

Understanding the Impact of Green Packaging on the Purchasing Intention

Lily Purwianti¹, Anita², Listia Nurjanah³

Department of Management, Faculty of Business and Management, Universitas Internasional Batam, Indonesia^{1,2,3}

Corresponding Author: Lily Purwianti (lily.purwianti@uib.ac.id)

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ABSTRACT

The growing environmental awareness has driven companies to adopt eco-friendly packaging as an innovation that minimizes impact and enhances corporate image among sustainability-conscious consumers. This study aims to examine the influence of green packaging on green purchase intention by incorporating four mediating variables: perceived green value, green attitude, green image, and risk perception. A quantitative causal-associative approach was employed, using a judgment sampling technique with 385 respondents residing in Batam. Data were collected through questionnaires and analyzed using appropriate statistical methods. The results indicate that green packaging significantly affects all mediating variables. Furthermore, perceived green value, green attitude, and green image positively influence green purchase intention, whereas risk perception negatively influences it. These findings provide valuable insights for businesses in developing more effective green marketing strategies, particularly by accounting for the generational characteristics of their consumer segments.

Keywords: Green Packaging, Green Purchase Intention, Perceived Green Value, Green Brand Image, Green Risk Perception



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INTRODUCTION

The growing concern for environmental issues has driven the popularity of eco-friendly products, which are now considered worth purchasing if they meet two main criteria: visual appeal and green attributes (Ischen et al., 2022). Alarming reports on global warming and environmental deterioration have increasingly drawn public attention, not only from environmental activists but also from the general public (Christanto & Vikend Cu, 2023). There is growing concern about the negative impacts of environmental degradation, which may threaten the survival of humans and future generations. The ongoing energy crisis and escalating environmental challenges have further raised public awareness of the importance of sustainable green products (Dwi Lestari & Roostika, 2022). Environmental problems caused by waste, especially the growing amount of difficult-to-recycle plastic, have become a significant issue.

As global awareness of environmental issues increases, both consumer behaviour and corporate practices have undergone significant changes (Reddy et al., 2023). Companies have begun

integrating environmental considerations into their operations by developing sustainable products and services, particularly through packaging solutions that reflect environmental responsibility. Eco-friendly packaging is not only about safeguarding the product but also contributes to mitigating environmental issues caused by packaging waste. The growing demand for environmentally friendly solutions is encouraging companies to focus on this emerging market, where green practices are becoming central to social progress and business growth (Zhuang et al., 2021). Nevertheless, barriers such as the complexity of value chains and consumers' negative attitudes toward economic, social, and environmental demands can hinder the implementation of more sustainable packaging (Maurizzi et al., 2022).

Therefore, understanding consumer preferences for green packaging, along with the factors influencing sustainable behavior, is essential to drive the development of more sustainable packaging solutions (Boz et al., 2020). Variables such as green perceived value, green attitude, green image, and perceived risk play a critical role in linking the impact of eco-friendly packaging to consumers' purchase intentions. Identifying these factors helps clarify how consumer perceptions and attitudes are formed and how they subsequently affect green purchase decisions. Research on green packaging has been extensively explored by scholars such as Hudayah et al. (2023), Zhuang et al. (2021), Wicaksono & Darpito (2023), and Pan et al. (2021). However, studies specifically examining the influence of green packaging on green purchase intention remain relatively limited. For instance, studies by Aldaihani et al. (2024) and Rakesh Kumar Meet et al. (2024) highlight the factors influencing the intention to purchase products with environmentally friendly packaging, particularly among Generation Z. Suwandi et al. (2023) Expanded this scope by including both Generation Y and Z in their analysis. This research is essential due to the significant differences in behavior and shopping preferences among Generations X, Y, and Z, which influence their purchase intentions (Cavalinhos et al., 2023).

Earlier research has primarily relied on the Theory of Planned Behaviour (TPB) to develop empirical models that identify factors influencing consumers' pro-environmental behaviours (Lan et al., 2023; Rahman et al., 2022). In contrast, this study adopts the Value-Belief-Norm (VBN) theory, which provides a more comprehensive understanding of the social and psychological mechanisms that drive individuals' environmentally friendly actions. Supporting this approach, Fauzi et al. (2024) found that elements within the VBN framework—such as a sense of responsibility and readiness to act—can complement and strengthen TPB-based explanations. Additionally, this study considers the differing viewpoints of Mahmoud et al. (2022), who argue that eco-friendly packaging does not always significantly influence consumers' purchasing decisions. This research compares the effects of eco-friendly packaging on green purchase intentions across three generations: Generation X (16–24), Generation Y (25–34), and Generation Z (35–45). It addresses gaps left by previous studies that often focus on only one or two generations (Aldaihani et al., 2024; Rakesh Kumar Meet et al., 2024; Suwandi et al., 2023). Given the inconsistent results regarding the effectiveness of green packaging in influencing purchase intention, this study investigates the factors that may explain these differences. By analysing the impact of eco-friendly packaging using VBN theory, with four mediating variables—green perceived value, green image, green attitude, and perceived risk—this study offers more profound insight into the determinants of green purchase intention across generations.

The results offer novel insights into the generational differences in how eco-friendly packaging impacts green purchase intentions and enhance the scholarly literature by thoroughly analysing four mediating variables. These findings are expected to help companies craft more precise and impactful sustainable marketing strategies that cater to the unique characteristics of each generation.

