

## THE ROLE OF GREEN PERCEIVED VALUE AND INNOVATION IN SMALL, AND MEDIUM ENTERPRISES COMPETITIVENESS

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### ABSTRAK

*Penelitian ini bertujuan untuk menguji dampak Pemasaran Hijau terhadap Daya Saing Usaha Kecil dan Menengah (UKM) dengan menyelidiki peran Persepsi Nilai Hijau sebagai mediator dan Inovasi Hijau sebagai moderator. Menggunakan pendekatan kuantitatif dengan desain survei, data dikumpulkan dari 97 pemilik dan pengelola UKM di Serang yang menerapkan praktik hijau, dan dianalisis dengan metode SEM-PLS. Hasil penelitian menunjukkan bahwa Pemasaran Hijau tidak memiliki dampak langsung yang signifikan terhadap Daya Saing UKM. Namun, Pemasaran Hijau terbukti meningkatkan Persepsi Nilai Hijau konsumen secara signifikan, yang berfungsi sebagai mediator penuh antara Pemasaran Hijau dan Daya Saing UKM. Temuan ini menekankan bahwa efektivitas strategi hijau sangat bergantung pada bagaimana konsumen menilai dan merespon produk tersebut. Selain itu, Inovasi Hijau berperan sebagai moderator yang memperkuat dampak positif Persepsi Nilai Hijau terhadap Daya Saing UKM. Dengan demikian, untuk mencapai keunggulan kompetitif yang berkelanjutan, Pemasaran Hijau harus diintegrasikan dengan inovasi yang memperkuat nilai di mata konsumen dan memberikan dampak yang lebih besar bagi UKM.*

*Kata kunci: pemasaran hijau, persepsi nilai hijau, inovasi hijau, daya saing UKM*

### ABSTRACT

This study aims to examine the impact of Green Marketing on Small and Medium Enterprises (SMEs) Competitiveness by investigating the role of Green Perceived Value as a mediator and Green Innovation as a moderator. Using a survey design, quantitative data were collected from 97 owners and managers of SMEs in Serang who implement green practices and analyzed using the SEM-PLS method. The results show that Green Marketing does not have a significant direct impact on SMEs Competitiveness. However, Green Marketing significantly increases consumers' Green Perceived Value, which fully mediates the relationship between Green Marketing and SMEs Competitiveness. This finding emphasizes that the effectiveness of green strategies largely depends on how consumers evaluate and respond to the products. Additionally, Green Innovation acts as a moderator, strengthening the positive impact of Green Perceived Value on SMEs Competitiveness. Therefore, to achieve sustainable competitive advantage, Green Marketing must be integrated with innovations that enhance value in consumers' eyes, thereby delivering greater impact for SMEs.

Key words: green marketing, green perceived value, green innovation, SMEs competitiveness

### INTRODUCTION

Small and Medium Enterprises (SMEs) in developing countries like Indonesia face

significant challenges in expanding their market share and amidst intense global competition. One of the main issues is their

upward consumer awareness of environmental issues and ecological products impact. Therefore, the consumers are increasingly inclined to choose products that are not only high-quality but also environmentally friendly. The shift demands that SMEs adapt to a market that prioritizes sustainability. While SMEs play a crucial role in creating jobs and driving inclusive economic growth. Their success is heavily dependent on their ability to respond to environmental concerns (Rahimah et al., 2018). In response to the shift in consumer behavior, green marketing has emerged as a potential strategy to enhance SMEs competitiveness. The shift in consumer behavior in Indonesia reflects an increasing awareness of environmental sustainability (Hariadi et al., 2023). The study reveals that Indonesian consumers are willing to pay more for environmentally friendly products, with purchase intentions positively influenced by environmental awareness and perceptions of a company's sustainable image. Additionally, Komaladewi et al. (2024) found that the majority of respondents are willing to pay 10-25% more for green products. This phenomenon reflects a shift in consumer attitudes, so that environmental awareness influences product and company choices. Green marketing has emerged as a potential strategy to enhance SME competitiveness.

Green marketing promotes eco-friendly products and practices. By highlighting ecological benefits, SMEs tap into rising consumer demand for green alternatives. Chung (2020) shows that green marketing boosts product sales by shaping positive views of a product's environmental impact. Products marketed as sustainable are perceived as more valuable (Ghobbe & Nohekhan, 2023; Mazwan et al., 2023; Nafisah, 2022). These studies indicate green marketing helps SMEs strengthen their market positions and compete globally.

Although much literature links green marketing to increased competitiveness, the relationship remains inconsistent. Bahri (2022) shows that green marketing does not always have a direct impact on competitiveness. This

inconsistency is due to differences in market conditions, varying consumer awareness, and the diversity in the implementation of green practices across SMEs. It indicates that the relationship is not yet fully understood. Biby et al. (2023) and Putri and Murwaningsari (2023) found that green marketing does not significantly impact SMEs sustainability. Meanwhile, Nuryakin and Maryati (2022) state that the effect of green marketing orientation on SME performance is complex and not always direct, due to inconsistent implementation and external factors influencing SMEs. Giantari et al. (2021) also support that environmental orientation is not always directly related to competitive advantage. The primary reason for this inconsistency lies in how SMEs implement green marketing, along with external factors such as market dynamics and consumer awareness of environmental issues. This inconsistency opens an opportunity to explore factors affecting SME competitiveness.

Furthermore, this study addresses the gap in the literature on how green marketing enhances SME competitiveness by examining the mediating role of green perceived value and the moderating role of green innovation. Green marketing can improve SME competitiveness, but its impact is not always clear or direct. It also explores how green perceived value mediates the relationship between green marketing and competitiveness, and how green innovation strengthens this effect.

