

The Pathway To Sustainable Business Performance: Evidence From Indonesian SMEs

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ABSTRACT

This study aims to examine the mediating role of green innovation in the relationship between environmental sustainability, sustainability performance, and financial performance of Micro, Small, and Medium Enterprises (MSMEs) in Jakarta, Indonesia. Using a quantitative approach and Partial Least Squares Structural Equation Modeling (PLS-SEM), the findings indicate that environmental sustainability significantly influences green innovation, which subsequently enhances sustainability performance and financial performance. These results support the Resource-Based View (RBV) framework, which posits that environmental sustainability can generate intangible resources such as organizational knowledge and capabilities that drive green innovation as a competitive advantage. Additionally, the outcomes reinforce the Triple Bottom Line (TBL) framework, emphasizing the importance of integrating social, environmental, and economic aspects to achieve holistic organizational sustainability. Specifically, green innovation acts as a vital mediator that strengthens the positive relationship between environmental sustainability and both sustainability and financial performance. The sample consists of 198 MSMEs in Jakarta, selected through stratified and simple random sampling techniques. The findings suggest that adopting green innovation strategies is essential for fostering comprehensive sustainability transparency and improving the financial performance of MSMEs in Indonesia.

INTRODUCTION

In Indonesia, Small and Medium Enterprises (SMEs) play a strategic role in the national economy, accounting for more than 99% of total businesses and absorbing most of the workforce, while making a significant contribution to the Gross Domestic Product (Aprilia et al., 2025). Jakarta, as the capital city and the largest economic and business hub in Indonesia, has one of the highest concentrations of SMEs operating across the manufacturing, trade, service, and creative sectors. These SMEs contribute substantially to regional economic growth

while facing increasing pressure to adopt sustainable and innovative business practices in response to urban environmental challenges and market competition. However, despite having large numbers, SMEs in Indonesia often face limited resources, managerial skills, and access to technology, which can limit their improvement in financial performance (Ramdan et al., 2022).

As global awareness of environmental issues increases, sustainability performance is an important factor that cannot be ignored by business people. Governments and consumers are increasingly demanding environmentally friendly and socially responsible business practices (Mal et al., 2023). SMEs, as the backbone of Indonesia's economy, are required to focus not only on financial gains but also on reducing environmental impact through sustainable business practices (Nafisah & Shiratina, 2024). This challenge is particularly relevant for SMEs in Jakarta, where rapid urbanization, waste generation, and stricter environmental regulations have increased the need for sustainable business operations.

Innovation is key for SMEs in answering sustainability challenges while improving financial performance. The application of innovation, whether in the form of environmentally friendly technology, production efficiency, and waste management, can help SMEs improve operational efficiency, reduce costs, and strengthen competitiveness (Rodriguez-Espindola et al., 2022). Thus, innovation not only supports sustainability practices but also has the potential to moderate the relationship between environmental sustainability performance and SME financial performance (Meutia et al., 2025).

On the regulatory side, the Indonesian government through the Financial Services Authority (OJK), the Ministry of Cooperatives and SMEs, as well as various inclusive funding programs, encourages SMEs to adopt environmentally friendly and innovative practices. This is in line with global trends that emphasize the integration between sustainability and inclusive economic growth (Ispriyahadi et al., 2025). In addition, the Provincial Government of the Special Capital Region (DKI) Jakarta has introduced several initiatives to strengthen SME competitiveness through digital transformation, green entrepreneurship, and sustainable business development programs. Therefore, this study aims to explore how the implementation of innovation moderates the relationship between environmental sustainability performance and the financial performance of SMEs in Indonesia, providing important insights into management theory, business practices, and government policies.

This research departs from the problem of inconsistency of empirical findings regarding the relationship between environmental sustainability performance and financial performance, especially in the context of Small and Medium Enterprises (SMEs) in Indonesia. Although environmental sustainability practices are increasingly driven by governments, consumers, and financial institutions, not all SMEs that implement environmentally friendly practices automatically experience improved financial performance (Opoku, 2025). This condition indicates the existence of contingency factors that can strengthen or weaken the relationship. Therefore, this study proposes the implementation of innovation as a moderation

variable that has the potential to explain how and under what conditions environmental sustainability can improve financial performance. Given Jakarta position as Indonesia's primary commercial center and its diverse SME ecosystem, examining this relationship in the Jakarta context is expected to provide more specific empirical evidence and practical recommendations for policymakers and SME practitioners.