LITERATURE REVIEW

In developing the hypotheses for this study, it is essential to ground the discussion in relevant theoretical frameworks and prior empirical findings that explain the factors influencing sustainable consumer behavior. The Value-Belief-Norm (VBN) theory provides a comprehensive basis for

understanding how individual values, beliefs, and norms shape pro-environmental intentions and actions, particularly in the context of eco-friendly packaging (Gomes et al., 2022; Han, 2020). By integrating insights from existing literature and theories such as VBN and the Theory of Planned Behavior (TPB), this section aims to build logical and evidence-based hypotheses that address the research gaps identified earlier, focusing on the mediating roles of green perceived value, green attitude, green image, and perceived risk in shaping consumers' green purchase intentions (Fauzi et al., 2024).

Green Packaging

Green packaging has become a significant determinant in shaping consumers' perceived value (Hudayah et al., 2023). The increasing adoption of recycled and biodegradable materials by companies demonstrates a growing commitment to sustainability, which in turn positively affects consumer perceptions (Zhuang et al., 2021). Packaging that adheres to green standards meets both emotional and functional expectations of environmental responsibility, thereby fostering a stronger consumer-product relationship (Wicaksono & Darpito, 2023). The perceived value of sustainable packaging plays a critical role in shaping consumers' purchase intentions (Amani, 2024). Empirical evidence indicates a strong positive correlation between green packaging and perceived value, which significantly impacts purchasing decisions (Pan et al., 2021).

Furthermore, products packaged in an environmentally friendly manner are frequently perceived as superior in quality and innovation, reinforcing consumer confidence in the product's environmental accountability. Consequently, green packaging also contributes meaningfully to consumers' decisions to purchase sustainable products (Duarte et al., 2024). Based on these considerations, the following hypothesis is proposed.

H1: Green packaging has a positive and significant effect on green perceived value.

The role of green packaging in shaping consumer attitudes toward sustainability is increasingly recognized. When consumers encounter packaging designed with sustainability in mind, they tend to develop positive perceptions that enhance their trust in the product (Hyder & Amir, 2023). Research indicates that green packaging significantly strengthens consumer beliefs and increases the likelihood of choosing products that demonstrate environmental awareness (Aldaihani et al., 2024). This connection fosters engagement with the product, as consumers perceive their purchase as contributing to environmental protection. Moreover, green packaging serves not only as a symbol of commitment to sustainability but also reinforces consumers' positive attitudes toward the product. Many consumers exhibit a stronger intention to purchase products with green packaging, as it aligns with their personal values (Gupta, 2021). Awareness of the importance of sustainability-focused packaging encourages consumers to feel more responsible for environmental issues, thereby motivating them to select products that uphold these principles (Hudayah et al., 2023). Consequently, the adoption of green packaging reflects corporate commitment to sustainability while simultaneously promoting environmentally friendly choices among consumers during their purchasing decisions (Boz et al., 2020). Moreover, the following hypothesis is formulated.

H2: Green packaging has a positive and significant effect on green attitude.

Green packaging has an important role in shaping consumer perceptions of brand sustainability (Zhang et al., 2024). Studies show that well-designed packaging not only enhances perceived value but also associates products with a sustainable and eco-friendly brand image (Pan et al., 2021). As consumer awareness of sustainability grows, companies must optimize the environmental features of their products to strengthen branding and increase market appeal (Majeed et al., 2022). Packaging thus serves not only as product protection but also as a key tool for building a positive brand image. Moreover, green packaging significantly impacts the overall green brand image. Research indicates that it contributes to a stronger perception of a brand's commitment to sustainability and environmental responsibility (Seifollahi, 2023). Consumers tend to favor brands that demonstrate

environmental concern through sustainable packaging design, which helps differentiate them in a competitive market (Tan et al., 2022). Therefore, green packaging acts as a powerful visual statement of a brand's values, enhancing its appeal among environmentally conscious consumers. Based on the theoretical arguments, the following hypotheses are presented.

H3: Green packaging positively and significantly influences green brand image.

Perceived environmental risk often serves as a barrier to consumers' choice of environmentally friendly products. Research indicates that higher-quality green packaging is associated with lower perceived risk among consumers (Zhuang et al., 2021). In other words, well-designed packaging not only protects the product but also helps reduce consumers' concerns about its environmental impact (Pan et al., 2021). When green packaging communicates its sustainability benefits and features, consumers feel more confident in making sustainability-oriented purchasing decisions (Herbes et al., 2020). However, challenges arise when the packaging only offers partial sustainability. If consumers perceive that sustainability claims do not fully align with the product reality, perceived green risk can increase, potentially leading to disappointment and distrust in the brand (Steenis et al., 2023). Research has shown that well-designed green packaging can significantly lower consumers' perceived risks, underscoring the need for companies to align sustainability claims with actual product performance (Fayad & Hairudinor, 2024).

H4: Green packaging has a negative and significant effect on perceived risk.

Green Perceived Value

When consumers perceive that environmentally friendly products offer meaningful benefits, such as sustainability and social responsibility, they are more likely to make a purchase (Dangelico et al., 2022). This study suggests that recognizing a high green perceived value can increase consumers' willingness to invest in such products, especially when they are exposed to comprehensive sustainability initiatives (Wicaksono & Darpito, 2023). Furthermore, green perceived value serves as a key motivational factor in driving purchasing decisions, as highlighted by previous studies (Román-Augusto et al., 2022). Research by Zhuang et al. (2021) also emphasizes that green perceived value, along with green attitudes and green trust, significantly affects green purchase intention. When consumers believe that environmentally friendly products offer not only quality but also strong social responsibility, their tendency to buy them increases (Ahmad et al., 2023). In addition, the perception that these products deliver tangible benefits, both personally and environmentally, further motivates consumers to shift toward more sustainable choices (Confente et al., 2020).

H5: Green perceived value has a positive and significant influence on green purchase intention.

