

Green Marketing for Millennial Consumer Purchasing Decisions Through Brand Perception

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ABSTRACT

There is a lack of public awareness regarding the purchase of eco-friendly products. Understanding pro-environmental attitudes and purchasing behaviours related to green marketing is crucial for shaping brand perception and consumer decisions. Therefore, this study aims to analyse the impact of green marketing on brand perception and purchasing decisions, the impact of brand perception on purchasing decisions, and the role of brand perception as a mediating variable. The research employs a quantitative causal approach. The sample consisted of 350 millennial consumers selected via purposive sampling. Data were collected over four months using an online questionnaire with a 1-to-5 point Likert scale. Data analysis utilized SEM-PLS, involving evaluations of both the outer and inner models. The questionnaire was validated as reliable, with loading factor values of 0.79-0.87, Cronbach's Alpha of 0.918-0.927, and Composite Reliability of 0.932-0.941. R^2 values of 0.468 for brand perception and 0.602 for purchasing decisions indicate that the model falls within the moderate-to-strong category. The results demonstrate that green marketing has a positive and significant effect on brand perception ($\beta = 0.684$; $t = 13.221$; $p < 0.001$) and purchasing decisions ($\beta = 0.372$; $t = 6.145$; $p < 0.001$), while brand perception also has a positive and significant effect on purchasing decisions ($\beta = 0.491$; $t = 7.842$; $p < 0.001$). Furthermore, brand perception was found to mediate the impact of green marketing on purchasing decisions ($\beta = 0.336$; $t = 6.589$; $p < 0.001$). This mediation is classified as partial, given that both direct and indirect effects were significant. In conclusion, the effectiveness of green marketing is determined by strategic implementation and the ability to shape a credible brand perception. The implication is that companies need to integrate eco-friendly innovation, transparent communication, product quality, and brand reputation strengthening to enhance consumer trust.

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1. INTRODUCTION

Environmental problems are escalating, impacting climate change, pollution, and the exploitation of natural resources (Elmadani et al., 2024). Companies can boost product sales by cultivating a Brand Perception as environmentally conscious organizations (Kumar et al., 2025). This strategy aims not only to boost sales but also to project a Brand Perception of a company that cares about the environment (Agarwal et al., 2025). Millennials are a consumer group with a higher level of environmental awareness compared to previous generations (Verma et al., 2025). Green marketing is expected to have a positive impact on the perceptions of the millennial generation regarding decision-making (Maduwinarti et al., 2025).

In marketing, eco-friendly products can be distributed sustainably. This can increase purchase intention among millennial consumers (Dwivedi et al., 2025). Green marketing strategies can enhance brand quality perception and customer loyalty, thereby strengthening the company's competitive position in the global market (Garg et al., 2025). However, a new challenge has emerged in the implementation of eco-friendly marketing. Many companies claim their products are environmentally friendly when in reality they are not, thereby fostering consumer distrust (Cherono et al., 2025). Data shows that more than 50% of global consumers do not trust sustainability claims made by companies regarding eco-friendly products, and 40% consider such eco-friendly claims to be misleading (Suvarna et al., 2026). There is a gap between consumer attitudes and behaviour regarding eco-friendly products; this is reflected in the low level of purchases of such products.

In Indonesia, environmental issues such as plastic pollution, deforestation, and climate change are increasing (Mukwarami & Poll, 2024). This problem has encouraged companies to start implementing green marketing as a business strategy. It is hoped that green marketing will influence people's purchasing decisions, especially the millennial generation (Verma et al., 2025). With a green marketing strategy, it not only influences consumer perceptions but also directly influences people's behavioural beliefs (Chotisarn & Phuthong, 2025). Many consumers are still sceptical about the authenticity of green product claims, thus affecting their purchasing

decisions. In addition, price is also a major obstacle because environmentally friendly products generally have higher prices than conventional products (Li & Xiong, 2025). This is influenced by economic factors, consumption habits, and a lack of education about the benefits of green products.

There is a clear theory regarding the relationship between green marketing, brand perception, and purchase decisions. The Theory of Planned Behaviour explains that consumer intentions and behaviours are influenced by attitudes, subjective norms, and perceptions (Nguyen et al., 2025). Green marketing is viewed in terms of attitudes toward eco-friendly products and perceptions of environmentally conscious brands, both of which influence the intentions and decisions of millennial consumers. Signalling theory posits that companies transmit signals to consumers through product attributes, marketing communications, and Brand Perception (Asa & Nautwima, 2026). Green marketing serves as a signal of a company's environmental responsibility, thereby shaping brand perception. If this signal is perceived as credible, consumers form a positive perception of the brand, increasing the likelihood of purchase. Meanwhile, Brand Equity theory posits that brand perception is a component of brand equity, which also encompasses brand awareness, brand associations, perceived quality, and loyalty (Trinh et al., 2025). Meanwhile, regarding purchasing behaviour, the Consumer Decision-Making Process model explains that consumers go through the stages of need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour (Tan et al., 2025).

