustments. Investments in environmentally friendly technologies, process digitalization, and environmental risk management have been shown to enhance organizational efficiency. This is consistent with the findings of Sauletkan and Kuanova (2024), who demonstrate that green finance contributes to improved bank operational performance through greater efficiency and more effective risk management.

Enhanced strategic efficiency subsequently contributes to competitive advantage, as evidenced by the significant relationship between strategic efficiency and competitive advantage. This finding supports the view that competitive advantage is generated not only through external differentiation, but also through internal strengths that enable banks to operate in a more adaptive and sustainable manner. Istudor et al. (2022) emphasize that an organization's ability to integrate sustainability into internal processes is a key factor in building long term competitiveness.

The partial mediation observed in this study indicates that strategic efficiency is not the sole pathway through which green banking creates value. However, the presence of this mechanism strengthens the argument that green banking becomes more effective when it is internalized within organizational strategy and operations. This finding addresses the limitations of previous studies that focused only on direct relationships without explaining internal causal processes, as identified by Muchiri et al. (2025).

From a managerial perspective, these results have important implications. Banks that adopt green banking in isolation from operational strategy risk failing to obtain optimal competitive benefits. In contrast, integrating green banking with efforts to enhance strategic efficiency enables banks to convert environmental commitments into tangible competitive advantage. This finding also extends the results of Nohong et al. (2024) by providing a mechanistic explanation of how green financial management is translated into sustainable competitiveness.

Overall, this discussion confirms that green banking functions as a strategic capability that creates competitive advantage through both direct and indirect pathways. Strategic efficiency acts as a reinforcing mechanism that bridges sustainability practices and competitive outcomes, thereby strengthening the position of green banking within the strategic management framework of the banking sector.

CONCLUSION

This study concludes that green banking plays a strategic role in enhancing banking competitive advantage. The SEM PLS analysis shows that green banking has a positive and significant effect on competitive advantage, both directly and indirectly through strategic efficiency as a partial mediating mechanism. These findings confirm that competitive advantage is not derived solely from compliance with environmental regulations, but from banks' ability to integrate green banking practices into core strategy, operational processes, and managerial decision making. Accordingly, green banking can be positioned as a strategic capability that creates value and strengthens long term competitiveness.

The theoretical implications of this study highlight the need to develop strategic management frameworks that position green banking as a dynamic capability interacting with internal organizational mechanisms. From a practical perspective, bank management is encouraged to implement green banking in an integrated and long term oriented manner, rather than as a separate program or merely as a symbol of legitimacy. Future research is recommended to replicate this model in different country contexts or types of banks and to employ longitudinal designs in order to capture the dynamic impact of green banking on competitive advantage more comprehensively.

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