DRIVERS OF ONLINE SKINCARE PURCHASE DECISIONS AMONG YOUNG CONSUMERS IN SURABAYA

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Abstract

Background: Although environmental awareness is on the rise, the gap between attitudes and eco-friendly purchasing behavior remains a challenge in the online shopping ecosystem. In Surabaya, this issue is particularly relevant given the urgency of managing urban waste, including single-use plastic waste that can originate from various consumer product packaging, such as skincare products.
Purpose: This study aims to analyze the simultaneous and partial effects of Eco-Friendly Product Innovation, Eco-Friendly Brand Image, and Eco-Friendly Marketing on online purchasing decisions for skincare products among Generation Y and Z in Surabaya. The Stimulus-Organism-Response (S-O-R) framework was used as a conceptual lens to explain the relationships among the variables.
Design/methodology/approach: This explanatory quantitative study involved 203 active respondents in Surabaya selected through purposive sampling. Data were collected via an online questionnaire, while the quality of the instrument was tested through validity and reliability tests. Data were analyzed using multiple linear regression with the aid of SPSS version 26.
Findings/Results: The results of the study indicate that all variables simultaneously have a significant effect on purchasing decisions, with an R-squared value of 0.721. This means that these three variables account for 72.1% of the variation in purchasing decisions. Partially, Eco-Friendly Marketing is the most dominant predictor with a t-value of 19.144, followed by Eco-Friendly Product Innovation with a t-value of 4.618 and Eco-Friendly Brand Image with a t-value of 2.837. These findings indicate that the transparency of educational information in marketing plays a crucial role in influencing the purchasing decisions of young consumers in the digital market.
Conclusion: This study shows that eco-friendly marketing, product innovation, and eco-friendly brand image play a role in shaping young consumers' purchasing decisions when buying skincare products online. Companies are advised to enhance the transparency of sustainability information and maintain consistency in their eco-friendly claims to reduce consumer skepticism regarding greenwashing practices.
Originality/Value (State of the art): This study makes an empirical contribution to the study of eco-friendly consumer behavior in the context of online purchases of skincare products in Surabaya. The results of this study show that eco-friendly marketing, product innovation, and brand image can be important factors in understanding the purchasing decisions of young consumers in the local digital market.

Keywords: green brand image, green marketing, green product innovation, purchase decision

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INTRODUCTION

Changes in the consumption patterns of modern society are increasingly focused on more environmentally friendly products, in line with the growing interest in eco-friendly products in e-commerce. This phenomenon has been well documented in previous studies, which show that consumers often have positive attitudes toward eco-friendly products, but this is not always followed by actual purchasing decisions (Nguyen & Nguyen, 2021). Surabaya is one of Indonesia's major cities, with an average of approximately 2.3 million online shoppers (Alwatoni & others, 2018). This situation indicates that Surabaya is not only a large digital market but also a relevant context for analyzing consumer behavior regarding the adoption of eco-friendly products, particularly among Generation Z and Millennials.

This urgency is underscored by data from the Ministry of Environment and Forestry's SIPSN (2023), which shows that Surabaya's daily waste production exceeds 1,500 tons, with plastic waste dominating at the Benowo Landfill. This reflects the paradox of sustainable consumption, where increased individual awareness does not always directly correlate with environmentally friendly consumption behavior (White et al. 2019). Consumers of eco-friendly products play a crucial role in supporting the development of sustainable businesses (Armutcu et al. 2024). Currently, the development of green marketing concepts appears to be widespread, yet it remains challenging to convince customers to purchase eco-friendly products (Ahmed et al. 2023). This indicates a gap between the green marketing strategies implemented by companies and consumers' perceptions and trust in the sustainability claims made (Harahap & Amri, 2024). Consequently, many companies must consider environmental issues as part of their production and product design strategies (Delaney et al. 2022). In this context, the success of green marketing strategies is determined not only by companies' efforts to communicate sustainability values, but also by how consumers recognize and evaluate those values throughout the sustainability process. Consumers will assess product innovations, brand image, and marketing claims before making a purchase decision (Ercis & Cat, 2016). The skincare industry has experienced significant growth in Indonesia. Young consumers in Surabaya are increasingly enthusiastic about trying the latest skincare products (Boon et al. 2020). The skincare industry is a relevant sector in this context, given the high frequency of consumption and the use of product packaging that has the potential to cause significant environmental impacts. Skincare companies targeting Generations Y and Z need to implement eco-friendly product innovations for the sake of corporate and environmental sustainability (Shim et al. 2024). The selection of these groups is based on their characteristics as digital natives with high information literacy, making them more critical in evaluating the authenticity of companies' environmental claims to avoid greenwashing practices (Safeer et al. 2025). Purchasing decisions can be influenced by ethical considerations and perceptions of a company's environmental responsibility (Amoako et al. 2020). This aligns with the view that young consumers tend to conduct objective evaluations by considering the potential environmental impacts of the products they purchase before making a transaction (Samsudin & Hotimah, 2024).