While green marketing influences Brand Perception, it does not directly influence purchasing decisions (Kesa., 2025). Other studies have shown that brand perception influences purchasing decisions, but do not identify green marketing as a primary contributing factor. Environmental awareness significantly contributes to the intention to purchase environmentally friendly products (Tanzares et al., 2024). However, previous approaches emphasized individual psychological factors without linking them to corporate marketing strategies. There is a gap between attitude and behaviour: while 60-70% of millennial consumers express concern for the environment, only 30-40% consistently purchase eco-friendly products (Amiri et al., 2024). This suggests that brand perception alone is insufficient to drive purchasing decisions without the support of an effective marketing strategy.

The novelty of this study lies in the conceptual model developed to integrate green marketing, brand perception, and purchase decisions into a single causal framework for millennial consumers. This differs from previous studies that examined only the direct impact of green marketing on consumer intentions or decisions in general. This differs from previous studies that examined only the direct impact of green marketing on the intentions or decisions of consumers in general (Klabi, 2025). Previous researchers also positioned brand perception solely as an independent variable (Halibas et al., 2025).

The hypothesis of this study is: H1: Green marketing has a positive effect on brand perception among millennial consumers, H2: Green marketing has a positive effect on millennial consumer purchasing decisions, H3: Brand perception has a positive influence on millennial consumers' purchasing decisions, and H4: Brand perception mediates the effect of green marketing on purchasing decisions.

This study emphasizes the comprehensive nature of the green marketing and brand perception constructs. Green marketing is measured through the four dimensions of the 4P framework: green product, green price, green distribution, and green promotion. Meanwhile, brand perception is measured based on four dimensions: brand awareness, brand association, perceived quality, and brand trust. By incorporating these four dimensions for each construct, the study presents a more thorough and holistic picture of how green marketing strategies shape consumer perceptions of a brand and ultimately influence their purchasing decisions. In this study, brand perception serves as a mediating mechanism explaining how green marketing strategies translate into purchasing decisions. Thus, the study's contribution lies in integrating the full dimensions of green marketing and brand perception into a single causal framework, particularly within the context of millennial consumers and sustainable marketing.

Based on the issues outlined above, the objectives of this study are to: 1) analyse the influence of green marketing on millennial consumers' brand perceptions; 2) analyse the influence of green marketing on millennial consumers' purchasing decisions; 3) analyse the influence of the brand on millennial consumers' purchasing decisions; and 4) analyse the role of the brand as a mediating variable in the relationship between green marketing and purchasing decisions.

2. METHOD

The research method used is a quantitative causal approach (Ong et al., 2025). This approach aims to examine the causal relationships and influences between the variables studied. The causal approach was chosen because it produces objective, measurable data that can be analysed statistically. The causal approach examines how green marketing, as an independent variable, influences brand perception and purchasing decisions, and how brand perception acts as a mediating variable in this relationship.

The study population consists of millennial consumers in Indonesia who possess experience with or knowledge of eco-friendly products. Respondents were limited to individuals who had purchased eco-friendly

products within a specific timeframe. The millennial group was selected because this consumer segment demonstrates a relatively high level of environmental awareness and serves as a primary target for green marketing strategies. The research sample comprised 350 respondents, a figure considered sufficiently representative for further statistical analysis. Purposive sampling was employed to select the sample based on specific criteria aligned with the research objectives; this method was chosen because not all members of the population possessed the characteristics required for the study. The established sample selection criteria included: 1) respondents aged 25–40 years (the millennial generation), 2) residence in Indonesia, 3) having purchased or at least being familiar with eco-friendly products, and 4) having access to marketing information via channels such as social media, advertisements, or environmental campaigns.

Data collection for this study was conducted using a questionnaire. Questionnaires were chosen due to their ability to reach a wide range of respondents quickly and efficiently, particularly millennial consumers, who are active users of digital technology when purchasing branded products. The questionnaire was structured based on the study's theories and variables: green marketing, brand perception, and purchase decisions. It was implemented via Google Forms to facilitate respondent participation and enable automated data management. The instrument employed closed-ended questions, requiring respondents to select from provided answers based on their level of agreement. The Google Forms-based questionnaire was distributed online through social media platforms (WhatsApp, Telegram) and email. Responses were measured using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with intermediate points representing "disagree," "neutral," and "agree." Data integrity was ensured by screening for and eliminating duplicate responses and incomplete entries, as well as identifying potentially problematic data. The instrument underwent a pilot test involving 150 participants to evaluate question clarity, validity, and reliability prior to widespread distribution. Test results indicated that all constructs met validity and reliability criteria, with factor loadings exceeding 0.70, and both Cronbach's Alpha and Composite Reliability values exceeding 0.70. The following are the instruments used in this study.

Table 1. Green Marketing Variable Indicators (X).