When consumers perceive high green value in environmentally friendly products, it positively influences their purchase intentions. The presence of environmental benefits and the added value offered by green products play a pivotal role in capturing consumer interest (Zhuang et al., 2021). Prior research has demonstrated that an elevated perceived value is closely linked to stronger purchase intentions, underscoring its critical role in guiding consumer decision-making (Pan et al., 2021). Furthermore, eco-friendly packaging not only enhances perceived value but also mitigates the perceived risks associated with the product, thereby reinforcing consumers' intention to purchase, both directly and indirectly. Green perceived value also manifests in consumers' tendency to make green purchasing decisions. When consumers believe that the environmental benefits of green products outweigh those of conventional alternatives, their purchase intentions are significantly strengthened (Confente et al., 2020). Perceptions of green packaging significantly influence consumers' valuation of a product, underscoring a strong relationship between packaging and perceived value. In addition, green packaging helps shape the product's image as high-quality, innovative, and environmentally responsible, ultimately fostering greater consumer willingness to purchase (Hudayah et al., 2023). Consumers are also more likely to choose environmentally friendly

products when they perceive these offerings as delivering substantial benefits, particularly in terms of sustainability and social responsibility (Wicaksono & Darpito, 2023).

H9: Green perceived value significantly mediates the relationship between green packaging and green purchase intention.

Green Attitude

Green attitude refers to an individual's favorable disposition toward behaviors that promote environmental sustainability (Purwianti et al., 2024, 2025; Putra et al., 2025). It reflects the degree to which individuals support and value environmentally responsible practices. From a consumer perspective, a strong green attitude increases the likelihood of endorsing and engaging with sustainable products and services. Consumers tend to show stronger preferences for offerings from companies that emphasize environmental protection through various sustainability initiatives. The strategic application of such initiatives aims to build positive consumer perceptions, thereby effectively boosting their willingness to buy. (Aldaihani et al., 2024). Empirical findings also demonstrate that a positive consumer attitude toward eco-friendly products has the most substantial influence on their intention to purchase sustainably packaged items. A green attitude significantly impacts both emotional and functional value perceptions, thereby contributing meaningfully to purchase intention (Lan et al., 2023; Wang et al., 2022). When consumers hold positive views toward sustainability, they are more inclined to engage in green purchasing behaviors (Zhuang et al., 2021). Additionally, a favorable green attitude reinforces consumers' decision to choose products with environmentally friendly packaging (Abdullah et al., 2023; Kabel et al., 2020).

H6: Green attitude has a positive and significant effect on green purchase intention.

Green attitude serves as a pivotal mediating variable in the relationship between green packaging and green purchase intention. While eco-friendly packaging may not always directly influence consumers' purchase intentions, a positive consumer attitude toward sustainability can significantly shape how green packaging affects purchasing behavior. Thus, cultivating favorable environmental attitudes is essential to enhancing the effectiveness of green packaging strategies (Aldaihani et al., 2024). Furthermore, the findings emphasize that perceptions of a brand's environmental image, along with consumers' environmental attitudes, are key determinants of green purchase intention (Majeed et al., 2022). Zhuang et al. (2021) Further emphasize that a positive attitude toward environmentally friendly products significantly increases the likelihood that consumers will engage in green purchases, as those with a strong orientation toward sustainability are more inclined to support eco-conscious products. Consumers with a positive environmental outlook are more inclined to purchase eco-conscious beauty products, underscoring the attitude's strong influence on green buying behavior. (Kabel et al., 2020). Additionally, green packaging not only communicates a company's commitment to sustainability but also reinforces positive consumer perceptions of the product, ultimately encouraging greater intention to purchase environmentally packaged items (Gupta, 2021).

H10: Green attitude significantly mediates the relationship between green packaging and green purchase intention.

Green Brand Image

A strong green brand image can be crucial to increasing purchase intention. By adopting environmentally friendly packaging, companies demonstrate their commitment to environmental responsibility and enhance their competitive advantage. This approach can attract new customers and retain existing ones, emphasizing the importance of promoting a green brand image to boost customer engagement and loyalty (Seifollahi, 2023). Moreover, research indicates that an environmentally friendly brand image is a key factor driving consumers' purchase intentions for products with sustainable packaging (Zhang et al., 2024). In the context of green purchase intention, this study highlights the importance of green brand image and customer attitudes toward

environmental issues (Majeed et al., 2022). Empirical evidence suggests that a well-established green brand image significantly reinforces consumer trust, fosters more substantial commitment, and elevates satisfaction levels, factors that collectively enhance consumers' propensity to make purchase decisions (Nguyen-Viet et al., 2024; Widodo et al., 2024). A positive green brand image is essential in reinforcing purchase intentions, as consumers tend to choose products perceived as environmentally friendly and sustainable, as reflected in the brand's image (Tan et al., 2022).

H7: Green brand image positively and significantly influences green purchase intention.

Product packaging plays a crucial role in shaping a brand's image as sustainable and environmentally friendly, ultimately influencing consumers' willingness to purchase green products (Pan et al., 2021). Research indicates that green brand image significantly mediates the relationship between green packaging, green image, and green purchase intention. Green packaging design helps cultivate consumer trust in a brand's environmental responsibility, thereby strengthening overall brand engagement (Majeed et al., 2022). A green brand image lies at the core of any product or service and is typically communicated to consumers to build trust, thereby helping them make purchase decisions (Nguyen-Viet et al., 2024; Widodo et al., 2024). A positive green image in the minds of environmentally conscious consumers can enhance their intention to use such products, making the brand more attractive to new customers while retaining existing ones (Seifollahi, 2023). In addition to its protective function, green packaging communicates a strong, environmentally friendly image, reinforcing the perception that the brand is dedicated to sustainability and ecological responsibility. A strong green brand image is vital in promoting green purchase intention, as consumers tend to prefer products they perceive as eco-friendly and sustainable, as reflected in the brand's image (Tan et al., 2022).