In this article, there is the use of several theories that underlie the conceptual framework and analysis of the research. The main theory used is the Resource-Based View (RBV), which asserts that unique and strategically valuable internal resources, such as knowledge, innovation capabilities, and environmental management, can be a key factor in achieving competitive advantage and improving long-term business performance (Kero & Bogale, 2023). RBV explains how green innovation and sustainability practices can evolve from these intangible resources, which can help SMEs overcome resource constraints and strengthen their competitive position (Sohu et al., 2024).

The Triple Bottom Line (TBL) framework, introduced by John Elkington in 1994, has become a crucial model for assessing business sustainability through three dimensions: social, environmental, and economic. For SMEs, the importance of TBL lies in its holistic approach to sustainability, which goes beyond mere financial performance to include social and environmental impacts. Profitability remains essential for SMEs to achieve sustainable performance, requiring efficient and innovative operations (Ghag et al., 2023). However, the social dimension emphasizes the well-being of employees, customers, and communities, advocating for fair working conditions, employee engagement, and community involvement, which are critical for long-term success (Castellani et al., 2024). Environmentally, SMEs must adopt practices such as reducing carbon emissions, using renewable resources, and managing waste efficiently, which not only mitigate environmental impact but also offer competitive advantages in an increasingly eco-conscious market (Nogueira et al., 2023).

Implementing TBL in SMEs involves balancing these three aspects to achieve sustainable performance. For instance, environmentally friendly technologies can reduce long-term operating costs and enhance product appeal, while engaging local communities and focusing on employee well-being can boost loyalty and productivity, ultimately increasing profitability (Tundys & Wiśniewski, 2023). This comprehensive approach ensures that SMEs focus on long-term sustainability and growth, considering their social and environmental impacts alongside economic goals. The integration of TBL into business strategies helps SMEs navigate the complexities of international sustainable competitiveness, emphasizing the importance of managerial orientation and economic performance (Ghag et al., 2023). Moreover, the efficiency of sustainability practices varies across industries and over time, with firms needing to reach a certain threshold in sustainability performance before efficiency improves (Zhuang et al., 2023). Thus, TBL serves as a vital framework for SMEs globally, including in Malaysia, to ensure responsible and sustainable business continuity (Castellani et al., 2024; Zhuang et al., 2023).

The application of environmental sustainability and green innovation in SME is crucial for achieving sustainable development despite resource limitations. SME can significantly reduce emissions and energy use by conducting energy audits, replacing outdated equipment with energy-efficient alternatives, and using environmentally friendly transportation methods (Alraja et al., 2022). Effective waste management practices, such as implementing recycling programs, reducing production waste, and managing hazardous waste in compliance with regulations, are also essential for sustainability (Majid et al., 2023). Additionally, SME can enhance their environmental impact by using sustainable raw materials and opting for recyclable or biodegradable packaging (Majid et al., 2023). Green innovation plays a pivotal role in this context, enabling SMEs to develop eco-friendly products and services, collaborate with universities and suppliers committed to sustainability, and invest in green technologies and employee training (Rumanti et al., 2023).

Despite challenges such as limited resources and lack of awareness, the benefits of adopting these practices include cost efficiency, competitive advantage, and regulatory compliance, which ultimately improves the reputation and performance of SMEs (Bucheli-Calvache et al., 2023; Lutfi et al., 2023). Arsawan et al., (2024) the integration of GEI and EC further drives Circular Economic Practices, Enhancing Internal environmental management, eco-design, and corporate asset management and recovery. Moreover, the adoption of green management accounting practices has been shown to directly and significantly impact environmental performance, particularly in developing economies (Lutfi et al., 2023). Open innovation, facilitated by an open innovation climate, positively influences cleaner production and sustainability in SME, highlighting the importance of external knowledge adoption for better innovation outcomes (Phonthanukitithaworn et al., 2023). Therefore, by embracing sustainability practices and green innovation, SME can not only overcome resource constraints but also achieve long-term benefits and contribute to sustainable development.