Variables.	Indicator	Statement Items
Green Marketing	Green Products	1. The product uses environmentally friendly materials.
		2. The product is recyclable.
		3. The product does not harm the environment.
		4. The product uses eco-friendly packaging.
		5. The product has environmental certification.
		6. The product is produced sustainably.
		7. The product reduces waste.
	Green Price	1. The price is in line with the environmental benefits.
		2. I am willing to pay more for green products.
		3. The price reflects environmentally friendly quality.
		4. The price of green products is still affordable.
		5. The price is in line with sustainable values.
		6. The product price is commensurate with its benefits.
		7. Price is not a major barrier.
	Green Promotion	1. Advertising emphasizes environmental awareness.
		2. Product information is clear and transparent.
		3. Promotions are not misleading (not greenwashing).
		4. Environmental campaigns attract attention.
		5. Information is easy to understand.
		6. Promotions raise environmental awareness.
		7. Promotional media are trustworthy.
	Green Place (Distribution)	1. Distribution considers environmental impact.
		2. Products are easy to find.
		3. Distribution channels are environmentally friendly.
		4. Shipping is efficient and minimizes emissions.
		5. Products are available in environmentally friendly stores.
		6. Sales locations are easily accessible.
		7. The distribution system supports sustainability.

Table 2. Instruments and Indicators of the Brand Perception Variable (Z)

Variable	Indicator	Statement Items
Brand Perception	Brand Awareness	1. I am familiar with the green product brand.
		2. The brand is easy to remember.
		3. I see the brand often.
		4. The brand is widely known.
		5. I can recognize the brand logo.
		6. I am familiar with the products offered.
		7. The brand comes to mind when I think of green products.
	Brand Association	1. The brand is associated with being environmentally friendly.
		2. The brand has a positive image.
		3. The brand cares about the environment.

		4. The brand supports sustainability.
		5. The brand is different from competitors.
		6. The brand has social values.
		7. The brand reflects a green lifestyle.
		1. The product is high quality.
		2. The product is durable.
		3. The product is reliable.
	Perceived Quality	4. The quality meets expectations.
		5. The product has high standards.
		6. The product provides real benefits.
		7. The product is better than other alternatives.
		1. I trust the brand.
		2. The brand is honest in its environmental claims.
		3. The brand is reliable.
	Brand Trust	4. The brand has a good reputation.
		5. I am confident in the product's quality.
		6. The brand does not mislead consumers.
		7. I feel safe using the product.

Table 3. Items and Indicators of the Purchasing Decision Variable (Y).

Variables.	Indicators.	Item Statement.
		1. I need eco-friendly products.
		2. I am aware of the importance of green products.
		3. I feel the need to switch to green products.
	Need Recognition.	4. The environment influences my needs.
		5. I consider environmental impact.
		6. I care about environmental issues.
		7. I feel green products are important.
		1. I search for information about green products.
		2. I read product reviews.
		3. I compare brands.
	Information Search.	4. I search for information on social media.
		5. I consider recommendations from others.
		6. I look for pricing information.
		7. I understand product advantages.
		1. I compare products.
		2. I assess product advantages.
		3. I consider price and quality.
	Alternative Evaluation.	4. I consider environmental aspects.
		5. I evaluate product benefits.
		6. I compare products with conventional products.
		7. I choose the best product.
		1. I decide to buy a green product.
		2. I choose a specific brand.
		3. I am confident in my decision.
	Purchase Decision.	4. I buy the product consciously.
		5. I have no doubts about buying the product.
		6. I prefer green products.
		7. I buy according to my needs.
		1. I am satisfied with the product.
		2. I will buy again.
		3. I recommend it to others.
	Post-Purchase Behaviour.	4. I feel my decision was right.
		5. I am loyal to the brand.
		6. I share positive experiences.
		7. I still use the product

Data analysis technique using Partial Least Squares Structural Equation Modeling (SEM-PLS) to simultaneously test the relationships between variables (Hair & Alamer, 2022). The analysis is conducted in two main stages: evaluation of the outer model and evaluation of the inner model. In the outer model evaluation stage, the quality of the research instrument was tested through data collection techniques in the form of an online questionnaire survey with a Likert scale of 1-5. This test aims to ensure that each indicator or item is able to reflect the latent variable validly and reliably. Convergent validity was assessed through loading factor values >0.70 and Average Variance Extracted (AVE) >0.50 . Discriminant validity was tested using the Fornell-Larcker criteria and cross-loading to ensure that each construct was adequate. Furthermore, construct reliability was tested using Cronbach's Alpha and Composite Reliability values >0.70 . The inner model evaluation stage was conducted to test the relationship between the latent variables in the research model. This test includes the coefficient of determination (R^2) value to measure the ability of the independent variable to explain the dependent variable, as well as the path coefficient value to determine the direction and strength of the influence between variables. The

significance test was conducted through a bootstrapping procedure with the criteria of t-statistic >1.96 and p-value <0.05 . In addition, effect size (f^2) and predictive relevance (Q^2) analyses were conducted to assess the contribution of each variable in the model. Mediation testing was conducted to determine the role of brand perception in mediating the relationship between green marketing and purchasing decisions. This analysis was conducted by examining the indirect effect through bootstrapping. If the indirect effect is significant, it can be concluded that the mediating variable plays a role in the research model.