The mediation by green perceived value was chosen due to previous research indicating consumer perceptions of environmentally friendly SME products that can increase their product value. They enhance the products' competitiveness in the market (Ghobbe & Nohekhan, 2023). Green perceived value plays a vital role in explaining how green marketing shapes consumer attitudes towards SMEs products (Bestari & Butarbutar, 2021). Green innovation as a moderator is based on Porter's (1985) competitive advantage theory. Its differentiation is a key to gaining a competitive edge, especially in markets that are increasingly sensitive to environmental issues (Camilleri et

al., 2023). Green innovation enables SMEs to differentiate their products by offering more eco-friendly solutions. It ultimately strengthens the relationship between green marketing and competitiveness. By incorporating both elements, this study offers a comprehensive understanding of how green marketing affects consumer perceptions and how green innovation can enhance its impact on SMEs competitiveness (Sanny et al., 2024).

In addition, this research examines how green marketing impacts SMEs competitiveness by clarifying two key relationships. The first is green perceived value acts as a mediator, explaining how consumer perceptions of environmental attributes influence SME competitiveness. The second is green innovation function as a moderator, revealing when or for whom green marketing more strongly affects competitiveness. Its focus is on SMEs in developing countries, an area that remains underexplored. By integrating mediation and moderation, this study provides a clear understanding of the mechanisms by which green marketing strategies influence SME competitiveness.

The primary contribution of this research is a deeper understanding of the role of green innovation as a moderator in SME competitiveness. By leveraging innovative green marketing strategies, SMEs can stand out in markets that value sustainability. This contribution, particularly the impact of green innovation on SMEs competitiveness, is the aspect most strongly supported by the study's findings. This research provides insights into how the combination of green marketing, perceived value, and green innovation affects SME competitiveness, especially in developing countries. It will enrich literature on green marketing and innovation strategies for SMEs, offering practical implications for policy and strategy development.

## **THEORETICAL REVIEW**

### **Green Marketing**

Green marketing refers to promoting products and services that highlight their

environmental benefits. This strategy is becoming increasingly important as consumers pay more attention to the environmental impact of their purchasing decisions, often choosing products that align with sustainability values. According to Esmaelnezhad et al. (2023), green marketing is a key strategy for differentiating companies by emphasizing the eco-friendly attributes of their products. By adopting sustainable practices, using recycled materials and green production processes, companies not only meet consumer expectations but also create opportunities for differentiation and added value (Capatina et al., 2016).

Green marketing includes several indicators such as green products, green pricing, green distribution, and green promotion (Su & Li, 2024; Li et al., 2024). Green products are those free from harmful substances and safe for consumption. Green pricing reflects the added value of eco-friendly products through competitive pricing. Green distribution involves the use of environmentally friendly packaging in the distribution process. While green promotion focuses on marketing efforts in educating and raising consumer environmental awareness.

Although the concepts and indicators of green marketing, such as green products, pricing, distribution, and promotion, generally refer to global literature, they remain relevant for SMEs in Indonesia. Khuan et al. (2024) shows that increased environmental awareness among Indonesian consumers. Thus, SMEs can leverage green marketing strategies to differentiate themselves in a more competitive market. Environmentally friendly practices, using recycled materials or eco-friendly packaging, not only meet consumer expectations but also create opportunities for product differentiation and improved competitiveness in line with global sustainability trends.

### **Green Perceived Value**

Green Perceived Value refers to the value given by consumers to products based on the environmental benefits which influences their

purchasing decisions. According to the Perceived Value theory proposed by Zeithaml (1988), it perceived value is the result of a comparison between the perceived benefits and the price paid. Research by Ghobbe & Nohekhan (2023) and Sun & Yoon (2022) show that consumers tend to assign a higher value to products considered eco-friendly, even if the price is higher.

The indicators for measuring green perceived value are based on the studies of Majid et al. (2023) and Tang et al. (2024). They include Functional Value, Social Value, Emotional Value, and Financial Value. The first refers to the clear functional and environmental benefits of the product. Social Value relates to the emotional satisfaction of consumers from using eco-friendly products. Emotional Value encompasses the comfort and well-being gained from consuming products that contribute to environmental preservation. Last, Financial Value offers long-term economic benefits.

Although the concepts and measurement indicators of green perceived value are largely drawn from the global literature, they remain relevant and applicable to research on SMEs in Indonesia. The study by Dorothy et al. (2024) shows that environmental awareness among Indonesian consumers has increased, with consumers now paying more attention to sustainability factors. So, SMEs that integrate eco-friendly practices can use the indicators of green perceived value, such as functional, social, emotional, and financial value, to measure the value consumers place on their products. Then, SMEs in Indonesia can align their products with the growing consumer concern for environmental issues, while also enhancing their competitiveness in a market that increasingly values sustainability.

### **Green Innovation**

Green Innovation involves developing products, processes, and technologies to minimize negative environmental impacts. It can include green products made with eco-friendly materials or produced using energy-efficient processes, as well as innovations in

resource management and the use of environmentally friendly technologies. According to Agazu & Kero (2024) and Hariadi et al. (2023), green innovation plays a crucial role in creating added value that strengthens a company's position in an increasingly environmentally conscious market. According to the Resource-Based View (RBV), companies with leverage unique, hard-to-imitate internal resources, eco-friendly technologies and sustainability expertise, can gain a competitive advantage (D'Oria et al., 2021).

The indicators for measuring green innovation are adapted from Li et al., (2022) and Ahmed et al., (2023). The Green Product Innovation, focus on developing products with eco-friendly materials and energy efficiency. Green Process Innovation involves eco-friendly production techniques. Green Managerial Innovation implements internal procedures that support environmentally responsible practices. Green Technology Innovation develops technologies that reduce environmental impact and improve sustainability (Nuryakin & Maryati, 2022). Dinata et al. (2024) explains that SMEs in Indonesia have implemented green innovation through eco-friendly products, waste management, green packaging, and a green entrepreneurship orientation to promote sustainability. With growing environmental awareness, SMEs can adopt green innovations in products, processes, and technologies to enhance competitiveness and sustainability in a market increasingly concerned with environmental issues.