H1: Environmental Sustainability has positively influenced Green Innovation

Green innovation and sustainability performance indeed share a symbiotic relationship, where each aspect reinforces the other. Green innovation, encompassing the development and application of environmentally friendly products, processes, or technologies, significantly reduces negative environmental impacts, such as carbon footprint, energy consumption, and pollution, thereby enhancing sustainability performance. For example, research indicates that Corporate Social Responsibility (CSR) and green innovation positively impact environmental performance, with green innovation acting as a mediator that enhances the dynamic resource and innovation capabilities of firms, leading to improved environmental outcomes (Bonsu et al., 2024). Additionally, green innovation contributes to operational efficiencies and cost savings through more efficient resource use and waste reduction, which in turn boosts economic performance (Taneja et al., 2023). Companies that adopt green innovations often enjoy a better reputation among consumers, investors, and other stakeholders, fostering increased support and loyalty (Sarfraz et al., 2023). Compliance with strict environmental regu-

lations through green innovation also mitigates legal and financial risks, further solidifying a company's sustainable performance (Doni & Fiameni, 2024).

Moreover, green innovation opens avenues for developing new products and services that cater to the growing environmentally conscious market, thereby enhancing competitiveness and creating new market opportunities (Lian et al., 2023). Employees in companies committed to sustainability are generally more motivated and engaged, which can further drive productivity and innovation (Taneja et al., 2023). This positive cycle, where green innovation and sustainability performance mutually reinforce each other, underscores the importance of integrating green innovation into corporate strategies to achieve long-term sustainability and competitive advantage (Bonsu et al., 2024; Doni & Fiameni, 2024; Sarfraz et al., 2023).

H2: Green Innovation has positively influenced Sustainability Performance

Green innovations indeed have a significant positive influence on the financial performance of companies by reducing operating costs through resource efficiency and waste reduction, which in turn increases profitability. For example, SMEs that adopt resource efficiency actions such as saving water, energy, and materials, and minimizing waste, experience reduced production costs and improved financial health, which supports sustainable innovation and development (Majid et al., 2023). Additionally, green innovation facilitates product differentiation and access to new markets, providing a competitive advantage. This is evident in the positive relationship between CSR and Corporate Financial Performance (CFP), where Green Innovation Performance (GIP) plays a significant mediating role, enhancing the efficiency and effectiveness of green practices (Homayoun et al., 2023). Compliance with environmental regulations also saves companies from legal and financial risks, as seen in high-innovation companies (HICs) that benefit from adhering to environmental guidelines, which positively impacts their CFP (Doni & Fiameni, 2024).

Furthermore, green finance significantly boosts green innovation, particularly in developing countries, by increasing the number of green patent applications, which is crucial for promoting green development and providing a policy foundation for sustainable growth (Ma & Chang, 2023). A good reputation and easier access to capital are additional benefits, as companies with robust CSR practices and green innovation strategies are more attractive to investors and stakeholders, leading to better financial performance (Sarfraz et al., 2023). Increased productivity and employee motivation also strengthens the relationship between green innovation and positive financial performance, as employees in firms that prioritize CSR and green innovation are more engaged and productive, contributing to overall firm success (Zhenjing et al., 2022). Thus, the adoption of green innovations not only supports environmental sustainability goals but also provides significant financial advantages for companies, making it a strategic imperative for modern businesses.

H3: Green Innovation has positively influenced Financial Performance

Environmental sustainability, green innovation, and sustainable performance are intricately linked and mutually reinforcing. Green innovation, encompassing the development of eco-friendly products, processes, and technologies, is pivotal in achieving environmental sustainability by mitigating adverse environmental impacts and enhancing resource efficiency. For example, green process innovation and proactive sustainable strategies significantly boost environmental performance in agricultural technology firms by promoting cleaner production techniques and sustainability-oriented strategies (Asif, 2023). Moreover, corporate ESG performance positively influences green innovation by alleviating financing constraints, enhancing human capital, and reducing management myopia, which in turn fosters green innovation and improves its quality and efficiency (Lian et al., 2023). Sustainable Business Model Innovation (SBMI) and Green Technology Innovation (GTI) also play crucial roles in creating shared social and business value, with a significant matching effect between SBMI and GTI leading to superior sustainable corporate performance (SCP) (Zhou et al., 2023). Additionally, adopting green innovation strategies has been shown to increase a firm's innovation success, particularly in terms of higher turnover from radical product innovations, although the overall performance benefits may require policy support to be fully realized (Becker, 2023).