3. RESULT AND DISCUSSION

Result

The results of the data analysis were conducted to test validity and reliability before examining the relationships between variables in the study. The data obtained were processed using statistical methods, producing empirical findings that can answer the research questions.

Table 4. Validity Test of Green Marketing Variables

Variables.	Indicator	Statement Items	Loading	Information
Green Marketing	Green Products	The product uses environmentally friendly materials.	0.821	Valid
		The product is recyclable.	0.835	Valid
		The product does not harm the environment.	0.812	Valid
		The product uses eco-friendly packaging.	0.844	Valid
		The product has environmental certification.	0.829	Valid
		The product is produced sustainably.	0.818	Valid
		The product reduces waste.	0.806	Valid
	Green Price	The price is in line with the environmental benefits.	0.792	Valid
		I am willing to pay more for green products.	0.805	Valid
		The price reflects environmentally friendly quality.	0.821	Valid
		The price of green products is still affordable.	0.788	Valid
		The price is in line with sustainable values.	0.807	Valid
		The product price is commensurate with its benefits.	0.814	Valid
		Price is not a major barrier.	0.799	Valid
	Green Promotion	Advertising emphasizes environmental awareness.	0.848	Valid
		Product information is clear and transparent.	0.856	Valid
		Promotions are not misleading (not greenwashing).	0.832	Valid
		Environmental campaigns attract attention.	0.841	Valid
		Information is easy to understand.	0.837	Valid
		Promotions raise environmental awareness.	0.845	Valid
		Promotional media are trustworthy.	0.830	Valid
	Green Place (Distribution)	Distribution considers environmental impact.	0.818	Valid
		Products are easy to find.	0.826	Valid
		Distribution channels are environmentally friendly.	0.809	Valid
		Shipping is efficient and minimizes emissions.	0.822	Valid
		Products are available in environmentally friendly stores.	0.835	Valid
		Sales locations are easily accessible.	0.814	Valid
		The distribution system supports sustainability.	0.820	Valid

Table 4 presents the validity test results for the Green Marketing variable. All statement items regarding green products, green price, green promotion, and green place have outer loading values above 0.70 (valid).

Table 5. Validity Test of Brand Perception Variables

Variable	Indicator	Statement Items	Loading	Information
Brand Perception	Brand Awareness	I am familiar with the green product brand.	0.842	Valid
		The brand is easy to remember.	0.857	Valid
		I often see that brand, and it is widely known.	0.839	Valid
		I can recognize the brand logo.	0.848	Valid
		I am familiar with the products offered.	0.833	Valid
		The brand comes to mind when I think of green products.	0.845	Valid
		The brand is associated with being environmentally friendly.	0.851	Valid
	Brand Association	The brand has a positive image.	0.836	Valid
		The brand cares about the environment.	0.849	Valid
		The brand supports sustainability.	0.842	Valid
		The brand is different from competitors.	0.854	Valid
		The brand has social values.	0.831	Valid
		The brand reflects a green lifestyle.	0.846	Valid
		The product is high quality.	0.838	Valid
	Perceived Quality	The product is durable.	0.852	Valid
		The product is reliable.	0.861	Valid
		The quality meets expectations.	0.844	Valid
		The product has high standards.	0.856	Valid
		The product provides real benefits.	0.839	Valid
		The product is better than other alternatives.	0.847	Valid

Brand Trust	I trust the brand.	0.851	Valid
	The brand is honest in its environmental claims.	0.865	Valid
	The brand is reliable.	0.872	Valid
	The brand has a good reputation.	0.858	Valid
	I am confident in the product's quality.	0.863	Valid
	The brand does not mislead consumers.	0.849	Valid
	I feel safe using the product.	0.855	Valid

Table 5 presents the validity test results for the Brand Perception variable. All indicators have loading factor values above 0.70; therefore, all statement items are considered valid.