Previous research has examined the impact of eco-friendly product innovations, eco-friendly brand image, and eco-friendly marketing separately on consumer purchasing decisions. However, the existing literature remains fragmented and has not provided a comprehensive understanding of the integrated relationships among these variables (Khan et al. 2021; Garcia-Salirrosas & Rondon-Eusebio, 2022). Furthermore, most previous studies were conducted on different populations and regions, such as Vietnam, Pakistan, Ghana, and Bangladesh, with consumer characteristics that do not fully represent market conditions in Indonesia (Sen, 2024; Tan et al. 2022). This indicates a population gap, particularly regarding Generation Y and Z consumers in metropolitan cities like Surabaya, who exhibit high levels of digital consumption. On the other hand, findings from previous studies have not shown consistent results (Ali, 2021; Nekmahmud & Fekete-Farkas, 2020), indicating an empirical gap. Furthermore, previous research has tended to use a partial approach, without simultaneous testing within a single analytical framework (Sen, 2024; Tan et al. 2022). This suggests there is room for further research. In this context, Generation Y and Z consumers constitute the dominant segment, characterized by high rates of digital technology adoption and increasing environmental awareness.

This study uses the Stimulus-Organism-Response (S-O-R) theory (Eroglu et al. 2003) as a conceptual framework. In marketing strategy, this model explains that consumer behavior is triggered by external stimuli (Stimulus), such as product innovations from companies. In this study, the S-O-R concept is used to understand how marketing stimuli and brand perceptions relate to purchase decisions. Consumer responses can be reflected in purchase decisions. Additionally, this study employs the consumer behavior theory (Engel et al. 1986). This theory asserts that purchase decisions are not instantaneous actions. Rather, such behavior is the result of a series of cognitive processes involving information processing, evaluation of various alternatives, and attitude formation before an individual makes a final decision (Pourazad et al. 2025). Furthermore, this study also draws upon the foundational concepts of green marketing Polonsky (1994). Polonsky (2008) defines green marketing as all activities designed to facilitate exchanges aimed at fulfilling human needs, provided that such activities minimize harmful impacts on the natural environment. Product innovation also serves as a crucial marketing stimulus (Sen, 2024). Eco-friendly Product Innovation refers to the development of products designed to minimize environmental impacts throughout their life cycle (L. Qiu et al. 2020). These three aspects are interrelated, where sustainable product innovation can strengthen brand image, while green marketing strategies serve to communicate these values to consumers, which ultimately influences purchasing decisions. Based on Polonsky's (1994) concept, green marketing acts as one form of a company's external stimulus in a marketing strategy that incorporates environmental considerations into the development of the products it produces.

This study aims to simultaneously analyze the influence of eco-friendly product innovation, eco-friendly brand image, and eco-friendly marketing on online purchasing decisions for skincare products among Generation Y and Z in Surabaya. In depth, this study evaluates how stimuli from green innovation and marketing strategies relate to the formation of brand image perceptions that can influence consumer considerations. This is crucial for understanding the dynamics of green purchasing decisions, where high environmental awareness is often not always followed by purchasing decisions due to a lack of trust in product sustainability claims. Therefore, this study is expected to provide empirical contributions to the fields of green marketing and consumer behavior, in line with Polonsky's (1994) concept regarding the responsible fulfillment of human needs toward the environment. Additionally, this study specifically contributes by presenting an analytical model that links eco-friendly product innovation, eco-friendly brand image, and eco-friendly marketing within a single analytical framework in the context of the skincare industry in the digital market in Surabaya.

METHODS

This study is a quantitative study using an explanatory approach (Huntington-Klein, 2021). This approach was chosen to align with the study's objectives of testing the formulated hypotheses and explaining the roles of the variables under investigation, as well as the relationship between independent and dependent variables (Hünermund & Louw, 2025). Additionally, the data source used in this study is primary data (Hamzani et al. 2023). This data was obtained directly from the original source through the distribution of questionnaires to respondents, specifically Generation Z and Generation Y individuals in the city of Surabaya, who were the target of this study (Siqeca et al. 2021). Thus, this approach is expected to produce an empirical analysis in uncovering the relationship between the variables studied in this research model.