Despite the short-term negative impact on firm performance due to the costs associated with environmental innovation and resource use, the long-term benefits include improved sustainability and marketability efficiency, as well as a positive reputation and strengthened public trust (Mao et al., 2023). These efforts not only help companies comply with stringent environmental regulations and avoid fines but also provide a competitive edge by attracting environmentally conscious consumers and opening new market opportunities. Thus, green innovation is essential for enhancing a company's overall sustainability performance, ensuring sustainable growth, and fostering a positive corporate image.

H4: Green Innovation has a significant mediating effect on the relationship between Environmental Sustainability and Sustainability Performance

Environmental sustainability and green innovation are indeed crucial for the financial performance of SME. Implementing green innovations, such as energy-efficient technologies and waste management practices, can significantly reduce operating costs by minimizing energy consumption and raw material use, directly enhancing financial performance (Homayoun et al., 2023). Additionally, green innovation helps SME comply with stringent environmental regulations, avoiding fines and sanctions that could negatively impact their finances (Doni & Fiameni, 2024). This compliance not only prevents financial penalties but also improves the company's reputation among consumers and investors who prioritize environmental responsibility, thereby attracting more customers and opening new market opportunities, which can boost sales and revenue (Bonsu et al., 2024). Moreover, the adoption of green practices fosters a positive work environment, increasing employee engagement and motivation. Employees in environmentally conscious companies tend to be more satisfied and productive, con-

tributing to operational efficiency and generating innovative ideas that further enhance environmental performance (Lutfi et al., 2023).

The integration of green innovation and CSR also mediates the relationship between environmental and financial performance, suggesting that sustainable development and green strategies are essential for achieving financial harmony (Bonsu et al., 2024). Furthermore, the joint effect of green innovation and environmental, social, and governance (ESG) reporting has been shown to positively impact financial performance, particularly with moderate investment in green innovation (Majid et al., 2023). Therefore, adopting green practices and technologies is a highly profitable strategy for SMEs, offering reduced operating costs, regulatory compliance, improved reputation, increased sales, and enhanced employee engagement, all of which contribute to better financial performance in the long term.

H5: Green Innovation has a significant mediating effect on the relationship between Environmental Sustainability and Financial Performance

Following the hypotheses development, the theoretical framework of this study is established, Figure 2.1 depicts the theoretical framework of this study

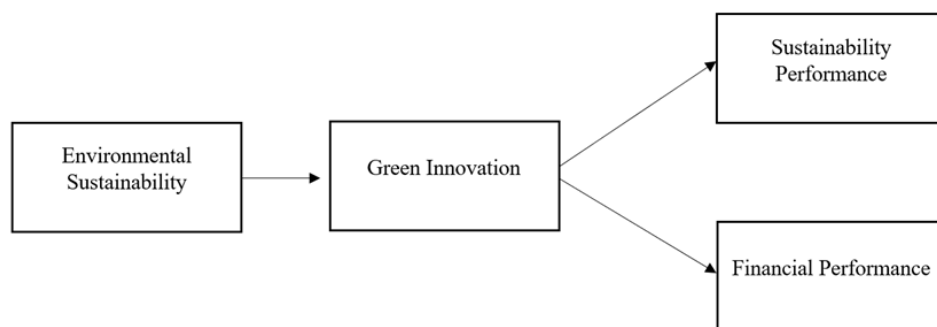


Figure 2.1 The Theoretical Framework of the Study

METHOD

The research design refers to the research layout for collecting and evaluating the necessary information (Sekaran & Bougie, 2013). These options can use to manage the questionnaire design, data collection techniques, instrument scale, determine the sampling size, and data analysis procedures. This quantitative research employed primary data, described as first-hand information on the variables of concern for specific research objectives (Sekaran & Bougie, 2013). In this context, it is defined as the information collected through a list of questions in the form of a questionnaire addressed to an estimated number of respondents (Sugiyono, 2014). This research is entrepreneurs from Small and Medium-sized Enterprises (SMEs) in Indonesia, these are directly distributed through owners or business leaders of various SMEs in Indonesia. According to Bougie and Sekaran (2013), a questionnaire is a set of written questions formulated in advance to record the respondents' answers.