Table 6. Validity Test of Purchase Decision Variables

Variables.	Indicators.	Item Statement.	Loading	Information
Purchase Decisions	Need Recognition.	I need eco-friendly products.	0.821	Valid
		I am aware of the importance of green products.	0.834	Valid
		I feel the need to switch to green products.	0.829	Valid
		The environment influences my needs.	0.842	Valid
		I consider environmental impact.	0.818	Valid
		I care about environmental issues.	0.830	Valid
		I feel green products are important.	0.826	Valid
		I search for information about green products.	0.839	Valid
		I read product reviews.	0.845	Valid
		I compare brands.	0.852	Valid
	Information Search.	I search for information on social media.	0.834	Valid
		I consider recommendations from others.	0.841	Valid
		I look for pricing information.	0.828	Valid
		I understand product advantages.	0.847	Valid
		I compare products.	0.848	Valid
		I assess product advantages.	0.855	Valid
		I consider price and quality.	0.842	Valid
		I consider environmental aspects.	0.851	Valid
		I evaluate product benefits.	0.836	Valid
		I compare products with conventional products.	0.844	Valid
	Alternative Evaluation.	I choose the best product.	0.849	Valid
		I decide to buy a green product.	0.861	Valid
		I choose a specific brand.	0.868	Valid
		I am confident in my decision.	0.852	Valid
		I buy the product consciously.	0.857	Valid
		I have no doubts about buying the product.	0.846	Valid
		I prefer green products.	0.854	Valid
		I buy according to my needs.	0.860	Valid
		I am satisfied with the product.	0.858	Valid
		I will buy again.	0.865	Valid
	Post-Purchase Behaviour.	I recommend it to others.	0.851	Valid
		I feel my decision was right.	0.860	Valid
		I am loyal to the brand.	0.847	Valid
		I share positive experiences.	0.853	Valid
		I still use the product	0.859	Valid

Table 6 shows the validity test results for each instrument within the Purchase Decision variable; the instruments are valid, with loadings > 0.70.

Table 7. Respondent Characteristics (N = 350)

Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	164	46.86
	Female	186	53.14
Total		350	100.00
Age	25–29 years old	128	36.57
	30–34 years old	119	34.00
	35–40 years old	103	29.43
Total		350	100.00
Highest level of education	High school/equivalent	42	12.00
	Diploma	38	10.86
	Bachelor's degree (S1)	219	62.57
	Postgraduate degree (S2/S3)	51	14.57
Total		350	100.00
Occupation	Private sector employee	139	39.71
	Civil servant/SOE employee	48	13.71
	Entrepreneur	67	19.14
	Professional	42	12.00
	Other	54	15.43
Total	Category	350	100.00

Table 7, regarding respondent characteristics, shows that women constitute the majority at 53.14%, while men account for 46.86%. The largest age group is the 25–29 range, representing 36.57% of the total. The majority of respondents hold a bachelor's degree (62.57%) and work as private-sector employees (39.71%). This composition indicates that the respondents are predominantly young consumers with bachelor's degrees who work in the private sector.

Table 8. Descriptive Statistics of Constructs

Construct	N	Minimum	Maximum	Mean	SD
Green Marketing	350	2.29	5.00	4.08	0.51
Brand Perception	350	2.43	5.00	4.15	0.49
Purchase Decision	350	2.29	5.00	4.11	0.50

Table 8, presenting descriptive statistics, shows that all constructs have relatively high mean values. Brand Perception recorded the highest mean at 4.15 (SD = 0.49), followed by Purchase Decision at 4.11 (SD = 0.50) and Green Marketing at 4.08 (SD = 0.51). These results indicate that respondents' perceptions regarding all research variables tend to be positive.

Table 9. Average Variance Extracted (AVE)

Variables	AVE	Description
Green Marketing	0.667	Valid
Brand Perception	0.712	Valid
Purchase Decision	0.701	Valid

Table 9 shows the Average Variance Extracted (AVE) values for all research variables. Green Marketing has an AVE of 0.667, Brand Perception 0.712, and Purchase Decision 0.701. All AVE values are above the minimum threshold of 0.50, thus meeting the convergent validity requirement. Each construct is able to explain more than 50% of the variance of its constituent indicators. Brand Perception has the highest AVE, indicating that this construct is most strongly represented by its indicators.

Table 10. Fornell-Larcker Discriminant Validity

Variables	Green Marketing	Brand Perception	Purchase Decision
Green Marketing	0.817		
Brand Perception	0.684	0.844	
Purchase Decision	0.701	0.735	0.837

Table 10 presents the results of the discriminant validity test using the Fornell-Larcker method. The square roots of the AVE values on the diagonal for each variable Green Marketing (0.817), Brand Perception (0.844), and Purchase Decision (0.837) are greater than the correlations between the other variables. The relationships between the variables remain sufficiently strong, particularly between Brand Perception and Purchase Decision (0.735). Thus, the model's discriminant validity has been satisfactorily established.

Table 11. Construction Reliability

Variables	Cronbach's Alpha	Composite Reliability	Description
Green Marketing	0.918	0.932	Reliable
Brand Perception	0.927	0.941	Reliable
Purchase Decision	0.921	0.936	Reliable

Table 11 presents the results of construct reliability testing using Cronbach's Alpha and Composite Reliability. The Green Marketing variable recorded values of 0.918 and 0.932; Brand Perception, 0.927 and 0.941; and Purchase Decision, 0.921 and 0.936. Brand Perception exhibited the highest level of reliability, indicating consistency in respondent answers regarding the indicators for this variable.