This study collected data using a questionnaire distributed online via Google Forms (Jaiswal, 2024). Online distribution aimed to ensure the questionnaire was distributed evenly and reached more Generation Z and Generation Y individuals in the city of Surabaya (Doran et al. 2026). Additionally, the questionnaire response scale was designed using a 5-point Likert scale, where a score of 1 indicates "strongly disagree" and a score of 5 indicates "strongly agree" (Jebb et al. 2021). Thus, this instrument design allows for consistent and standardized measurement of respondents' perceptions. The population in this study consists of online skincare product consumers in Surabaya, and the exact number is not specifically known (Kim, 2022). Therefore, this study employs a non-probability sampling technique using a purposive sampling approach. The purposive sampling technique in this study limits the generalizability of the research results to a group of respondents with similar characteristics. Strict inclusion criteria established for respondents include: 1) Individuals belonging to Generation Y and Z, 2) Residing in the city of Surabaya, 3) Having previously

purchased skincare products online via e-commerce platforms, and 4) Possessing awareness of eco-friendly products. This study involved 203 respondents with a total of 16 research indicators. Given that the sample adequacy criterion is 5 to 10 times the number of indicators, the recommended minimum sample size ranges from 80 to 160 respondents (Hair et al. 2013). Thus, the sample size in this study has exceeded the minimum threshold and meets the requirements for regression analysis.

The operationalization of variables in this study employs the Stimulus-Organism-Response (S-O-R) framework as a conceptual lens to systematically categorize the factors influencing the purchasing decisions of young consumers in Surabaya. Table 1 shows that Green Product Innovation (X1) and Green Marketing (X3) are categorized as Stimulus (S) or external stimuli from the company, while Green Brand Image (X2) is positioned as Organism (O), representing the internal conditions of consumers' perceptions and beliefs regarding these stimuli. The final outcome of the interaction between these components is manifested through the Purchase Decision (Y) as a Response (R) or the consumer's actual action. Although grouped based on their theoretical roles in the S-O-R framework, all independent variables (X1, X2, and X3) were tested simultaneously and partially using multiple linear regression analysis to evaluate the direct contribution of each dimension to the purchase decision of eco-friendly skincare products.

This study employed inferential statistical analysis using SPSS version 26 to examine the influence of sustainability strategies on consumer behavior. The analysis began with the identification of study respondents and descriptive statistics (Lund, 2023), to describe the characteristics of the respondents, specifically Generation Y and Z in Surabaya, and to identify trends in perceptions through mean values and standard deviations. Additionally, the quality of the instrument was evaluated through validity and reliability tests. Validity testing was conducted to ensure that each indicator adequately represents the variable construct, using the criterion of r count > r table. Meanwhile, reliability was measured using Cronbach's Alpha coefficient with a threshold of >0.70, indicating an acceptable level of internal consistency in consumer behavior research (Shaheen et al. 2023). Furthermore, the data will be tested against classical assumptions to ensure the model meets the basic assumptions of regression analysis. Normality tests will be conducted using a normal P-P plot to ensure the residual distribution falls within acceptable limits. Furthermore, multicollinearity tests will be performed with a tolerance value > 0.10 and VIF < 10 to ensure there is no redundancy of information among the independent variables. Furthermore, a heteroscedasticity test using a scatter plot will be performed to ensure the stability of the residual variance across observations and to evaluate the data's compliance with the regression assumption (Ayanwale et al. 2022).

Multiple linear regression analysis was used to examine the effects of Green Product Innovation, Green Brand Image, and Green Marketing on online purchasing decisions for skincare products among Generation Z and Generation Y in Surabaya. This approach allows for the estimation of quantitative relationships and direct interpretation of each variable's contribution in explaining consumer behavior (Lundberg et al. 2021). Additionally, hypothesis testing was conducted using the t-test to evaluate the partial effects of each variable with a significance criterion of sig < 0.05 and a calculated t-value greater than the critical t-value, as well as the F-test to assess the model's validity simultaneously with a criterion of the calculated F-value > the critical F-value and sig < 0.05 (Zerakidze & Tsotniashvili, 2024). Additionally, the coefficient of determination was used to explain the proportion of variation in purchase decisions by analyzing the adjusted R^2 value that can be explained by the model, without disregarding conceptual relevance in the interpretation of results. Thus, the analysis results are expected not only to meet statistical validity but also to provide additional empirical insights into green marketing studies within the context of digital consumer behavior.