H11: Green brand image significantly mediates the relationship between green packaging and green purchase intention.

Green Perceived Risk

The perception of risk associated with environmentally friendly products has emerged as a critical determinant of customers' green purchase behavior. Alongside factors such as attitude and green trust, perceived green risk also plays a significant role in shaping purchase intentions. Research evidence demonstrates that customers' intentions to engage in green purchasing are positively impacted by their sense of control over behavior, perceived ability to make an environmental impact, and social pressures or expectations. However, perceived risk serves as a barrier, as higher levels of uncertainty or skepticism regarding green products—such as doubts about their performance, quality, or reliability—tend to diminish consumers' willingness to purchase (Zhuang et al., 2021; Hakim et al., 2020). Moreover, as consumers perceive greater risks, particularly concerning the credibility or effectiveness of sustainable products, their purchase intentions decline accordingly (Lu et al., 2022). Conversely, lower perceived risk—especially when companies demonstrate clear sustainability efforts—can alleviate consumer doubts and enhance green purchase intentions. This inverse relationship has been well documented, underscoring the crucial role of trust and transparency in mitigating perceived risk (Pan et al., 2021). Similarly, Herceberg et al. (2022) Emphasize that doubts surrounding the functional performance of green products can lead to consumer hesitation, ultimately discouraging green product purchases.

H8: Green perceived risk negatively and significantly impacts green purchase intention.

Consumers' concerns about environmental degradation influence their intention to purchase sustainably packaged products, although the strength of this influence may vary (Zhuang et al., 2021). Often, consumers associate perceived risk with the level of trust they place in a brand. When they perceive environmental risk as low, their intention to purchase increases. However, doubts regarding a product's effectiveness or reliability may negatively impact purchase intention (Herceberg et al., 2022). Elevated perceptions of risk are directly associated with a decline in customers'

willingness to purchase environmentally friendly products (Pan et al., 2021). Green packaging has the potential to shape perceived risk, as clear and accurate eco-labeling can reduce uncertainty and alleviate concerns about a product's environmental impact (Herbes et al., 2020). Nevertheless, when green packaging only partially delivers on sustainability claims, it may heighten consumers' perceived risk, leading them to feel misled by sustainability messages that fail to reflect the product's actual environmental performance (Steenis et al., 2023).

H12: Perceived risk significantly mediates the relationship between green packaging and green purchase intention.

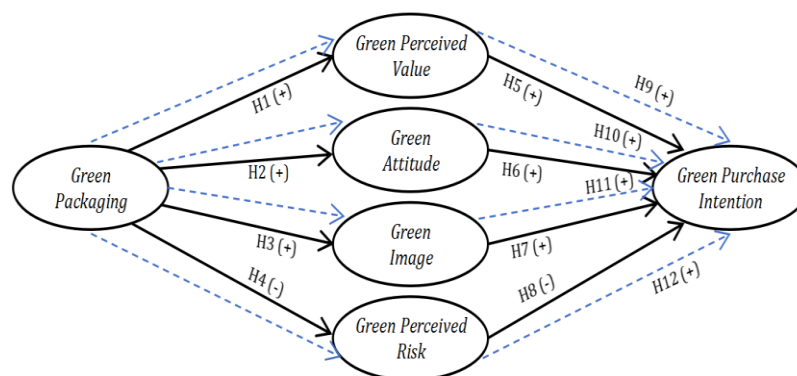


Figure 1. Conceptual Framework
Source: Primary Data Analysis 2025

METHODS

This study employs a causal-associative design using a quantitative approach to examine cause-and-effect relationships among variables. The research population focuses on residents of Batam City, consisting of individuals of all genders from Generation X (16–24 years), Generation Y (25–34 years), and Generation Z (35–45 years) who are aware of environmentally friendly packaging and have made purchases of products with such packaging. The sampling method used is non-probability sampling—specifically, judgment sampling—which is appropriate for selecting respondents based on specific criteria relevant to the research objectives. Based on the population size of approximately 1.2 million people (Central Bureau of Statistics), the sample size was determined using the Krejcie & Daryle formula Morgan's (1970) formula. For a population of 1,000,000 people or more, the suggested minimum sample size is 384 respondents; therefore, this study collected data from 385 respondents.

The research instrument includes six main variables: green packaging, green perceived value, green attitude, green image, green risk perception, and green purchase intention. Each variable was measured using several indicators adapted from reliable empirical sources. Specifically, green packaging was measured using three indicators from Pan et al. (2021); green perceived value with five indicators from Amani (2024); green attitude with four indicators from Aldaihani et al. (2024); green image with five indicators from Blanco-Encomienda et al. (2024); green risk perception with four indicators from Lu et al. (2022); and green purchase intention with four indicators from Aldaihani et al. (2024). Responses were collected using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The analysis of measurement quality, assumption testing, and hypothesis testing was conducted using SmartPLS 4 software. Table 1 shows the measurement indicators used for each variable.