Table 12. Common Method Bias Test

Test Method	Criteria	Value	Conclusion
Full Collinearity VIF – Green Marketing	< 3.30	1,742	No indication of CMB
Full Collinearity VIF – Brand Perception	< 3.30	2,184	No indication of CMB
Full Collinearity VIF – Purchase Decision	< 3.30	2,267	No indication of CMB
Harman's Single Factor	< 50%	38.64%	No indication of CMB

Table 12, presenting the results of the common method bias test, shows that all Full Collinearity VIF values fall below the 3.30 threshold, ranging from 1.742 to 2.267. Furthermore, the Harman's Single Factor result of 38.64% is also below 50%. The data show no indication of common method bias that could compromise the validity of the research findings.

Table 13. Variance Inflation Factor (VIF) Value

Predictor Relationship → Endogenous Construct	VIF	Description
Green Marketing → Brand Perception	1,000	No multicollinearity
Green Marketing → Purchase Decision	2,174	No multicollinearity
Brand Perception → Purchase Decision	2,174	No multicollinearity

Table 13, presenting the VIF test results, shows a value of 1.000 for the relationship between Green Marketing and Brand Perception, and a value of 2.174 for the relationship of Green Marketing and Brand Perception with Purchase Decision. All values fall within an acceptable range; therefore, no multicollinearity issues were found among the predictor variables in the study's structural model.

Table 14. Heterotrait–Monotrait Ratio (HTMT)

Construct	Green Marketing	Brand Perception	Purchase Decision
Green Marketing	-	0.781	0.748
Brand Perception	0.781	-	0.842
Purchase Decision	0.748	0.842	-
HTMT Threshold	< 0.90	< 0.90	< 0.90
Conclusion	Valid	Valid	Valid

Table 14, presenting the HTMT test results, shows values of 0.781 between Green Marketing and Brand Perception, 0.748 between Green Marketing and Purchase Decision, and 0.842 between Brand Perception and Purchase Decision. All these values fall below the 0.90 threshold. The three constructs demonstrate good discriminant validity and can be empirically distinguished within the research model.

Table 15. Coefficient of Determination (R^2) R-Square

Variables	R^2	Category
Brand Perception	0.468	Moderate
Purchase Decision	0.602	Strong

Table 15 presents the coefficients of determination (R^2). The Brand Perception variable has an R^2 value of 0.468, which is classified as moderate, meaning that 46.8% of the variation in Brand Perception can be explained by Green Marketing. Purchase Decision has an R^2 value of 0.602, which is classified as strong; this indicates that 60.2% of the variation in purchase decisions is explained by Green Marketing and Brand Perception combined.

Table 16. Path Coefficient (Hypothesis Test) Bootstrapping Results

Hypothesis	Relationship	Coefficient	t-stat	p-value	Decision
H1	Green Marketing → Brand Perception	0.684	13.221	0.000	Accepted
H2	Green Marketing → Purchase Decision	0.372	6.145	0.000	Accepted
H3	Brand Perception → Purchase Decision	0.491	7.842	0.000	Accepted

Table 16 presents the path coefficients and hypothesis testing results obtained via the bootstrapping method. H1: Green Marketing has a significant positive effect on Brand Perception, with a coefficient of 0.684 and a p-value of 0.000. H2: Green Marketing has a significant positive effect on Purchase Decision, with a coefficient of 0.372. H3: Brand Perception has a significant positive effect on Purchase Decision, with a coefficient of 0.491. All t-statistics exceed 1.96, and all p-values are below 0.05; therefore, all hypotheses are accepted.

Table 17. Effect Size (f^2)

Connection	f^2	Category
Green Marketing → Brand Perception	0.472	Large
Green Marketing → Purchase Decision	0.205	Medium
Brand Perception → Purchase Decision	0.298	Medium

Table 17 presents the effect size (f^2) values. The effect of Green Marketing on Brand Perception is 0.472, categorized as large; green marketing strategy is a key factor in shaping consumer perception of the brand. The effect of Green Marketing on Purchase Decision is 0.205, falling into the medium category, indicating that green marketing plays a significant role in directly driving purchase decisions. Meanwhile, the effect of Brand Perception on Purchase Decision is 0.298, also in the medium category.

Table 18. Predictive Relevance (Q^2)

Variables	Q^2	Description
Brand Perception	0.329	Good
Purchase Decision	0.411	Good

Table 18 presents the predictive relevance (Q^2) values. Brand Perception has a Q^2 value of 0.329, while Purchase Decision has a Q^2 value of 0.411. Both values are greater than zero, indicating that the model possesses good predictive relevance. The model is capable of adequately predicting the data for the endogenous variables. The higher value for Purchase Decision indicates that the model's predictive capability regarding purchase decisions is stronger than that regarding brand perception.