This study has adopted a survey method by applying a self-administered questionnaire at a specific point. This suitable approach was used to obtain enough data within a short time, enable much broader geographic locations to be covered, and eliminate the existence of interview bias (Bell et al., 2018). Furthermore, the survey method was used to collect data from a large population at a lower cost than other methods. It consumes lesser time and is more efficient in obtaining information on a large scale. The method employed a self-administered questionnaire at a specific point for data collection purposes. This is a suitable technique because it is used to acquire enough data within a short time and aids in covering much broader geographic locations, and eliminates interview bias (Bell et al., 2018). Also, the survey method helps obtain data from a large population at a lesser cost than other techniques. It is less time-consuming and more efficient in getting data on a big scale.

The population of this study consists of Small and Medium Enterprises (SMEs) in only Jakarta (Indonesia), which play a significant role in national economic growth through their contribution to employment and Gross Domestic Product (GDP). This study adopts a cross-sectional research design, with data collected at a single point in time from SME owners or managers, as they are the primary decision-makers responsible for business strategies, sustainability practices, innovation, and financial performance. The sample is selected using a combination of stratified sampling and simple random sampling to ensure adequate representation across different business sectors and equal selection opportunities for each SME. Primary data are collected through a self-administered questionnaire using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The collected data are analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The analysis includes the assessment of the measurement model (outer model) to evaluate reliability and validity, followed by the evaluation of the structural model (inner model) to examine the proposed relationships and test the research hypotheses.

RESULT AND DISCUSSION

A total of 198 questionnaires were collected from SME owners and managers in Jakarta, Indonesia, and all were valid for analysis. Table 1 presents the demographic profile of the respondents. The majority of respondents were male (51.5%), aged between 36 and 40 years (24.7%), and had 5–10 years of business experience (34.8%). Most respondents held a bachelor's degree (35.4%). In terms of business characteristics, micro enterprises represented the largest proportion (42.4%), while most businesses had been operating for 2–10 years (31.8%). Overall, the respondents were considered experienced SME owners or managers capable of providing reliable information regarding sustainability practices, innovation, and business performance.

Table 1. Characteristics of respondents

Characteristic	Frequency	(%)
<i>Gender</i>		
Male	102	51.5
Female	96	48.5
<i>Age</i>		
25–30 years	38	19.2
31–35 years	46	23.2
36–40 years	49	24.7
41–45 years	37	18.7
>46 years	28	14.1
<i>Experience</i>		
<5 years	41	20.7
5–10 years	69	34.8
11–15 years	53	26.8
>15 years	35	17.7
<i>Education</i>		
Junior high school	12	6.1
Senior high school	68	34.3
Diploma	38	19.2
Degree	70	35.4
Master	10	5.1
Ph.D	0	0.0
<i>Business size</i>		
Micro	84	42.4
Small	72	36.4
Medium	42	21.2
<i>Business age</i>		
2–10 years	63	31.8
11–19 years	58	29.3
20–28 years	41	20.7
29–37 years	22	11.1
>38 years	14	7.1

This study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) as the analytical technique to examine the proposed research model. PLS-SEM is an appropriate method for evaluating complex relationships between multiple constructs by integrating regression analysis within a structural model framework. Since PLS-SEM is a non-parametric

approach, it does not require data to meet strict normality assumptions and can be applied effectively with relatively smaller sample sizes (J.F Hair et al., 2017). This multivariate statistical technique enables researchers to assess both the measurement model and the structural model while minimizing error variance.

In this research, SmartPLS version 4 was utilized to evaluate the conceptual framework and investigate the relationships among the proposed constructs (Hair et al., 2014). PLS-SEM was selected because it allows for the simultaneous assessment of construct validity and the estimation of relationships among variables (J.F Hair et al., 2017). Furthermore, the structural model was evaluated using the bootstrapping procedure with 5,000 resamples to determine the significance of the hypothesized relationships.