From a Stimulus-Organism-Response (S-O-R) perspective, eco-friendly product innovations can serve as stimuli that influence consumers' evaluations of a product. In the skincare industry on e-commerce platforms, Generation Y and Z have broad access to information, leading them to consider product characteristics more carefully before making a purchase (Agrawal, 2022). The use of skin-safe organic ingredients, recyclable packaging, and eco-friendly formulas can serve as product differentiators in the digital marketplace (Khan et al. 2021). Previous research indicates that eco-friendly product innovations are associated with consumers' purchasing decisions

regarding sustainable products (Srivastava & Mittal, 2026; Al Mamun et al. 2023; Awwad et al. 2026)

H1: Green Product Innovation has a positive and significant effect on online skincare Purchase Decision among Generation Y and Z in Surabaya.

Within the S-O-R framework, an eco-friendly brand image reflects consumers' perceptions and trust in a company's environmental commitment (Safeer & Liu, 2023). In an e-commerce ecosystem prone to information asymmetry and greenwashing, consumers tend to consider brand credibility before making a purchase decision (Song et al. 2023; Soltani & Ben Lazreg, 2026). Previous research indicates that eco-friendly brand image is associated with purchasing decisions and the intention to use sustainable products (Tan et al. 2022; Safeer et al. 2025)

H2: Brand Image has a positive and significant effect on online skincare Purchase Decision among Generation Y and Z in Surabaya.

Green marketing serves as an informational stimulus that can influence consumer preferences for sustainable products. For Generations Y and Z, who are active users of social media and e-commerce, information transparency, green advertising, and sustainability communication play a crucial role in the consumer information-seeking process (Engel et al. 1986; Amoako et al. 2020). Previous research indicates that eco-friendly marketing influences purchasing decisions regarding sustainable products (Sen, 2024). Furthermore, green marketing initiatives are also linked to efforts to bridge the gap between environmental knowledge and consumer purchasing behavior (Ali, 2021).

H3: Green Marketing has a positive and significant effect on online skincare Purchase Decision among Generation Y and Z in Surabaya.

From an S-O-R perspective, eco-friendly product innovation, eco-friendly brand image, and eco-friendly marketing are interrelated factors influencing consumer purchasing decisions. Generations Y and Z tend to consider product characteristics, marketing communications, and brand reputation simultaneously before making a purchase on digital platforms. Previous research has also shown that the integration of digital marketing strategies and sustainability is associated with eco-friendly consumption behavior (W. Qiu et al. 2026; Zafar et al. 2025; Jani et al. 2026).

H4: Green Product Innovation, Green Brand Image, and Green Marketing simultaneously have a positive and significant effect on online skincare Purchase Decision among Generation Y and Z in Surabaya.

Table 1. Operational definitions

Variable	Definition	Variable Indicators	Source
Green Product Innovation (X1)	Product development is designed to minimize environmental impact throughout its entire life cycle, including the use of more environmentally friendly materials and packaging.	Use of environmentally friendly materials Packaging that is recyclable Environmentally safe product formulas Product innovations that support sustainability	(Khan et al. 2021;Wang et al. 2021; Prentice et al. 2023)
Green Brand Image (X2)	Consumers' overall perceptions and impressions of a brand that demonstrates a commitment to environmental conservation.	Ecological Reputation Trust in a brand's environmental commitment. Brand sustainability commitment The benefits of eco-friendly imagery	(Chen, 2010;Tan et al. 2022; Safeer et al. 2025)
Green Marketing (X3)	Communication strategies and marketing activities that emphasize sustainability and environmental concern to influence consumers.	Environmental information transparency Sustainability-based promotions Eco-friendly marketing communication Clear communication of environmental claims	(Tsai et al. 2020; Amoako et al. 2020;Ali, 2021)
Purchase Decision (Y)	The consumer's decision to select and purchase an eco-friendly product following an evaluation process.	Confidence in choosing a product Preference for environmentally friendly products Decision to purchase a product Considerations before making a transaction	(Nekmahmud & Fekete-Farkas, 2020;Garcia-Salirrosas & Rondon-Eusebio, 2022; Kumar & Kotler, 2024)

In Figure 1, the conceptual framework of this study is based on the integration of the S-O-R model proposed by (Eroglu et al. 2003) and consumer behavior theory (Engel et al. 1986), to analyze the Purchase Decision (Y) of eco-friendly skincare products. Green Product Innovation (X1) and Green Marketing (X3) are positioned as external stimuli that trigger cognitive and affective processes in consumers. Furthermore, Green Brand Image (X2) acts as the organism phase, representing consumers' internal perceptions of a brand's environmental commitment. This entire internal evaluation process is then expected to generate a tangible response in the form of purchasing decisions among Generation Y and Z in Surabaya. Thus, this framework systematically illustrates how a company's sustainability strategies are transformed into economic actions by digital consumers.