### **SME competitiveness**

SME competitiveness refers to the ability of micro, small, and medium enterprises to effectively compete in the market by creating sustainable competitive advantages. To measure SME competitiveness, indicators have been developed based on research by Zahara et al. (2024) and Thomran et al. (2022). SMEs' environmental commitment and Business Reputation reflect a company's positive sustainability image. Competitive Advantage refers to the edge gained from

offering high-quality, eco-friendly products. These indicators strengthen SMEs' positions in a market that increasingly values sustainability.

After explaining the concepts and measurement of variables, the framework for the relationships between variables is as follows: SME competitiveness can be achieved through green marketing as the primary differentiation strategy. Green marketing emphasizes the value of eco-friendly products, such as recycled materials, reduced carbon footprints, and energy efficiency (Esmaelnezhad et al., 2023). This strategy attracts consumers who care about environmental impacts and provides SMEs with long-term competitive advantages by building a positive image. To strengthen this position, SMEs can adopt green innovations, such as eco-friendly technologies, that meet consumers' growing focus on sustainability (Chen & Liu, 2019). This approach helps SMEs enhance their competitiveness and position in an environmentally conscious market.

In the Resource-Based View (RBV) framework, competitive advantage can be obtained through the management of unique, special, and inimitable internal resources, sustainable raw materials and efficient production techniques. Green technologies and expertise in environmental awareness are vital assets that can improve a company's position (Maianto et al., 2024). From the perspective of Consumer Perception Theory, purchasing decisions are influenced by consumer perceptions of the environmental impact of products (Iqbal et al., 2023). Environmentally conscious consumers tend to place higher value on eco-friendly products, even if they are priced higher than conventional alternatives (Shih et al., 2024). By adopting green innovation, SMEs can strengthen product differentiation and improve overall competitiveness. Based on the description of the theoretical framework, we present the proposed research framework in Figure 1.

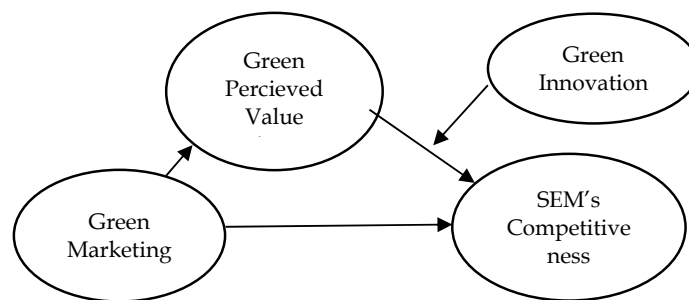


Figure 1  
Conceptual framework

Source: Model developed from previous research models, 2025

**Hypothesis**

Green marketing is crucial for enhancing corporate competitiveness in today's business environment. Moravcikova et al. (2017) highlight that businesses integrating eco-friendly practices can boost their competitive advantage by aligning with growing consumer environmental awareness. Saputra & Saggaff (2024) also emphasize that green marketing acts as a differentiation strategy, providing value through sustainable products and

services. Furthermore, Arseculeratne and Yazdanifard (2013) argue that embracing green marketing allows companies to gain a competitive edge by responding to increasing consumer demand for eco-conscious products.

The Resource-Based View theory posits that unique, valuable resources—such as eco-friendly products and strong brands—give businesses significant competitive advantages. In this context, green marketing acts as a strategic tool to help firms overcome

market challenges and enhance performance (Nuryakin & Maryati, 2022). Bestari & Butarbutar (2021) report that SMEs that use sustainable marketing, supported by effective market education, can foster consumer interest and loyalty, thereby improving competitiveness. Mendrofa (2024) adds that trust in eco-friendly products builds brand loyalty, while Sanny et al. (2024) argue that green marketing enables SMEs to access environmentally conscious markets, offering a long-term advantage. Based on the insights, the hypothesis is proposed as follows:

H<sub>1</sub>: Green marketing has a positive impact on SME'S competitiveness.

According to the theory of perceived value developed by Zeithaml (1988), consumer interest in product results from a comparison between the product's perceived value and its actual value. Ghobbe and Nohekhan (2023) state that consumer perceptions of value today are not only based on traditional factors such as functionality and price but also reflect environmental concerns. Sun and Yoon (2022) supports the view that consumers are willing to pay more for products they consider environmentally friendly. Therefore, the dimensions of perceived value have evolved, incorporating environmental considerations alongside conventional factors such as quality and cost.

Wandosell et al. (2021) and Kaur et al. (2022) show that green marketing, including sustainable production methods, recyclable packaging, and eco-friendly raw materials, can increase consumers' perceived product value. Ghobbe and Nohekhan (2023) emphasize that consumers who are increasingly concerned about environmental issues tend to assign greater value to eco-friendly products. Alam et al. (2023) add that consumers appreciate products that demonstrate social and environmental responsibility, believing they benefit society and the environment in the long term. Further studies by Ghobbe & Nohekhan (2023) and Reddy et al. (2023) confirm that green marketing enhances positive consumer

perceptions, strengthening the competitiveness of eco-friendly products in the market. Based on these insights, the following hypothesis is proposed as follows:

H<sub>2</sub>: Green marketing has a positive impact on the perceived value.