Common method bias (CMB) represents a potential threat to the validity and reliability of survey-based research, particularly when data are obtained from a single source. To minimize this risk, the present study ensured respondent anonymity, thereby encouraging more honest and unbiased responses while also improving participation rates (Miller & Cardinal, 1994). Furthermore, Harman's single-factor test was conducted to assess the presence of common method bias, following the procedure recommended by Podsakoff et al., (2003). The results show that which is less than 50% variance.

Reliability represents the internal consistency of the data. First, we assessed the internal consistency through Cronbach's alpha and composite reliability (CR) values in Table 2 below. The Cronbach's alpha values ≥ 0.70 represent internal consistency in the data (Hair et al consistency (Hair et al., 2014), therefore, we also measured CR values. The composite reliability (CR) values of all constructs were greater than 0.70, representing the internal consistency of the data. For the measurement of convergent validity, two validity tests were performed: convergent validity and discriminant validity. Convergent validity refers to the degree of relationship among the constructs.

Discriminant validity tests whether constructs are unrelated to each other. According to Hair et al. (2014), convergent validity establishes when the values of average variance are extracted (AVE) ≥ 0.50 . In this study the values of all constructs' AVE ranges were 0.668 to 0.765, thus confirming convergent validity, as shown in Table 2 below. Fornell & Larcker, 1981) criterion and Heterotrait–Monotrait (HTMT) methods were used to assess the discriminant validity in Table 3 below. The values of the square root of AVEs are greater than corresponding correlations among the constructs, confirming discriminant validity (Fornell and Larcker 1981; Farrell 2010). Next, the assessments of HTMT values also confirmed discriminant validity as the ratio between two constructs were less than 0.90 (Henseler et al., 2015).

Table 2. Constructs' reliability and convergent validity.

Constructs	Indicator	Loading	CA	CR	AVE
Environmental Sustainability	ES1	0.854	0.887	0.891	0.688
	ES2	0.786			
	ES3	0.852			
	ES4	0.830			
	ES5	0.824			
Green Innovation	GI1	0.838	0.849	0.849	0.691
	GI2	0.846			
	GI3	0.881			
	GI4	0.754			
Sustainability Performance	SP1	0.863	0.897	0.898	0.765
	SP2	0.903			
	SP3	0.864			
	SP4	0.867			
Financial Performance	FP1	0.851	0.925	0.926	0.728
	FP2	0.855			
	FP3	0.853			
	FP4	0.918			
	FP5	0.849			
	FP6	0.787			

Note: CA = Cronbach's alpha; CR = Composite reliability; AVE = Average variance extracted.

Table 3. Discriminant Validity.

	1	2	3	4
ES	0.842			
FP	0.796	0.853		
GI	0.829	0.817	0.831	
SP	0.735	0.753	0.739	0,875

The proposed hypotheses were examined using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. To assess the predictive capability of the structural model, predictive relevance (Q^2) values were evaluated using the cross-validated redundancy measure. According to Hair et al. (2014) and Henseler et al., (2009), Q^2 values greater than zero indicate that the model has satisfactory predictive relevance. In this study, the Q^2 values were obtained through the blindfolding procedure, and all endogenous constructs produced values exceeding zero, confirming the model's predictive accuracy. Hypothesis testing was conducted by evaluating the path coefficients, t-statistics, and p-values. The path coefficient reflects the direction and strength of the relationships among the constructs, with values closer

to +1 indicating stronger positive relationships (Hair et al., 2017). Meanwhile, the significance of the proposed relationships was determined based on the corresponding t-statistics and p-values. The conceptual framework developed in this study consists of four hypotheses, all of which were tested using the PLS-SEM procedure. The results of the tested hypotheses have been summarized in Table 4 below.

Table 4. Hypotheses Testing Results.

Hypotheses	Path Coefficient	p-Values	T statistics (O/STDEV)	Decision
ES -> GI	0.024	0.000	35.120	Supported
GI -> SP	0.052	0.000	14.159	Supported
GI -> FP	0.030	0.000	26.873	Supported
ES -> GI -> SP	0.052	0.000	11.884	Supported
ES -> GI -> FP	0.039	0.000	17.747	Supported

Note: ES = Environmental Sustainability; GI= Green Innovation; SP = Sustainability Performance; FP = Financial Performance.