RESULTS

This study utilized primary data from 203 respondents who are active online consumers of skincare products from Generation Y and Z in the Surabaya area. As shown in Table 2, the majority of respondents were female, totaling 133 individuals (65.52%), while males numbered 70 (34.48%). All respondents were in the 17–35 age range, representing Generation Y and Z in Surabaya. These characteristics indicate that the study was dominated by young consumers who actively use digital platforms to purchase skincare products.

Based on the results of the descriptive analysis in Table 3, all research variables have relatively high mean values, with actual scores ranging from 12 to 20. The Green Brand Image variable (X2) had the highest mean value of 17.08 (SD = 2.295), followed by Environmentally Friendly Product Innovation (X1) at 17.01 (SD = 2.264). Meanwhile, the Purchase Decision (Y) and Green Marketing (X3) variables had mean values of 16.81 (SD = 2.452) and 16.58 (SD = 2.511), respectively. These results indicate that respondents tended to give positive ratings to the variables under study.

Table 4. The validity test results show that all indicators have a *r*-count value greater than the *r*-table value (>0.138), so all items are deemed valid. In addition, the Cronbach's Alpha values for all variables are above 0.60, indicating that the research instrument has an acceptable level of reliability.

In Figure 2, the results of the normality test using a Normal P-P Plot show that the data points are scattered around the diagonal line, indicating that the data are normally distributed. Additionally, the results of the multicollinearity test in Table 5 show that all independent variables have Tolerance values above 0.10 and VIF values below 10, indicating no evidence of multicollinearity. Furthermore, the results of the heteroscedasticity test in Figure 3 show a random distribution of points that do not form a specific pattern, indicating that the regression model does not exhibit heteroscedasticity. Thus, the regression model in this study has met the basic assumptions of multiple linear regression analysis.

Table 2. Demographic characteristics of respondents by gender and age of consumers in Surabaya

Gender	Age	Frequency	Percentage (%)
Male	17-35	70	34.48
Female	17-35	133	65.52
Total		203	100.00%

Table 3. Results of the descriptive analysis of green product innovation (X1), green brand image (X2), green marketing (X3), and purchase decision (Y) of skincare products among Gen Y & Z in Surabaya

Variable	N	Min	Max	Mean	Standard Deviation
Green Product Innovation (X1)	203	12	20	17.01	2.264
Green Brand Image (X2)	203	12	20	17.08	2.295
Green Marketing (X3)	203	12	20	16.58	2.511
Purchase Decision (Y)	203	12	20	16.81	2.452
Valid n	203				

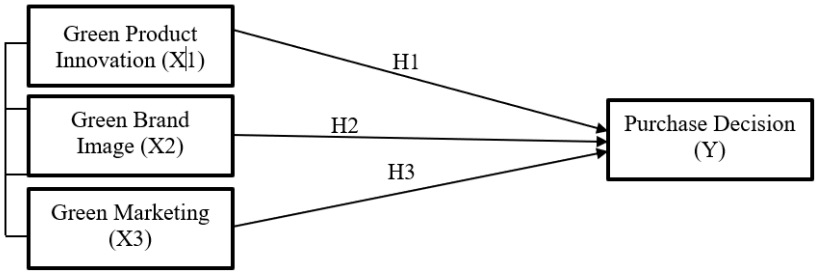

Figure 1. A Conceptual framework for the influence of green product innovation, green brand image, and green marketing on purchase decisions