Table 1. Measurement

Variabel	Items
Green Packaging (GP)	<ul style="list-style-type: none"> • Green packaging is beneficial for the environment. (GP1) • I pay attention to environmental labels, such as recycling symbols, on products with green packaging. (GP2) • I can easily distinguish between recyclable and non-recyclable packaging. (GP3)
Green Perceived Value (GPV)	<ul style="list-style-type: none"> • I prefer products with green packaging performance because they meet my expectations. (GPV1) • I prefer products with green packaging because they provide significant value to me. (GPV2) • I prefer products with green packaging because they are more environmentally friendly. (GPV3) • I prefer products with green packaging because they offer greater environmental benefits than other products. (GPV5) • I prefer products with green packaging because they help me feel socially accepted. (GPV5)
Green Attitude (GA)	<ul style="list-style-type: none"> • Products with green packaging help reduce pollution. (GA1) • Products with green packaging help preserve nature and its resources. (GA2) • Overall, the feeling I get from products with green packaging makes me feel environmentally safe. (GA3) • If given a choice, I would prefer products with green packaging over those with conventional packaging. (GA4)
Green Image (GI)	<ul style="list-style-type: none"> • Products with green packaging are excellent products. (GI1) • Green packaging product brands have a good reputation. (GI2) • Products with this brand's green packaging function very well. (GI3) • Green packaged products are available across many categories. (GI4) • The brand's green-packaged products have a good design. (GI5)
Green Perceived Risk (GPR)	<ul style="list-style-type: none"> • The environmental performance of green packaged products may be flawed. (GPR1) • Green-packaged products may not perform well in terms of their environmental impact. (GPR2) • Using green packaging products could hurt the environment. (GPR3) • Using green packaging products could potentially harm your environmental reputation or green image. (GPR4)
Green Purchase Intention (GPI)	<ul style="list-style-type: none"> • I enjoy selecting products with packaging that has minimal environmental impact. (GPI1) • I always plan to purchase products with green packaging. (GPI2) • I consistently encourage my friends and others to buy products with green packaging. (GPI3) • I am highly likely to purchase products with green packaging in the future. (GPI4)

Source: Primary Data Analysis 2025

RESULTS AND DISCUSSION

Table 2 presents the demographic profile of the 385 respondents. The majority were male (65%) and belonged predominantly to Generation Y (25–34 years, 45%) and Generation X (16–24 years, 38%), both of which are known for their heightened awareness of environmental issues. Most respondents were employed in the private sector (71%), had a middle-income level (Rp4,685,050–5,500,000, 40%), and had attained a high school degree (50%) and a bachelor's degree (39%). The results indicate that demand for eco-friendly packaging is primarily driven by young, well-educated men working in professional sectors, who are environmentally conscious and financially able to choose sustainable products.

Table 2. Profile of Respondent

Demographic	Category	n	Observation (%)
Gender	Women	136	35
	Men	249	65
Age	Gen X (16-24)	148	38
	Gen Y (25-34)	173	45
	Gen Z (35-45)	64	17
Income	< 4.685.050	43	11
	4.685.050 - 5.500.000	154	40
	5.500.000 - 7.000.000	104	27
	7.000.000 - 8.500.000	64	17
	> 8.500.000	20	5
Occupation	Student	44	11
	Private Sector Employee	275	71
	Housewife	4	1
	Entrepreneur	42	11
	Unemployed	1	1
	Civil Servant	19	5
Highest Level of Education	Junior High School	21	5
	High School	193	50
	Diploma	18	5
	Bachelor's Degree	148	39
	Master's Degree & Doctorate Degree	5	1

Source: Primary Data Analysis 2025

Table 3 presents the results of the measurement model assessment, confirming the validity and reliability of each construct and indicator. Based on the analysis results, all indicators in the model have outer loadings above 0.70, indicating convergent validity. The values of Cronbach's Alpha and Composite Reliability (including rho_A and rho_C) fall within the acceptable range of 0.70 to 0.95, demonstrating good internal reliability and consistent construct representation without excessive redundancy. All Average Variance Extracted (AVE) values are above 0.50, further reinforcing the convergent validity of each construct. The results of the multicollinearity assessment indicate that all Variance Inflation Factor (VIF) values are below the threshold of 5, in line with the recommendations by Hair et al. (2019). This implies that the model shows no signs of multicollinearity or standard method bias (CMB).

Table 3. Validity and reliability test

Variable And Item	Loading Factor	Cronbach Alpha	Composite Reliability (Rho_A)	Composite Reliability (Rho_C)	AVE	VIF
Green Packaging GP1	0,795	0,714	0,715	0,840	0,636	1,367

GP2	0,787					1,390
GP3	0,811					1,441
Green Perceived Value		0,810	0,815	0,868	0,568	
GPV1	0,793					1,741
GPV2	0,779					1,696
GPV3	0,706					1,610
GPV4	0,724					1,615
GPV5	0,761					1,658
Green Attitude		0,813	0,814	0,877	0,641	
GA1	0,800					1,709
GA2	0,796					1,706
GA3	0,795					1,695
GA4	0,812					1,735
Green Image		0,853	0,857	0,895	0,630	
GI1	0,748					1,598
GI2	0,814					1,822
GI3	0,817					1,991
GI4	0,774					1,831
GI5	0,811					2,028
Green Perceived Risk		0,918	0,929	0,942	0,802	
GPR1	0,889					2,841
GPR2	0,893					2,719
GPR3	0,898					3,310
GPR4	0,902					3,763
Green Purchase Intention		0,828	0,831	0,886	0,661	
GPI1	0,760					1,531
GPI2	0,859					2,209
GPI3	0,796					1,733
GPI4	0,832					1,972

Source: Primary Data Analysis 2025

Table 4 presents the results of the discriminant validity test using the Heterotrait Monotrait Ratio (HTMT) approach. According to the criteria set by Henseler et al. (2015), HTMT values below 0.90 indicate that the model satisfies the requirements for discriminant validity. HTMT assesses the extent to which a construct is truly distinct from other constructs within the model. HTMT values below the 0.90 threshold indicate that each construct is distinct, with no substantial overlap. This enhances the clarity and reliability of interpreting the relationships between variables.