According to the perceived value theory proposed by Zeithaml (1988), Consumer interest in a product is shaped by comparing its perceived value with its actual value. This theory highlights that perceived value is influenced by functional, price, and environmental considerations. Consumers evaluate products by weighing benefits against sacrifices, with factors such as quality, price, and additional benefits playing a crucial role in their purchasing decisions. Lin (2022) supports this by finding that consumers are more likely to repurchase products offering high value, including quality, affordability, and sustainability. Thus, perceived value increasingly reflects both traditional factors and heightened environmental awareness, shaping consumer preferences and behavior.

Porter (1985), in the context of differentiation strategies, perceived value plays a key role in enhancing a company's competitiveness. Kanagal (2013) asserts that perceived value is central to differentiation, as consumers are more inclined to choose products that offer greater value than competitors' products. Similarly, Echchakoui (2018) suggests that companies can gain a competitive advantage by increasing customer-perceived value, achieved through strategies based on quality, innovation, and added value. For SMEs, differentiation is especially important due to limited resources compared to larger companies. Research by Raji & Zainal (2016) and Eggert et al. (2006), shows that increasing perceived value strengthens SMEs' competitive position through customer loyalty and long-term relationships. Based on this framework, the hypothesis is as follows:

H<sub>3</sub>: Green marketing has a positive impact on SME competitiveness.

Green marketing plays a key role in boosting SME competitiveness in a sustainability-driven business environment. The Resource-Based View (RBV) shows that companies can gain a competitive edge by using unique, valuable, and inimitable resources. These include green marketing strategies that emphasize sustainable production, eco-friendly materials, and environmentally focused marketing (Nuryakin & Maryati, 2022). Previous studies by Moravcikova et al. (2017) and Saputra & Saggaff (2024) show that green marketing boosts SMEs' competitiveness by improving product differentiation, increasing customer loyalty, and expanding market share. This provides a competitive edge in a sustainability-driven market.

The impact of green marketing on SME competitiveness is not only direct but also mediated by green perceived value (Zeithaml, 1988). Perceived Value Theory suggests that consumer perceptions of a product's value depend on more than price and functionality. They are also influenced by environmental concerns and social responsibility. Ghobbe & Nohekhan (2023) and Sun & Yoon (2022) confirm that environmentally conscious consumers assign greater value to products with eco-friendly attributes. Alam et al. (2023) found that consumers prefer products that reflect environmental responsibility, believing they offer long-term benefits. Reddy et al. (2023) showed that consumers with greater environmental awareness are more likely to purchase green products. Therefore, green marketing enhances consumer perceptions of a product's environmental value. This strengthens SMEs' competitiveness by driving preference for eco-friendly products. Based on the insights, the hypothesis is proposed as follows:

H<sub>4</sub>: Green perception value mediates the relationship between green marketing and SME's competitiveness.

In today's highly competitive business environment, where sustainability is a growing concern, green perceived value is increasingly recognized as a crucial factor in

enhancing SME competitiveness. According to Perceived Value Theory, the value that consumers attach to a product is derived from comparing the benefits they receive against the sacrifices they make (Zeithaml, 1988). Consumers consider factors such as quality, price, and additional benefits when deciding which products to purchase. Research by Lin (2022) shows that consumers are more likely to repurchase products with higher perceived value, including those with environmentally friendly attributes. The environmental concerns are now integral to perceived value, making them a key driver of consumer decisions, ultimately affecting SMEs' competitiveness in an environmentally conscious market. The Competitive Advantage Theory emphasizes that companies can achieve a competitive advantage through differentiation or cost leadership, with green perceived value being a key element in the differentiation process (Porter, 1985). Then, Kanagal (2013) and Echchakoui (2018) argue that increasing customer value through product innovation and environmental differentiation is essential for building competitive advantage. Eggert et al. (2006) state that Green innovation not only improves environmental performance but also enhances product quality, strengthening SMEs' competitive position. Therefore, the moderation hypothesis proposed in this study is:

H<sub>5</sub>: Green innovation strengthens the relationship between green perceived value and SME's competitiveness.

## RESEARCH METHOD

### Research Design:

This study employs an explanatory research approach to explore the relationships between key variables (Patel & Patel, 2019). The main objective is to examine the impact of green marketing on the competitiveness of small and medium-sized enterprises (SMEs). Specifically, the study treats green marketing as the independent variable, green perceived value as a mediator, and green innovation as a moderator. By analyzing these interactions, the

research aims to provide a deeper understanding of how green marketing affects SME competitiveness both directly and indirectly, through the mediation of perceived value and the moderation of green innovation, offering valuable insights into the role of sustainable practices in enhancing competitiveness.

### Population and Sample

The population of this study consists of small- and medium-sized enterprise (SME) owners in Serang Regency and City who have adopted green marketing practices in their business operations. These SMEs are selected on their engagement with environmentally sustainable marketing strategies, which serve as a key element of their business model. The population in this study is infinite. Although the population under investigation is infinite, to ensure the selected sample is truly representative, the initial questionnaire asks whether SMEs have implemented environmental awareness and sustainability in their operations. SMEs that do not meet this criterion will not be included in the sample.

Sample size follows Ferdinand (2014), recommending 5 to 10 times the number of indicators (16) in the research model, resulting in a target of 80 to 160 respondents. Initially, 130 respondents were selected. After data validation, 97 completed questionnaires met all criteria. inclusion in the final sample. Therefore, the population for this study consists of 97 respondents, who can be further analyzed.

### Data Types and Sources

This study employs a quantitative approach to test the proposed hypothesis

model, with four main constructs: green marketing as the independent variable, green perceived value as the mediating variable, green innovation as the moderating variable, and SME competitiveness as the dependent variable. The measurement of these four constructs is conducted using a ten-point Likert scale following the method used by Nuryakin and Maryati (2022). Number 1 represents "very poor" and 10 represents "excellent," This method is applied to gain a deeper understanding of the implementation of green marketing, green innovation, green perceived value, and the competitive advantage of SMEs. Data were collected through a questionnaire distributed to SME owners and managers in Banten Province who have integrated green marketing into their business activities. The research instrument consists of a structured questionnaire containing questions related to the four main variables. The design of this study aims to provide comprehensive insights into the factors that enhance SME competitiveness through green marketing strategies.