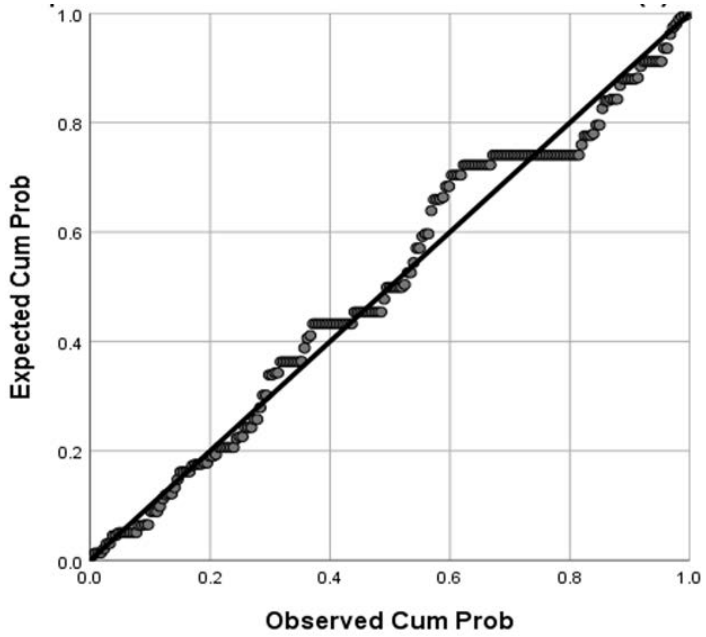

Figure 2. Normal P-P Plot of Residuals for Regression Normality Test for Purchase Decision (Y) of Skincare Products among Gen Y & Z in Surabaya

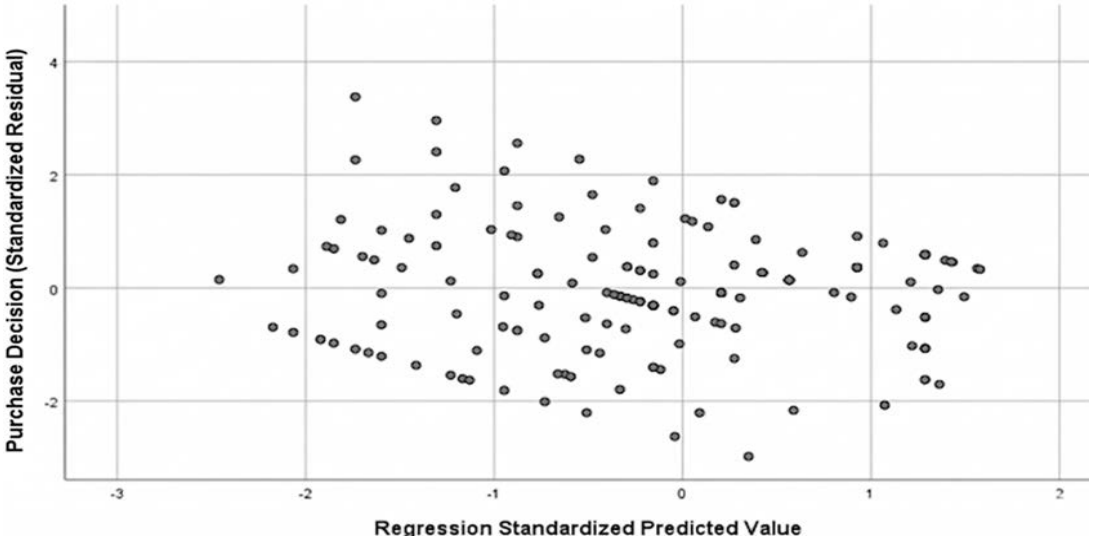

Figure 3. Scatterplot of Heteroscedasticity Test for Purchase Decision (Y) of Skincare Products among Gen Y & Z in Surabaya

Table 4. Results of the validity and construct reliability tests for the research variables

Variable	Indicator	r-value	Cronbach Alpha
Green Product Innovation (X1)	X1.1	0.741	0.776
	X1.2	0.804	
	X1.3	0.820	
	X1.4	0.747	
Green Brand Image (X2)	X2.1	0.813	0.768
	X2.2	0.802	
	X2.3	0.797	
	X2.4	0.752	
Green Marketing (X3)	X3.1	0.827	0.783
	X3.2	0.852	
	X3.3	0.832	
	X3.4	0.806	
Purchase Decision (Y)	Y.1	0.841	0.782
	Y.2	0.842	
	Y.3	0.816	
	Y.4	0.815	

Note: An item is considered valid if r-value > r-table (0.138). A construct is considered reliable if Cronbach's Alpha > 0.60.

Table 5. Results of Multicollinearity test of green product innovation (X1), green brand image (X2), and green marketing (X3) variables of skincare products among Gen Y & Z in Surabaya

	Tolerance	VIF
Green Product Innovation (X1)	0.617	1.620
Green Brand Image (X2)	0.561	1.783
Green Marketing (X3)	0.782	1.279

a. Dependent Variable: Purchase Decision (Y)

In this study, multiple linear regression analysis was used to examine the effects of Green Product Innovation (X1), Brand Image (X2), and Green Marketing (X3) on Purchase Decision (Y). Based on Table 6, the regression equation obtained is: Y = 4.512 + 1.059X1 + 0.458X2 + 2.691X3 + e**.** All independent variables show a positive direction of influence on purchase decision. The Green Marketing variable (X3) has the largest coefficient value of 2.691, followed by Environmentally Friendly Product Innovation (X1) at 1.059 and Environmentally Friendly Brand Image (X2) at 0.458. The validity of the research model was tested using the F-test. Based on Table 7, the significance value of 0.000 is smaller than the significance level of 0.05, with a calculated F-value of 175.220. These results indicate that the variables Environmentally Friendly Product Innovation (X1), Environmentally Friendly Brand Image (X2), and Environmentally Friendly Marketing (X3) simultaneously have a significant effect on purchasing decisions.