Table 4. Discriminant validity (HTMT Value)

	GA	GI	GP	GPI	GPR	GPV
GA						
GI	0,749					
GP	0,875	0,772				
GPI	0,810	0,786	0,832			
GPR	0,149	0,103	0,240	0,257		
GPV	0,668	0,611	0,718	0,807	0,268	

Source: Primary Data Analysis 2025

Table 5 presents the results of the discriminant validity test based on the Fornell-Larcker criterion. According to Claes Fornell & David F. Lacker (1981) Good discriminant validity is when the square

root of the Average Variance Extracted (AVE) for each construct is greater than the correlations between that construct and others in the model. As shown in the table, all constructs meet this requirement, where the square root of the AVE for each construct exceeds its correlations with other constructs. Each construct in the model demonstrates strong discriminant validity, as it is distinguishable from the others.

Table 5. Discriminant validity (Fornell Value)

	GA	GI	GP	GPI	GPR	GPV
GA	0,801					
GI	0,629	0,793				
GP	0,669	0,607	0,798			
GPI	0,666	0,666	0,642	0,813		
GPR	-0,130	-0,089	-0,197	-0,227	0,896	
GPV	0,539	0,514	0,549	0,665	-0,241	0,754

Source: Primary Data Analysis 2025

Hypothesis testing is conducted by examining the path coefficients and p-values within the structural model. Path coefficients are standardized on a scale from -1 to +1, where values near +1 indicate a strong positive relationship, while values near -1 indicate a strong negative relationship (Hair et al., 2014). Table 6 presents the results of hypothesis testing, which demonstrate that all T-statistic values exceed 1.96 and all p-values are below 0.05, meeting the significance threshold established by Hair et al. (2019). These results indicate that the relationships between variables in the structural model are statistically significant. The fulfillment of these criteria confirms that all proposed hypotheses are supported, suggesting that the structural model is valid and can explain the relationships among variables with strong and convincing support.

Table 6. Hypothesis Testing

	Hypothesis	Coefficient	T statistics	P-values	Decision
H1:	Green packaging has a statistically significant impact on green perceived value.	0,280	4,904	0,000	Supported
H2:	Green packaging has a statistically significant impact on green attitude.	0,311	5,736	0,000	Supported
H3:	Green packaging positively and significantly influences green brand image.	0,669	10,264	0,000	Supported
H4:	Green packaging has a negative and significant effect on perceived risk.	0,607	10,895	0,000	Supported
H5:	Green perceived value has a positive and significant influence on green purchase intention.	-0,197	3,689	0,000	Supported
H6:	A green attitude has a statistically significant impact on green purchase intention.	0,549	7,836	0,000	Supported
H7:	Green brand image positively and significantly influences green purchase intention.	-0,082	2,731	0,006	Supported
H8:	Green perceived risk has a significant and negative impact on green purchase intention.	0,334	6,328	0,000	Supported

H9:	Green perceived value significantly mediates the relationship between green packaging and green purchase intention.	0,016	2,031	0,042	Supported
H10:	Green attitude significantly mediates the relationship between green packaging and green purchase intention.	0,189	4,555	0,000	Supported
H11:	Green brand image significantly mediates the relationship between green packaging and green purchase intention.	0,187	3,783	0,000	Supported
H12:	Perceived risk significantly mediates the relationship between green packaging and green purchase intention.	0,184	4,066	0,000	Supported

Source: Primary Data Analysis 2025

The findings indicate that Green Packaging has a positive and significant influence on Green Perceived Value. Packaging that utilizes recyclable and biodegradable materials while reducing the excessive use of plastic and paper is perceived as delivering tangible environmental benefits, thereby enhancing consumers' Green Perceived Value of the product (Hudayah et al., 2023; Wicaksono & Darpito, 2023). Green Packaging with recognized sustainability standards will make consumers more likely to perceive the product as not only functionally valuable but also meaningful in its contribution to environmental preservation (Zhuang et al., 2021). Pan et al. (2021) found that elements of Green Packaging, such as ecological labels and minimalist design, contribute to creating the impression of a higher-value product. Amani (2024) further highlights that consumers assign greater Green Perceived Value to products when the packaging clearly embodies a sincere environmental commitment. The stronger the alignment between Green Packaging and consumers' sustainability values, the greater the Green Perceived Value. Duarte et al. (2024) further argue that Green Packaging serves as a signal of the producer's environmental commitment, which indirectly builds positive perceptions of product benefits. Consumers associate Green Packaging with efficiency, quality, and ecological responsibility, thereby feeling they gain greater Green Perceived Value from their green product choices (Confente et al., 2020).

The findings indicate that Green Packaging significantly influences consumers' Green Attitude. Packaging that reflects genuine sustainability efforts shapes how consumers assess a product and encourages the development of a more favorable Green Attitude toward its usage. When consumers encounter Green Packaging designed with eco-conscious principles—such as the incorporation of recycled materials, minimalist aesthetics, and educational information on environmental impact—they are more inclined to form positive Green Attitudes toward the product (Hyder & Amir, 2023). These attitudes encompass both affective and cognitive evaluations, driven by the perception that Green Packaging resonates with their moral, social, and ecological values (Gupta, 2021). Beyond serving as a protective element, Green Packaging acts as a visual representation of a company's commitment to environmental responsibility. This alignment reinforces consumers' belief that choosing products with sustainable packaging is consistent with their personal values, thereby nurturing stronger Green Attitudes (Boz et al., 2020). Furthermore, Aldaihani et al. (2024) underscore that eco-friendly packaging can shape consumers' emotions and beliefs, ultimately increasing the likelihood of engaging in more environmentally responsible consumption behavior.