### Operational Variables

Table 1 below presents the operationalization of each variable utilized in this study, outlining how each variable is defined and measured based on established indicators and previous research. This operationalization provides a clear framework for analyzing the relationships between the variables in the context of green marketing and SMEs competitiveness.

**Table 1**  
**Operational Variables**

No	Variables	Indicators
1.	Green Marketing	a. Products free from harmful substances and produced using environmentally friendly methods. b. Pricing strategies that account for the costs associated with environmentally friendly production

No	Variables	Indicators
		c. Packaging and distribution methods that promote sustainability and minimize environmental impact d. Marketing efforts aimed at educating consumers about the environmental benefits of products and practices. Sources: (Su & Li, 2024), (X. Li et al., 2024)
2	Green Perceived Value:	a. The functional and environmental benefits of the product. b. Emotional satisfaction derived from using environmentally friendly products. c. Comfort and well-being derived from consuming environmentally friendly products. d. Long-term economic benefits, such as cost savings. Sources: (Majid et al., 2023) and (Tang et al., 2024)
3	Green Innovation:	a. The development of products using environmentally friendly materials. b. The use of environmentally friendly production techniques c. Internal policies that support sustainability. d. The development and use of new technologies that reduce environmental impact and improve sustainability. Sources: (Li et al., 2022) and (Ahmed et al., 2023)
4	SMEs Competitiveness:	a. The advantage of differentiating products through environmentally friendly attributes. b. Consumer recognition of the SME's commitment to environmental issues. c. The company's reputation related to sustainability d. Gained through high-quality, environmentally friendly products. Sources: (Zahara et al., 2024) and (Thomran et al., 2022).

Source: Developed by Author, 2025

### Data Analysis Method

#### Instrument Validity test

In this study, the validity test was performed using the Pearson Product Moment method, where the calculated r value was compared with the r table value. The degrees of freedom (df) were determined using the formula  $n-2$  (where n represents the sample size), with a significance level of 5%. The r table value was derived from the df calculation and the 0.05 significance level. If the calculated r value exceeds the r table value and indicates a positive correlation, the instrument is deemed valid. For the reliability test, Cronbach's alpha was used to measure the consistency of the instrument in evaluating a variable. An instrument is considered reliable if the Cronbach's alpha coefficient is above 0.60. If

the Cronbach's alpha value is  $\geq 0.60$ , the data is considered reliable; if  $\leq 0.60$ , the data is considered unreliable.

#### Statistics Method

The data analysis method used in this study integrates Partial Least Squares (PLS) with Structural Equation Modelling (SEM). The combination effectively merges factor analysis and path analysis, allowing for a robust exploration of the relationships between variables in the research model. PLS is particularly useful in estimating models when data is not normally distributed or when dealing with small sample sizes. The evaluation of the research model relies on assessing the goodness-of-fit, where indicators with an outer loading value greater than 0.7 are

considered to explain the model effectively (Suárez, 2021). Although higher loading values are preferred, values around 0.5 may still be acceptable depending on the specific conditions, provided that the measurement model meets other validity criteria (Rasoolimanesh & Ali, 2018), (Adepoju & Adeniji, 2020).

Next, validity and reliability were tested using Cronbach's Alpha, Composite Reliability, and Rho\_A, with a minimum threshold of 0.7 (Shmueli et al., 2019). After confirming validity and reliability, the study proceeded to assess the Average Variance Extracted (AVE). A variable with an AVE of at least 0.5 satisfies the discriminant validity criterion

(Henseler et al., 2015). Finally, hypothesis testing was conducted using the T-test, with hypotheses accepted if the p-value was below 5%.

## ANALYSIS AND DISCUSSION

### Instrument Validity Test

Based on the results presented in Table 2, the recalculated r values for each indicator of Green Marketing, Green Perceived Value, Green Innovation, and SME's Competitiveness exceed the r-table value of 0.2632. These findings suggest that all indicators exhibit a valid correlation, confirming that these indicators are appropriate and reliable for use as research instruments.

**Table 2**  
**Validity Test**

Variables	Indicator	Recalculate (r)	Rtable	Sig.	Description
Green Marketing	Green Product	0.813	0.2632	000	Valid
	Green Price	0.691	0.2632	000	Valid
	Green Distribution	0.710	0.2632	000	Valid
	Green Promotion	0.820	0.2632	000	Valid
Green Perceived Value	Functional Value	0.755	0.2632	000	Valid
	Social Value	0.685	0.2632	000	Valid
	Emotional Value	0.712	0.2632	000	Valid
	Financial Value	0.766	0.2632	000	Valid
Green Innovation	Green Product Innovation	0.702	0.2632	000	Valid
	Green Process Innovation	0.726	0.2632	000	Valid
	Green Managerial Innovation	0.791	0.2632	000	Valid
	Product Differentiation	0.799	0.2632	000	Valid
SME's Competitiveness	Respect and Recognition	0.768	0.2632	000	Valid
	Business Reputation	0.720	0.2632	000	Valid
	Competitive Advantage	0.775	0.2632	000	Valid

Source: Smart PLS 4.0, 2025

### Instrument Reliability Test

Based on the data in Table 3, the Cronbach's Alpha ( $\alpha$ ) values for each variable—Green Marketing, Green Perceived Value, Green Innovation, and SME Competitiveness—are all above the acceptable threshold of 0.60. Specifically, Green Marketing has a Cronbach's Alpha of 0.75, Green Perceived Value is 0.72, Green Innovation is

0.78, and SMEs Competitiveness is 0.80. These values indicate that the indicators for each variable are reliable and consistently measure their respective constructs. As all Cronbach's Alpha values exceed the minimum reliability threshold, it can be concluded that the questionnaire indicators provide dependable and consistent results.