To test the partial effect of each independent variable on the purchase decision, a t-test was conducted by comparing the calculated *t*-value with the critical *t*-value (Zerakidze & Tsotniashvili, 2024). Based on Table 6, Green Product Innovation (X1) showed a statistical *t*-value of 4.618 with a significance level of 0.000, while Green Brand Image (X2) obtained a statistical *t*-value of 2.837 with a significance level of 0.000. Additionally, Green Marketing (X3) has the highest statistical *t*-value of 19.144 with a significance level of 0.000. All statistical *t*-values are greater than the critical *t*-value (1.972), so all three independent variables are found to have a positive and significant effect on purchase decision of online skincare products among Generation Y and Z in Surabaya.

The coefficient of determination is used to measure the model's ability to explain the variation in purchasing decisions. Based on Table 8, the Adjusted R-Square value of 0.721 indicates that 72.1% of the variation in online skincare product purchase decisions among Generation Y and Z in Surabaya can be explained by the

variables Green Product Innovation (X1), Green Brand Image (X2), and Green Marketing (X3). Meanwhile, the remaining 27.9% is influenced by other factors outside the research model.

The effect of Green Product Innovation on Purchase Decision

The test results show that Green Product Innovation (X1) has a positive and significant effect on the Purchase Decision of consumers in Surabaya to buy skincare products online, as evidenced by the *t*-value and *p*-value meeting the criteria (4.618 and 0.000). This indicates that young consumers tend to pay attention to companies' efforts to replace chemical ingredients with organic ones, as well as the use of eco-friendly and biodegradable packaging. These findings support the research (Delaney et al. 2022), which confirms that eco-friendly products are no longer viewed merely as expensive items, but rather as products with essential benefits that are highly needed. Furthermore, these results align with studies by Khan et al. (2021) and Awwad et al. (2026), which state that the ability to innovate in the environmental sector is key to competing in today's market. In other words, creating eco-friendly products has now become a relevant strategy for companies to attract the attention of a generation of consumers who care about environmental sustainability. This indicates that product innovation not only serves as a means of competitive differentiation but is also linked to the increasing consideration of young consumers when purchasing eco-friendly skincare products in a competitive market.

Table 6. Results of multiple linear regression analysis and the t-test (partial) for the effect of green product innovation (X1), green brand image (X2), and green marketing (X3) on purchase decision (Y) of skincare products in Surabaya

Coefficients				
Variable	B	Beta	t-value	p-value
(Constant)	4.512		6.775	0.000
Green Product Innovation (X1)	1.059	0.310	4.618	0.000
Green Brand Image (X2)	0.458	0.141	2.837	0.000
Green Marketing (X3)	2.691	0.804	19.144	0.000

Note: Dependent Variable: Purchase Decision (Y); Significance level at 0.05

Table 7. Results of the F-test (simultaneous) for the effect of green product innovation (X1), green brand image (X2), and green marketing (X3) on purchase decision (Y) of skincare products among Gen Y & Z in Surabaya

Anova			
	df	F-value	Sig-value
Regression	3	175.220	0.000
Residual	199		
Total	202		

Note: Dependent Variable: Purchase Decision (Y). Significance level at 0.05.

Table 8. Results of the coefficient of determination test for the effect of green product innovation (X1), green brand image (X2), and green marketing (X3) on purchase decision (Y) of Skincare Products in Surabaya

Model	R Square	Adjusted R-Square
1	0.725	0.721

a. Predictors: (Constant). Green Product Innovation (X1). Green Brand Image (X2). Green Marketing (X3)
b. Dependent Variable: Purchase Decision (Y)

The Role of Green Brand Image in Purchase Decision

Green Brand Image (X2) was found to have a positive and significant influence on online consumers' purchase decision, with a *t*-value (2.837 > 1.972) and a *p*-value (0.00 < 0.05). In the context of online shopping, brands with a good eco-friendly reputation can help consumers evaluate a product's credibility before making a purchase. This aligns with research by Sen (2024) and Tan et al. (2022), which states that brand image serves as a bridge that transforms advertising promotions into actual purchasing actions. This aligns with the perspective of (Safeer et al. 2025), who state that a company's genuine commitment to social and environmental issues makes its brand more resilient in the face of business competition. In cities like Surabaya, cosmetic brands that consistently project a pro-environmental image tend to be more easily recognized by consumers, thereby increasing purchase consideration in online transactions. Thus, a green brand image can be understood as an intangible asset capable of strengthening consumer trust in the digital shopping environment with minimal physical interaction.