Table 19. Indirect Effect Mediation Test (Bootstrapping)

Hypothesis	Connection	Coefficient	t-stat	p-value	Decision
H4	Green Marketing → Brand Perception → Purchase Decision	0.336	6.589	0.000	Accepted

Table 19 presents the results of the mediation test for the indirect effect. Green Marketing influences Purchase Decisions through Brand Perception, with a coefficient of 0.336, a t-statistic of 6.589, and a p-value of 0.000. Since the p-value is less than 0.05, the indirect effect is deemed significant, and the hypothesis is accepted. This indicates that Brand Perception acts as a mediator between Green Marketing and purchase decisions.

Table 20. Hypothesis Conclusion

Hypothesis	Connection	Results
H1	Green Marketing → Brand Perception	Accepted
H2	Green Marketing → Purchase Decision	Accepted
H3	Brand Perception → Purchase Decision	Accepted
H4	Brand perception mediation (Green Marketing → Brand Perception → Purchase Decision)	Accepted

Table 20 presents the results of the research hypothesis testing. H1 = Green Marketing influences Brand Perception (accepted). H2 = Green Marketing influences Purchase Decision (accepted). H3 = Brand Perception influences Purchase Decision (accepted). H4 = Brand Perception mediates the relationship between Green Marketing and Purchase Decision (accepted). Green Marketing influences purchase decisions not only directly but also by enhancing consumer perception of the brand.

Discussion

Green Marketing and Brand Perception Among Millennial Consumers

Eco-friendly marketing has been shown to positively influence brand perception among millennial consumers. The more consistently a company implements sustainability-based marketing strategies, the more positive consumer perception of the brand becomes. Eco-friendly marketing is not merely understood as promotional activity highlighting environmental issues; rather, it is a strategic approach encompassing eco-friendly product design, pricing policies that reflect sustainability values, transparent communication, and ecologically responsible distribution. For millennials, a brand is not just a commercial identity but a reflection of the values they hold dear. This generation tends to be more attuned to social and environmental issues and more selective in choosing brands that align with their personal beliefs. Eco-friendly marketing serves as a vital tool for building positive brand associations. Brands that actively demonstrate environmental concern are more readily perceived as modern, responsible, and trustworthy. Conversely, brands that ignore sustainability issues risk being viewed as out of step with the expectations of today's consumers.

These findings align with signalling Theory, which explains that companies send signals to the market through policies and strategic communications (Baskoro et al., 2024). Green marketing, the use of environmental certifications, sustainable packaging, and educational campaigns, serves as signals of a company's quality and moral responsibility. When these signals are perceived as credible, consumers will form a more favourable brand perception. Conversely, if consumers perceive the message as manipulative or merely image-building, trust in the brand will decline. Furthermore, these research findings align with Brand Equity Theory, which places brand awareness, brand associations, perceived quality, and trust as key elements of brand value (Zheng et al., 2025). Green marketing strategies have been shown to simultaneously strengthen all of these dimensions. These findings are also consistent with previous research that states that corporate sustainability practices contribute significantly to Brand Perception and consumer loyalty (Hasan et al., 2025).

The Impact of Green Marketing on Millennial Consumer Purchase Decisions

Eco-friendly marketing positively influences the purchasing decisions of millennial consumers. Consumer behaviour indicates that product purchasing decisions are no longer determined solely by functional considerations such as price and quality, but also by the ethical, social, and ecological dimensions associated with the product. Millennial consumers tend to view purchasing decisions as a form of self-expression. Buying eco-friendly products is often seen as a contribution to environmental preservation and a more responsible lifestyle. When companies offer sustainable products and clearly communicate their environmental benefits, consumers become more motivated to make a purchase. Eco-friendly marketing serves as a persuasive mechanism that connects consumers' personal values with their product choices.

These findings align with the Theory of Planned Behaviour, which states that behaviour is influenced by attitudes, subjective norms, and perceived behavioural control (Batbay & Kahramanoğlu, 2024). Green marketing fosters positive attitudes toward products by providing information about environmental benefits. Furthermore, the trend of environmentally conscious consumption on social media is creating new social norms that encourage millennial consumers to choose eco-friendly products. These research findings also support the Consumer Decision-Making Process model, which describes consumers as progressing through the stages of need

recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour (Gupta et al., 2025). Green marketing strategies influence all these stages, especially the information search and alternative evaluation phases. The findings align with previous research that states that green products, green promotions, and green distribution influence purchase intentions and purchase decisions. However, this study strengthens the understanding that the effectiveness of green marketing lies not only in environmental messages, but also in the company's ability to translate these messages into tangible benefits for consumers.

Brand Perception and Millennial Consumer Purchase Decisions

A positive brand perception fosters consumer confidence in a product's ability to consistently meet their needs. An HTMT value of 0.842 between brand perception and purchase decision indicates a strong relationship between the two. This high value is understandable, given that both brand perception and purchase decisions involve cognitive evaluation processes on the part of the consumer. For environmentally conscious millennial consumers, a positive perception of a brand can shape beliefs regarding the brand's quality, credibility, and commitment to sustainability. When these attributes are perceived as relevant and aligned with the consumer's personal values, a positive brand perception tends to reinforce the conviction to choose and purchase the product.