The findings demonstrate that Environmental Sustainability (ES) has a positive and significant effect on Green Innovation (GI) ($\beta = 0.024$, $t = 35.120$, $p < 0.001$). Therefore, H1 is supported, indicating that SMEs with stronger commitments to environmental sustainability are more likely to adopt and develop green innovation practices. These findings suggest that environmental sustainability serves as an important strategic driver encouraging firms to introduce environmentally friendly products, production processes, and organizational practices (Lopes et al., 2022). As environmental awareness increases, firms become more motivated to invest in innovative technologies that reduce pollution, improve energy efficiency, minimize waste generation, and utilize environmentally friendly materials (Sahoo et al., 2023). Such innovations not only address environmental concerns but also strengthen organizational competitiveness and long-term business resilience (Ooi & Memon, 2025).

The findings of this study are in line with the TBL put forward by Elkington, 1994), which states that business sustainability must be able to create economic, environmental, and social value simultaneously. In this perspective, environmental sustainability is not only seen as a form of regulatory compliance, but also as a strategic capability that encourages the creation of green innovation. In addition, the results of the study also support the Resource-Based View (RBV), which explains that environmental sustainability practices produce intangible resources, such as knowledge, organizational learning, and managerial competence, which are the basis for the development of green innovation and the company's competitive advantage (Malik et al., 2020). These findings are consistent with previous research that shows that the implementation of environmental sustainability practices is able to increase the development of environmentally friendly technology, product innovation, employee training, waste management, and operational efficiency, thereby strengthening the ability of green innovation in SME (Bataineh et al., 2024).

The empirical results indicate that Green Innovation positively and significantly influences Sustainability Performance ($\beta = 0.052$, $t = 14.159$, $p < 0.001$). Accordingly, H2 is supported, suggesting that SMEs implementing higher levels of green innovation achieve superior sustainability performance. Green innovation enables firms to integrate environmental responsibility into their operational activities while simultaneously generating economic and social benefits (Li et al., 2025). This finding indicates that environmentally friendly innovation contributes directly to achieving balanced organizational performance across environmental, economic, and social dimensions (Sarfraz et al., 2023).

Theoretically, these findings extend the TBL and RBV theories by demonstrating that green innovation functions as a valuable organizational capability that enables firms to utilize resources effectively and achieve sustainable competitive advantages (Mukhtar et al., 2026). From an RBV perspective, green innovation represents a strategic resource that helps SMEs overcome resource limitations, improve sustainability practices, and enhance long-term performance, particularly in developing country contexts (Aslam et al., 2025).

The empirical findings reveal that Green Innovation (GI) has a positive and significant influence on Financial Performance (FP) ($\beta = 0.030$, $t = 26.873$, $p < 0.001$). Therefore, H3 is supported, indicating that SMEs implementing higher levels of green innovation tend to achieve superior financial performance. These findings suggest that green innovation is not merely an environmental strategy but also an important business strategy capable of generating tangible economic benefits (Achmad & Wiratmadja, 2025). Through environmentally friendly production processes, efficient resource utilization, cleaner technologies, and sustainable product development, SMEs can reduce operating costs while simultaneously improving productivity, profitability, and market competitiveness (Achmad & Wiratmadja, 2025).

These findings support the TBL framework by demonstrating that green innovation functions as a strategic capability that enables firms to achieve competitive advantage while balancing environmental and economic objectives. By integrating technological knowledge, managerial capabilities, and sustainable practices, green innovation improves resource efficiency, reduces operational costs, strengthens stakeholder relationships, and enhances financial performance (Fawaid et al., 2026). Syafriani, (2025) in the context of Indonesian SME, green innovation through eco-friendly technologies, cleaner production systems, and sustainable products provides opportunities to improve competitiveness and long-term financial sustainability. This study highlights that green innovation is not merely an environmental initiative but a valuable strategic investment that supports sustainable growth in emerging economies.