The Dominance of Green Marketing in Influencing Purchase Decisions

The most striking finding of this study is that Green Marketing (X3) is the strongest driving factor in purchase decisions, with a statistical *t*-value (19.144 > 1.972) and a *p*-value of (0.00 < 0.05). This significant difference indicates that environmental concern alone may not be sufficient to drive consumers to make actual purchases without educational messages through advertisements (Nekmahmud & Fekete-Farkas, 2020). This aligns with the S-O-R Theory (Eroglu et al. 2003), in which eco-friendly promotions are positioned as stimuli related to consumers' evaluation of environmental information (Zafar et al. 2025). These findings indicate that transparent explanations regarding environmental labels can help reduce young consumers' skepticism toward greenwashing practices or misleading green advertising (Tran, 2026). The dominance of this variable also suggests that the effectiveness of marketing strategies is influenced not only by the intensity of promotions but also by the quality of information and the transparency of the messages conveyed to consumers. Therefore, companies need to consider transparent educational campaigns to enhance consumers' consideration when purchasing eco-friendly products. In other words, a company's success in managing sustainability-based marketing communication is closely linked to consumers' consideration during the purchasing process. Comprehensively, the explanatory power of these three variables in describing the dynamics of purchasing decisions is confirmed by an adjusted R-Square value of 0.725. This indicates that the combination of Green Product Innovation, Green Brand Image, and Green Marketing has a strong correlation with Purchasing Decision for skincare products among Generation Y and Z in Surabaya.

Managerial Implications

This study strengthens the literature on green consumer behavior in emerging markets by supporting the use of the Stimulus-Organism-Response (S-O-R) framework as a conceptual lens for understanding purchasing decisions regarding eco-friendly products. The findings indicate that marketing strategies and product innovations are associated with consumer responses to eco-friendly skincare products (Amoako et al. 2020; Ali, 2021). The coefficient of determination (R^2) of 72.1% also provides empirical support that the integration of product attributes and brand communication has strong explanatory power in describing consumer purchasing decisions in Surabaya (Nekmahmud & Fekete-Farkas, 2020).

The prevalence of greenwashing highlights the importance for skincare companies to establish transparent and informative marketing communications to reduce consumer skepticism regarding greenwashing practices. Providing information about the origin of organic ingredients, production processes, and product sustainability commitments can help boost consumer trust, particularly among Millennials and Gen Z, who tend to be more critical of environmental claims (Safeer et al. 2025). Additionally, companies must maintain consistency between Green Product Innovation, Green Brand Image, and Green Marketing strategies to strengthen their brand position in the digital market. The use of eco-friendly packaging and the implementation of circular economy approaches, such as empty packaging return programs, can be considered as part of a company's sustainability strategy. Thus, synergy between product innovation, brand credibility, and transparent marketing communication can support a company's competitiveness in the skincare market, which is increasingly oriented toward sustainability values.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the data analysis, this study shows that Green Product Innovation, Green Brand Image, and Green Marketing have a positive and significant influence on Purchase Decision of online skincare products among Generation Y and Z in Surabaya. A coefficient of determination of 72.1% indicates that these three variables possess strong explanatory power in describing consumers' purchasing decisions regarding eco-friendly skincare products. Among these three variables, Green Marketing emerges as the factor with the most dominant influence, highlighting the importance of transparent and informative marketing communication within the context of eco-friendly consumption in the digital marketplace. Additionally, Green Product Innovation and Green Brand Image also show a correlation with increased consumer consideration when purchasing eco-friendly skincare products.

Recommendations

This study has several limitations that should be considered when interpreting the results. The study's focus on the Surabaya region, combined with the use of purposive sampling and data based on self-reported questionnaires, limits the generalizability of the findings to a broader population and may introduce bias in respondents' perceptions. Additionally, 27.5% of the variation in purchasing decisions is still influenced by factors outside the research model. Therefore, future research is advised to consider additional variables such as environmental knowledge, consumer trust, and perceived green value, as well as to employ a longitudinal approach or a broader geographic scope to gain a more comprehensive understanding of purchasing behavior regarding eco-friendly products in Indonesia.

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