**Table 3**  
**Reliability Test**

Variable	Cronbach's Alpha	Reliability Standards	Description
Green Marketing	0.75	0.60	Reliable
Green Perceived Value	0.72	0.60	Reliable
Green Innovation	0.78	0.60	Reliable
SME's Competitiveness	0.80	0.60	Reliable

Source: Smart PLS 4.0, 2025

**Reliability Test: Cronbach's Alpha, Composite Reliability, and Rho\_A**

Based on the results presented in Table 4, the reliability tests show that the variables Green Marketing, Green Innovation, and SME Competitiveness meet the established validity and reliability criteria. This is confirmed by the Cronbach's Alpha, Rho\_A, and Composite Reliability values, all of which exceed 0.7, indicating that these variables consistently measure their intended constructs and are reliable for use in this study. However, the Green Perceived Value variable does not fully meet the expected reliability criteria. While its Composite Reliability value is above 0.7, both

its Cronbach's Alpha and Rho\_A values are below 0.7, suggesting inconsistency in its measurement. Nevertheless, since the Composite Reliability value exceeds 0.7, the variable can still be considered reliable. As noted by Rasoolimanesh & Ali (2018) and Adepoju & Adeniji (2020), a variable may still be accepted even despite some inconsistencies, Green Perceived Value remains valid for use in this study if it doesn't meet all reliability criteria, provided it meets other validity criteria. Therefore, despite some inconsistencies, Green Perceived Value remains valid for use in this study.

**Table 4**  
**Reliability and Validity of Constructs**

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extract
SMEs Competitiveness	0,713	0,714	0,822	0,537
Green Innovation	0,671	0,732	0,803	0,512
Green Marketing	0,835	0,877	0,887	0,664
Green Percieved Value	0,505	0,509	0,728	0,502

Source: Smart PLS 4.0, 2025

**Convergent Validity**

Based on Table 4, the Average Variance Extracted (AVE) results show that all constructs in this model meet the criteria for convergent validity, with AVE values exceeding 0.5. SME Competitiveness (0.537) and Green Innovation (0.512) demonstrate good validity, while Green Marketing (0.664) has a very good AVE value. Green Perceived Value, with an AVE of 0.502, meets the minimum threshold of 0.5. Overall, these results confirm that the constructs are reliable

for measuring the variance of the intended indicators.

**Discriminant Validity**

Discriminant validity was assessed using two methods to ensure that constructs are distinct and can be differentiated. The Fornell-Larcker Criterion compares the AVE of each construct with its correlations to others, ensuring that the AVE exceeds squared correlations. The Cross Loadings method checks that each indicator loads higher on its own construct than on others. The results in

Table 6 show that, compared to cross-loadings on other constructs, the outer loadings for each indicator are consistently higher, demonstrating their relevance in measuring the intended

latent variable. These findings confirm that the model exhibits adequate discriminant validity with clearly distinguishable constructs and effective indicators.

**Table 6**  
Cross Loadings

	SMEs Competitiveness	Green Innovation	Green Marketing	Green Percieved Value
Green Product	0,193	0,133	0,877	0,052
Green Price	0,124	0,100	0,759	0,267
Green Distribution	0,084	0,110	0,758	0,267
Green Promotion	0,075	0,160	0,788	0,214
Functional Value	0,581	0,050	0,202	0,698
Social Value	0,458	0,027	0,162	0,638
Emotional Value	0,452	0,144	0,228	0,590
Financial Value	0,440	0,211	0,188	0,605
Green Product Innovation	0,737	0,164	0,084	0,612
Green Process Innovation	0,753	0,239	0,083	0,522
Green Managerial Innovation	0,718	0,152	0,157	0,562
Product Differentiation	0,722	0,126	0,152	0,553
Respect and Recognition	0,156	0,723	0,173	0,139
Business Reputation	0,150	0,573	-0,001	0,128
Competitive Advantage	0,131	0,643	0,048	-0,032
Green Product	0,232	0,885	0,181	0,187

Source: Smart PLS 4.0, 2025

Another technique is the Fornell-Larcker criterion; based on the results in Table 7, all constructs in this model meet the discriminant validity criteria. The square root of AVE for Competitiveness (0.712), Green Innovation (0.715), Green Marketing (0.815), and Green Perceived Value (0.709) is greater than the correlations between constructs, such as the correlation between Competitiveness and Green Perceived Value (0.708), Green Innovation and Green Marketing (0.154), and Green Perceived Value and Green Marketing (0.107). Each construct is clearly distinguishable, with little overlap, suggesting that the model demonstrates good discriminant validity and can be relied upon for further analysis. The

Fornell-Larcker criterion scores exceed the Average Variance Extracted (AVE) values (see Table 8), confirming that each variable in the model meets the discriminant validity criteria. The square root of the AVE for Competitiveness (0.712) is greater than its AVE value (0.537), Green Innovation (0.715) exceeds its AVE (0.512), Green Marketing (0.815) surpasses its AVE (0.664), and Green Perceived Value (0.709) is higher than its AVE (0.502). These results demonstrate that each construct is sufficiently distinct, ensuring strong discriminant validity and supporting the model's reliability for further analysis.