The findings demonstrate that Green Innovation significantly mediates the relationship between Environmental Sustainability and Sustainability Performance ($\beta = 0.052$, $t = 11.884$, $p < 0.001$). Therefore, H4 is supported, indicating that environmental sustainability enhances sustainability performance indirectly through the implementation of green innovation. This finding suggests that environmental sustainability alone is insufficient to maximize sustaina-

bility performance unless organizations transform their environmental commitments into concrete innovative actions (Meidute-Kavaliauskiene et al., 2021). Green innovation therefore acts as a strategic mechanism through which environmental sustainability is translated into measurable improvements in organizational sustainability (Mohmand et al., 2026).

The mediation effect supports the TBL framework, which emphasizes the integration of environmental, social, and economic objectives in achieving sustainable organizational outcomes (Elkington, 1994). The mediation effect supports the RBV (Barney, 1991), which highlights that firms achieve competitive advantage by developing valuable and unique resources and capabilities. Green innovation functions as a strategic capability that transforms environmental sustainability initiatives into improved sustainability performance through technological knowledge, efficient resource utilization, and organizational learning. Previous studies confirm that green innovation enhances sustainability outcomes by promoting cleaner production, operational efficiency, and long-term competitiveness (Ahmed et al., 2023). Lestari & Sunyoto, (2023) in the context of Indonesian SMEs, green innovation enables firms to overcome resource limitations and achieve sustainable competitive advantage by adopting eco-friendly technologies and innovative practices.

The empirical findings indicate that Green Innovation significantly mediates the relationship between Environmental Sustainability and Financial Performance ($\beta = 0.039$, $t = 17.747$, $p < 0.001$). Accordingly, H5 is supported, demonstrating that environmental sustainability contributes to improved financial performance primarily through the implementation of green innovation. This finding implies that environmental sustainability alone does not automatically generate financial benefits. Instead, organizations must transform their environmental commitment into innovative technologies, products, and operational processes that create economic value (Putra et al., 2025).

The mediation effect supports the RBV, which explains that environmental sustainability develops organizational capabilities that can be transformed through green innovation into strategic advantages and improved financial performance. From an RBV perspective, green innovation represents a valuable strategic capability that integrates technological knowledge, resource efficiency, and organizational learning to create long-term competitive advantages (Labella-Fernández et al., 2026). Furthermore, these findings are consistent with the TBL framework proposed by Elkington (1994), which emphasizes that organizational success should balance economic performance, environmental responsibility, and social value. Through green innovation, firms can transform environmental initiatives into economic benefits by improving resource efficiency, reducing operational costs, minimizing environmental impacts, and strengthening market competitiveness. Previous studies confirm that green innovation enhances financial outcomes by lowering production costs, increasing innovation capability, and improving organizational performance (Handoyo, 2024). In the context of Indonesian SME, adopting eco-friendly technologies, cleaner production systems, and sustainable practices enables firms to reduce costs, capture sustainable market opportunities, and

achieve long-term financial sustainability (Achmad & Wiratmadja, 2025). This study contributes to the RBV perspective and sustainability literature by demonstrating that green innovation serves as a strategic mechanism linking environmental sustainability with superior financial performance while supporting the balanced sustainability objectives emphasized in the TBL framework.

CONCLUSION AND SUGGESTION

Based on the findings of this study, it can be concluded that environmental sustainability plays a crucial role in driving green innovation among Indonesian SMEs. Green innovation not only contributes to enhancing overall sustainability performance but also has a significant positive impact on the financial performance of these enterprises. Furthermore, green innovation functions as a mediating variable that strengthens the relationship between environmental sustainability and both sustainability and financial performance. These results support the Resource-Based View and Triple Bottom Line frameworks, emphasizing the importance of integrating social, environmental, and economic aspects into business strategies to achieve long-term sustainability. The study highlights that the implementation of green innovation is a vital strategy for improving competitiveness and ensuring the sustainable growth of SMEs in Indonesia.

This study recommends that SMEs in Indonesia become more proactive in adopting environmental sustainability practices and green innovation to enhance their performance and competitiveness. Government support through incentives and training is expected to facilitate the implementation of sustainability initiatives. Additionally, further research is suggested to explore long-term impacts and other moderating variables. By taking these steps, SMEs are expected to develop sustainably, become more environmentally friendly, and maintain global competitiveness.

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