Green Packaging has a significant impact on shaping a brand's Green Image. When packaging visibly demonstrates a commitment to sustainability, it helps reinforce the brand's perception as environmentally responsible. Green Packaging conveys that the brand is accountable for its

environmental footprint, thereby enhancing a positive Green Image in the eyes of sustainability-conscious consumers (Tan et al., 2022). It plays a crucial and strategic role in cultivating a favorable Green Image, transforming packaging from a mere protective layer into a powerful medium that communicates the brand's values and environmental commitment (Zhang et al., 2024). When Green Packaging effectively communicates the brand's dedication to sustainability, customer perceptions of the brand image are shaped. The brand is seen as more innovative, forward-thinking, and socially responsible (Majeed et al., 2022). This environmentally friendly image does not stem solely from the product itself, but is primarily influenced by how the product is packaged and presented to the public (Pan et al., 2021). A compelling Green Image derived from eco-friendly packaging offers a competitive advantage, especially as consumers evaluate multiple options in the marketplace. Packaging that symbolically and visually reflects environmental care tends to build greater consumer trust in the brand's integrity (Seifollahi, 2023).

The findings reveal that Green Packaging negatively influences Green Perceived Risk. Eco-friendly packaging helps reduce consumers' concerns about a product's environmental impact by conveying transparency and corporate responsibility. In other words, when packaging reflects sustainability efforts, it lowers consumers' perceived risk associated with purchasing products that might otherwise be considered environmentally harmful (Herbes et al., 2020). When Green Packaging is holistically designed to communicate sustainability using biodegradable materials, recognizable symbols, and transparent messaging, it enhances consumers' clarity and trust in the product. This contributes to a reduction in perceived risks, such as doubts about product effectiveness, brand credibility, or environmental harm associated with its usage (Zhuang et al., 2021). Conversely, Green Perceived Risk tends to increase when packaging appears inconsistent with the brand's green claims, leading to consumer skepticism (Steenis et al., 2023).

Green Perceived Value has a significant positive influence on Green Purchase Intention. The higher the perceived value of an environmentally friendly product, the stronger the customer's intention to purchase it. Consumers who view a product as a sustainable choice are more inclined to buy it, as they feel that their purchase contributes to environmental preservation and sustainability efforts. A high Green Perceived Value indicates that the product not only provides personal benefits but also serves a greater purpose, such as promoting sustainability, environmental balance, and social responsibility. When consumers perceive that a product embodies the sustainability principles they support, the act of purchasing shifts from a mere transaction to meaningful participation in positive change (Wicaksono & Darpito, 2023). Moreover, the perception that eco-friendly products offer quality equal to or even superior to conventional alternatives—combined with the moral satisfaction or pride associated with the purchase—further strengthens the Green Purchase Intention (Román-Augusto et al., 2022). When the perceived value resonates with consumers' emotional and ideological beliefs, their decision to buy becomes more compelling. Products that effectively communicate ecological benefits, safety, and alignment with responsible lifestyle values are more likely to generate strong and consistent purchasing interest (Zhuang et al., 2021).

Green Attitude also significantly affects Green Purchase Intention. Consumers with a positive attitude toward sustainability are more likely to choose products with environmentally friendly packaging. This attitude encourages them to consider the environmental consequences of their purchasing decisions, thereby increasing their intention to buy products perceived as eco-friendly and sustainable (Seifollahi, 2023). When consumers hold favourable views of environmental preservation, they tend to see purchasing green products as a personal contribution to addressing global environmental challenges. This perspective is reflected in stronger purchase intentions for products that align with their green values (Aldaihani et al., 2024). Moreover, a positive Green Attitude enhances the individual's sense of environmental responsibility. Consumers who perceive that even minor choices such as opting for products with eco-friendly packaging—can contribute to positive environmental outcomes tend to be more motivated to make such purchases (Zhuang et al., 2021). Feelings of pride, satisfaction, and alignment with a green lifestyle drive consumers to favor products that reflect their values. Attitudes shaped by awareness and personal experiences also

contribute to the sustained commitment to environmentally conscious purchasing behaviour. The more favourable consumers' perceptions of a company's sustainability practices, the more likely they are to choose it as their preferred option (Lan et al., 2023; Majeed et al., 2022).

Green Image plays a significant role in enhancing Green Purchase Intention. When a brand successfully establishes a positive image as environmentally conscious, consumers are more inclined to choose its products. A strong Green Image strengthens consumer trust and increases their willingness to purchase products perceived as environmentally friendly (Tan et al., 2022). When consumers view a brand as genuinely committed to environmental concerns, they are more likely to trust the brand and feel confident in selecting its products. A positive Green Image symbolizes a company's dedication to sustainability and exerts a powerful psychological effect on consumers who share similar ecological values (Seifollahi, 2023). Furthermore, Green Image functions as a driver of competitive advantage. By positioning itself as a sustainability leader, a company can attract environmentally conscious market segments and maintain loyalty among consumers who prioritize eco-friendly values (Majeed et al., 2022).

This study also concludes that Green Perceived Risk hurts Green Purchase Intention. The higher the perceived risk, the greater the consumer's hesitation in making a purchase decision. Consumers who are concerned about the environmental impact or product quality tend to reduce their intention to purchase, as they prioritize risk avoidance (Zhuang et al., 2021). These risks may include concerns about product performance, the reliability of eco-friendly materials, lack of knowledge about product use, and perceptions that the price is not justified by the benefits (Hakim et al., 2020). When consumers are uncertain about whether green products are truly effective or meet their expectations, they are likely to develop doubts and become reluctant to commit to a purchase (Pan et al., 2021). Other studies support this finding, stating that Green Perceived Risk—whether functional, psychological, or financial—can weaken purchase intention by increasing uncertainty and the perception of potential loss (Lu et al., 2022). In this context, consumers who perceive high levels of risk in green products may judge the purchase decision as emotionally and rationally unjustifiable. Conversely, when companies successfully communicate both the sustainability and quality of their products, the perceived risk can be reduced, thereby creating greater opportunities to enhance purchase intention (Herberg et al., 2022).