**Table 7**  
Fornell-Larcker Criterion

	Competitiveness	Green Innovation	Green Marketing	Green Percieved Value
Competitiveness	<b>0,712</b>			
Green Innovation	0,241	<b>0,715</b>		

	Competitiveness	Green Innovation	Green Marketing	Green Percieved Value
Green Marketing	0,160	0,154	<b>0,815</b>	
Green Percieved Value	0,708	0,154	0,107	<b>0,709</b>

Source: Smart PLS 4.0, 2025

**Table 8**  
Comparison of Fornell-Larcker Criterion with Average Variance Extracted (AVE)

Variable	Fornell-Larcker Criterion	AVE
Competitiveness	0,712	0,537
Green Innovation	0,715	0,512
Green Marketing	0,815	0,664
Green Percieved Value	0,709	0,502

Source: Smart PLS 4.0, 2025

### Hypothesis Testing

The Fornell-Larcker criterion scores exceed the Average Variance Extracted (AVE) values (see Table 8). This confirms that each variable in the model meets the criteria for discriminant validity. The square root of the AVE for Competitiveness (0.712) is greater than its AVE value (0.537). Green Innovation (0.715) exceeds its AVE (0.512). Green Marketing (0.815) surpasses its AVE (0.664). Green Perceived Value (0.709) is higher than its AVE (0.502). These findings show that the constructs are sufficiently distinct from one another. This ensures strong discriminant validity. The results confirm the model is reliable for further analysis. Each construct is clearly differentiated, supporting the robustness of the measurement model in

representing the relationships among the study's variables.

Additionally, Hypothesis H<sub>4</sub> examined the indirect path from Green Marketing to Competitiveness via Green Perceived Value. This path was significant (P = 0.008), indicating that Green Perceived Value mediates the relationship. Hypothesis H<sub>5</sub> tested the moderating effect of Green Innovation on Competitiveness. It showed a significant moderating effect (P = 0.001), suggesting that Green Innovation strengthens the relationship between Green Perceived Value and Competitiveness. Overall, this study's findings emphasize that Green Marketing and Green Perceived Value play significant roles in enhancing competitiveness. Green Innovation also provides an important moderating effect.

**Table 9**  
Structural Path Analysis

Hypotesis	Path	Path coefficient	t-statistics	P value
H <sub>1</sub>	Green Marketing→Competitiveness	0,155	1,560	0,119
H <sub>2</sub>	Green Marketing→Green Percieved Vakue	0,307	2,778	0,006
H <sub>3</sub>	Green Percieved Vakue →Competitiveness	0,772	15,003	0,000
H <sub>4</sub>	Green Marketing→Green Percieved Vakue →Competitiveness	0,237	2,667	0,008
H <sub>5</sub>	Moderating effect Green Innovation→Competitiveness	0,219	3,504	0,001

Source: Smart PLS 4.0, 2025

## Discussion

### The effect of Green Marketing on SME competitiveness.

The main finding of this study is that Green Marketing has a positive, though not statistically significant, and give impact on SME competitiveness. The limited significance may result from several factors. Green Marketing provides value as a differentiation strategy, external constraints—such as limited financial resources, low consumer awareness in some markets, and implementation challenges on a small scale—may dilute its effectiveness. Moravcikova et al. (2017) indicate that eco-friendly marketing can boost competitiveness by including environmental awareness in strategic marketing. However, Saputra and Saggaff (2024) find that Green Marketing's effects are insufficient to substantially improve SMEs competitiveness amid these external challenges.

The finding is reinforced by the Resource-Based View (RBV) that businesses with unique, environmentally friendly products and strong reputations can gain a competitive advantage. However, SMEs may struggle to fully leverage Green Marketing due to external constraints, such as limited resources and low market awareness (Nuryakin & Maryati, 2022). While, Bestari & Butarbutar (2021) and Mendrofa (2024) add that although eco-friendly marketing can increase consumer loyalty, external constraints limit its broader effect on SME competitiveness. Thus, Green Marketing has ability to improve competitiveness that is moderated by external factors, explaining the lack of statistical significance in this study.

### The effect of Green Marketing on Green Perceived Value

This study shows that Green Marketing positively influences consumers' perception of green value. The more effective the eco-friendly marketing techniques, the higher the perceived value consumers assign to the product, aligning with Perceived Value Theory (Zeithaml, 1988). In this theory, consumer interest in a product arises from a

comparison between the perceived value and the actual value of the product. The study further reveals that Green Marketing enhances green perceived value through four dimensions: functional, emotional, social, and financial. Environmentally friendly products are considered safer, of higher quality, and as long-term economic investments (Ghobbe & Nohekhan, 2023).

The findings align with research by Sun & Yoon (2022). The consumers are willing to pay more for products to gain a competitive advantage. This aligns with Perceived Value Theory that consumers derive the value of a product by comparing the benefits they receive with the sacrifices they make (Zeithaml, 1988). When making purchasing decisions, consumers assess factors such as quality, price, and additional benefits, which leads them to choose products they perceive to have high value. Lin (2022) argue that consumers are more likely to purchase products with high perceived value, including aspects such as quality, price affordability, and environmental concerns.

The perceived value now includes environmental and social concerns alongside functionality and price. Ghobbe & Nohekhan (2023) note that a product's value today is shaped not just by functional or pricing attributes but by its environmental impact. This change in consumer perception reflects a trend where environmental footprint increasingly influences purchasing decisions and aligns with global sustainability concerns.

Additionally, research by Alam et al. (2023) demonstrates that products that prioritize environmental and social responsibility are more appealing to consumers. These products are perceived as offering long-term benefits for society and the environment, further reinforcing the notion that consumers today are more conscious of the broader implications of their purchasing decisions. This highlights the growing significance of environmental considerations in shaping consumer behavior and the perceived value of products in the market.