This finding aligns with Brand Equity Theory, which states that brand strength is built through brand awareness, brand associations, perceived quality, and loyalty (Ebrahimzadeh et al., 2026). When consumers are familiar with a brand, have positive associations with it, and trust in the product's quality, the probability of purchase increases. In this study, brand perception serves as an evaluative mechanism that helps consumers simplify choices amidst numerous market alternatives. Brands serve as signals representing a company's reputation and consistency. A brand with a positive image will reduce the perception of purchase risk and increase consumers' sense of security. This study's findings align with previous research showing that brand trust, Brand Perception, and perceived quality are important predictors of purchasing decisions (Handoyo, 2024). This research strengthens the argument that, in the context of Indonesian millennial consumers, brand perception can be an even more decisive factor than simply a product's green attributes. Companies need to build a consistent brand through product quality, customer experience, transparent communication, and a tangible commitment to sustainability. Without a strong brand perception, the benefits of environmentally friendly products may not be enough to drive purchasing decisions.

The Role of Brand Perception as a Mediating Variable in the Relationship between Green Marketing and Purchase Decisions

Brand perception has been shown to act as a mediating variable in the relationship between green marketing and purchase decisions. The impact of green marketing on purchasing behavior is not always direct; it operates through psychological processes that shape consumer perceptions of the brand. Corporate sustainability strategies are more effective at driving purchases when they first strengthen brand perception and consumer trust. These findings indicate that consumers do not automatically purchase a product simply because a company claims to be environmentally friendly; rather, the brand must genuinely demonstrate high quality, honesty, and social responsibility.

These findings support the integration of Signalling Theory and Brand Equity Theory. Green marketing serves as an initial signal regarding a company's environmental commitment (Ong et al., 2025). However, this signal only produces behavioural impact when it is received, interpreted, and internalized by consumers as a positive brand value. Once brand perception is formed, consumers will be more confident in making purchase decisions due to a lower perceived level of risk. Furthermore, these results align with the Theory of Planned Behaviour. A positive brand perception will strengthen a positive attitude toward a product and increase purchase intention (Samoggia et al., 2025). For millennial consumers, this intention is strengthened when the brand is perceived as aligned with their personal identity and their sustainability values. This finding is consistent with previous research, which found that Brand Perception and brand trust mediate the influence of green marketing on purchase intention, loyalty, and purchasing decisions (Baltaci et al., 2024). However, this study provides a more comprehensive contribution by placing brand perception as a central mechanism in this relationship among Indonesian millennial consumers.

The implication is that companies cannot simply run green campaigns sporadically. Sustainability strategies must be integrated with brand management through consistent communication, maintained product quality, credible environmental certification, and positive customer experiences. Green marketing goes beyond promotional messages to become reputational capital that drives sustainable purchasing decisions.

The limitations of this study, the purposive sampling technique, limits the generalizability of the findings to a broader consumer population, as it only represents a segment of millennials with specific characteristics. The cross-sectional research design is unable to capture the dynamics of changes in consumer perceptions and behaviour longitudinally. Furthermore, other variables such as cultural factors, social norms, and environmental

literacy levels have not been integrated into the model, thus the potential complexity of the relationships between these variables remains unclear.

This study recommends adopting a longitudinal approach for future research to more dynamically capture changes in consumer behaviour. The use of probability sampling techniques is also crucial to enhance the external validity and generalizability of the findings. Integrating moderating variables such as trust in environmental certification, sustainability literacy, and digital social influence should be considered to enrich the analysis model. Future research could also combine quantitative and qualitative methods (mixed methods) to gain a more holistic understanding.

4. CONCLUSION

In conclusion, green marketing is a strategic determinant with a significant influence on the formation of brand perceptions and purchasing decisions among millennial consumers in Indonesia. The implementation of green marketing, manifested through the development of environmentally friendly products, pricing policies aligned with sustainability values, transparent marketing communications, and responsible distribution, has been proven to increase positive consumer evaluations of brands. Green marketing functions not only as a promotional tool but also as a mechanism for creating brand value relevant to modern consumer orientations. Millennial consumers have shown a tendency to choose products perceived as environmentally responsible; thus, the sustainability dimension has become a rational consideration in the consumption process. With the paradigm shift in market behaviour, purchasing decisions are no longer solely determined by functional utility but also by the inherent social and ecological benefits of the product. Meanwhile, brand perception has been shown to have a significant influence on purchasing decisions. Brands perceived as having high quality, a good reputation, strong credibility, and consistent sustainability values are more likely to be selected by consumers. Brand perception acts as a mediating variable in the relationship between green marketing and purchasing decisions. This means that the effectiveness of green marketing will increase when the strategy is first translated into positive brand perceptions in the minds of consumers. Thus, the influence of green marketing on purchasing behaviour is both direct and indirect through consumer psychological channels.

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