Green Perceived Value has been proven to mediate the relationship between Green Packaging and Green Purchase Intention. When consumers perceive that a product's packaging is designed with sustainability in mind, they tend to assign it a higher value. This perceived value encompasses environmental benefits, resource efficiency, and the company's demonstration of social responsibility (Pan et al., 2021; Zhuang et al., 2021). Eco-friendly packaging can enhance consumers' perceptions of product quality and brand image through innovative design, biodegradable materials, and clear sustainability messages displayed on the label. Moreover, green packaging not only elevates perceived value but also indirectly reduces Green Perceived Risk, creating a more convincing and trustworthy decision-making experience for consumers (Confente et al., 2020). All these elements contribute to the perception that the product has high value. When consumers view eco-friendly packaging as a reflection of quality, innovation, and ethical values, they are more likely to evaluate the product positively, thereby increasing their purchase intention (Hudayah et al., 2023; Wicaksono & Darpito, 2023).

Green Attitude serves as a mediating variable in the relationship between Green Packaging and Green Purchase Intention. Eco-friendly packaging can foster a positive attitude toward sustainability, which in turn influences consumers' purchasing decisions. A favorable attitude toward environmental sustainability increases consumers' intention to purchase such products, as they feel more engaged and responsible toward environmental issues (Fayad & Hairudinor, 2024). Packaging designed with sustainable principles often triggers a positive affective response from consumers, as it reflects values such as environmental responsibility, social accountability, and concern for future ecological Well-being (Gupta, 2021). These affective responses help shape a positive attitude toward

both the product and the brand, ultimately strengthening consumers' intention to buy (Aldaihani et al., 2024; Zhuang et al., 2021).

Green Image also mediates the relationship between Green Packaging and Green Purchase Intention. Eco-friendly packaging can enhance a brand's positive image, thereby strengthening consumers' intention to purchase the product. A strong green image reinforces the sustainability message conveyed by green packaging, influencing consumer decision-making in favor of environmentally responsible products. A well-established green image plays a crucial role in building consumer trust and loyalty, particularly in markets that are increasingly aware of environmental and sustainability issues (Seifollahi, 2023). Consumers are more attracted to brands that visually and narratively communicate their commitment to green practices. A green image serves as a psychological bridge between packaging and purchase intention, with a favorable brand perception increasing the likelihood that consumers choose products packaged sustainably (Tan et al., 2022).

Green Perceived Risk mediates the relationship between Green Packaging and Green Purchase Intention. When consumers perceive that the environmental or functional risks associated with green products are low, their intention to purchase them tends to increase. Conversely, if the perceived risk is high, green packaging alone may not be sufficient to convince consumers to proceed with a purchase. Therefore, reducing perceived risk is essential to enhancing green purchase intention (Herbes et al., 2020). Green Perceived Risk is a critical factor in the consumer decision-making process, especially when consumers face products that claim environmental sustainability. Concerns about the credibility of environmental claims, product effectiveness, and safety can significantly hinder the formation of purchase intention (Pan et al., 2021). Green packaging, designed with transparency and clear sustainability messaging, plays a vital role in minimizing consumer uncertainty (Steenis et al., 2023). When consumers believe that green packaging genuinely contributes to sustainability, their perceived risk decreases, thereby strengthening their intention to purchase.

Green packaging can be an effective marketing tool for companies offering eco-friendly products by improving brand image, perceived value, and consumer attitudes, while lowering perceived risks and boosting purchase intentions. Managers should pay particular attention to visually and informatively communicating sustainability through packaging design. Theoretically, this research contributes to understanding how cognitive and emotional mechanisms—perceived value, attitude, image, and risk perception—mediate the relationship between green packaging and green purchase intention, highlighting both the functional and symbolic roles of packaging in shaping consumer evaluations. Future studies could extend these insights by incorporating actual purchasing behavior, contextual factors such as social norms and environmental literacy, and longitudinal designs to deepen theoretical and practical understanding of green consumer behavior.

CONCLUSION

This study reveals that Green Packaging significantly influences four key consumer psychological variables: Green Perceived Value, Green Attitude, Green Image, and Green Perceived Risk. While perceived value, attitude, and image positively contribute to Green Purchase Intention, perceived risk negatively affects it. Furthermore, these four variables significantly mediate the relationship between Green Packaging and Green Purchase Intention, suggesting that green packaging serves not only as a physical attribute but also as a symbolic element that shapes consumers' evaluations and trust in a product's sustainability. These findings emphasize the importance of communicating sustainability visually and informatively through packaging design. From a managerial perspective, companies, particularly those engaged in eco-friendly product lines, can adopt packaging as an effective marketing strategy by ensuring it is not only environmentally sustainable in terms of materials but also capable of enhancing brand image, perceived value, and fostering positive consumer attitudes. This strategy holds the potential to strengthen consumers' purchase intentions

and long-term engagement with environmentally friendly products. Theoretically, this study offers valuable contributions by elucidating the mediating role of cognitive and emotional mechanisms in shaping consumer behavior. Nevertheless, its theoretical contribution is limited by a focus on perceptual outcomes rather than actual consumer actions, as well as the omission of external contextual factors such as social norms and environmental literacy. Future research should consider integrating these external variables, measuring actual purchasing behavior, and using longitudinal methods to obtain richer, more actionable insights.

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