### **The effect of Green Perceived Value on SME competitiveness.**

This study reveals that Green Perceived Value has a positive impact on SME competitiveness. When consumers perceive eco-friendly products as more valuable, SMEs can create differentiation. The results also support Competitive Advantage Theory that companies can achieve a competitive edge through differentiation strategies (Porter, 1985). According to Kanagal (2013) and Echchakoui (2018), the perceived value plays a crucial role in differentiation, as consumers tend to prefer products that offer higher value compared to those of competitors. For SMEs, differentiation strategies are vital, particularly due to their limited resources when competing with larger firms. This is especially relevant in the context of emerging markets, where consumers are increasingly concerned about sustainability and the environmental impact of products.

Research by Raji & Zainal (2016) shows that perceived value is positively related to a firm's competitiveness, which reinforces the idea that SMEs can leverage their eco-friendly practices to stand out. Additionally, studies by Khalifa (2004) and Eggert et al. (2006) demonstrate that enhancing perceived value through green marketing can improve consumer loyalty and foster long-term relationships, which are essential for sustained competitive advantage of SMEs in environmentally-conscious markets.

This study's findings underline the importance of green perceived value as a tool for SMEs to strengthen their market position. While perceived value is universally crucial for competitiveness, its application in green marketing takes on added significance as consumers place more value on environmental sustainability. However, SMEs may face challenges such as resource limitations and market penetration, making the careful implementation of green marketing strategies even more critical for their success.

### **Mediation Green Perceived Value on the relationship between green marketing and SME's competitiveness.**

This study confirms that Green Perceived Value mediates the relationship between Green Marketing and SME competitiveness. The more effectively Green Marketing is implemented, the higher the green value perceived by consumers, which ultimately enhances SME competitiveness. These findings support the Resource-Based View (RBV), which posits that eco-friendly marketing can provide a competitive advantage by leveraging unique, sustainable to improved consumer satisfaction and the perceived value of green products, ultimately boosting SME competitiveness. Therefore, green innovation acts as a moderating factor that strengthens the impact of green perceived value on SME competitiveness, especially amid the rising demand for eco-friendly products.

Green Marketing plays a crucial role in enhancing SME competitiveness in markets increasingly focused on environmental issues. The RBV framework explains that unique resources, such as eco-friendly marketing and green innovation, can provide a sustainable competitive edge. Previous studies show that Green Marketing improves product differentiation, fosters customer loyalty, and enhances market share, all of which strengthen SME competitiveness, (Moravcikova et al., 2017), (Saputra & Saggaff, 2024). Moreover, green perceived value plays a critical role in boosting consumer preference for eco-friendly products, particularly as environmental concerns continue to influence purchasing decisions globally. This highlights the importance of SMEs adopting green marketing strategies, as it enables them to align with growing consumer expectations and benefit from long-term competitive advantages. However, challenges such as resource limitations and market awareness may hinder the full realization of these benefits for SMEs, especially in emerging markets.

### **Moderation Effect Green innovation on the relationship between green perceived value and SME's competitiveness.**

This study shows that Green Innovation strengthens the relationship between Green Perceived Value and SME competitiveness. Green Innovation, which includes product, process, managerial, and eco-friendly marketing innovations, enhances the positive impact of green perceived value on competitiveness. This finding aligns with studies by Wang & Liu (2022) and Rodrigues & Franco (2023), which emphasize the role of green innovation in increasing consumer awareness and the competitiveness of eco-friendly products.

This relationship is particularly relevant in the context of an increasingly environmentally conscious market. As consumers become more aware of environmental issues, green perceived value is recognized as a crucial driver in enhancing SME competitiveness. According to Perceived Value Theory, consumer purchasing decisions are influenced by the perceived benefits relative to the sacrifices made, including environmental benefits Zeithaml (1988). Research by Lin (2022), highlights that consumers are more likely to choose products that offer high perceived value, which includes aspects such as quality, price, and environmental sustainability.

This underscores the importance of integrating green innovation into SMEs' strategies, as it not only improves product quality but also strengthens their competitive positions. Green innovation enables SMEs to stand out in a crowded marketplace, equipping them to meet growing consumer demand for eco-friendly products while enhancing brand image and consumer loyalty. Furthermore, green innovation aligns with Competitive Advantage Theory (Porter, 1985). The differentiation through unique products and practices, such as eco-friendly innovations, can provide a sustainable competitive advantage. However, SMEs may face challenges in implementing green innovation due to limited resources, market

penetration issues, or consumer skepticism. These factors may affect the extent to which green innovation can fully enhance SME competitiveness. Thus, while green innovation plays a critical role, its effectiveness depends on SMEs' ability to overcome these external barriers.

### **CONCLUSION AND SUGGESTIONS**

The study reveals that green marketing can enhance SME competitiveness. But its impact is indirect, mediated by green perceived value. The positive consumer perception of eco-friendly products plays a crucial role in boosting SME competitiveness. SMEs that successfully integrate green marketing strategies with green innovation, such as offering eco-friendly products, setting prices that reflect sustainability, and using environmentally responsible packaging, are better positioned to leverage these benefits. Therefore, for green marketing to effectively enhance competitiveness, this strategy must be combined with innovation that strengthens the perceived value of eco-friendly products.

In terms of implications, the study emphasizes that stakeholders should focus on raising environmental awareness through clear communication and customer education. Investment in eco-friendly technologies and sustainable innovation is essential for improving operational efficiency and building consumer trust. Policymakers should support SMEs by providing financial incentives, green technology subsidies, and easier access to financing. Additionally, stricter green product certification standards could enhance consumer confidence and expand market access.

As for recommendations, future research should explore different sectors to generalize the findings and consider external factors, such as government regulations and global market trends. This study's focus on SMEs in Serang limits its generalizability to other regions in Indonesia or different industries. Additionally, future studies could adopt qualitative or mixed-methods approaches to gain a more comprehensive understanding of the

motivations and challenges SMEs face in adopting green marketing. Finally, considering external factors such as government policies and digital technology adoption would provide a more holistic understanding of the dynamics of sustainable business practices.

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