



Factors Affecting Customer's Purchase Intention of Products with Eco-Friendly Packaging

Toh En Jie¹, Logaiswari Indiran^{1*}, and Wong Mun Wye²

¹Department of Marketing and Entrepreneurship, Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Malaysia.

²School of Business and Management, Genovasi University College, Petaling Jaya, Selangor, Malaysia.

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ABSTRACT

As global environmental concerns intensify, consumer demand for sustainable practices especially in packaging has increased. This study examines the key factors influencing Malaysian consumers' purchase intentions toward products with eco-friendly packaging, guided by the Value-Belief-Norm (VBN) theory. A quantitative approach was used, with data collected from 184 respondents through an online survey. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS. Results show that product characteristics, particularly price and quality, significantly influence consumers' intentions to purchase eco-friendly packaging. However, general environmental concern and a sense of personal responsibility were not significant predictors. Instead, consumer knowledge related to recycling and reuse had a strong positive impact on purchase intentions. In terms of government influence, investment in green initiatives had a significant effect, while the presence of rules and regulations did not. This study contributes to the limited research on green consumer behavior in Malaysia and supports strategies for promoting environmentally responsible consumption. These findings are able to offer practical implications for businesses and policymakers.

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1. INTRODUCTION

In recent years, there has been a significant shift in consumer behavior, largely driven by increasing awareness of environmental issues and a growing commitment to social responsibility. Consumers are becoming more conscious of the ecological impact of their purchasing decisions, particularly regarding packaging materials. As a result, eco-friendly packaging has emerged as a preferred alternative, offering environmental advantages while maintaining functionality comparable to conventional packaging. Traditional packaging methods have been associated with serious environmental challenges, including pollution, depletion of natural resources, and excessive waste generation (Ncube et al., 2021). In contrast, green packaging effectively serves the dual purpose of preserving products and minimizing environmental harm.

The global market for packaging made from recycled materials is projected to reach USD 440.3 billion by 2025. This trend reflects heightened consumer awareness of the negative

effects packaging can have on both human health and the environment (Popović et al., 2020). The global shift toward sustainability has significantly influenced not only individual consumer behavior but also corporate practices. The "going green" movement has gained notable momentum across Asia, including in Malaysia, as consumers adopt more environmentally responsible lifestyles and purchasing habits (Munasinghe & Shantha, 2021). In response, businesses are increasingly embracing green practices particularly sustainable packaging to meet evolving consumer expectations and align with environmental regulations (Das & Sen, 2025).

Green packaging is a vital component of sustainable consumption, playing a key role in reducing ecological impact, especially in the realm of consumer purchasing behavior. This change is largely driven by rising concerns about the health and environmental hazards posed by traditional packaging (Boz et al., 2020). Consequently, consumers are more inclined to support sustainable brands, especially those that adopt eco-

*Corresponding author:

E-mail address: Logaiswari Indiran <logaiswari@utm.my>.

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friendly packaging materials. Environmental concerns have been shown to significantly influence consumers' willingness to purchase green products (Dong & Huang, 2024). In response to these shifting preferences, manufacturers and retailers are increasingly investing in eco-friendly packaging not only to satisfy consumer demand but also to gain a competitive market advantage. Sustainable packaging is recognized for enhancing brand image, reducing long-term costs, and contributing positively to corporate social responsibility. In the fast-moving consumer goods (FMCG) sector, green packaging is an effective way for brands to position themselves as environmentally conscious, which can improve consumer trust and loyalty (Cetinkaya et al., 2011; Sharma et al., 2024). On the other hand, companies that neglect sustainable packaging risk losing market share to competitors who embrace environmentally responsible practices.

The Malaysian government has also taken important steps to promote eco-friendly practices (Wong et al., 2019). Initiatives such as the "No Plastic Bag" campaign, introduced in Selangor and other states, have raised public awareness about plastic pollution and the importance of sustainable packaging (Jamaluddin, 2025). Additionally, the formation of the Ministry of Energy, Green Technology, and Water signifies a strategic effort to integrate green technology into national development agendas (Ministry of Energy, 2017). These policy efforts aim to foster a greener economy and encourage both businesses and individuals to adopt more sustainable practices (Banoo, 2021).

However, despite the advancements in environmental awareness, a significant gap persists between consumer concern and actual green purchasing behavior in Malaysia (Ker Xin et al., 2019). Many businesses continue to prioritize cost-efficiency over environmental responsibility, often opting for cheaper, non-sustainable packaging materials despite rising consumer interest in eco-friendly alternatives (Daramola et al., 2025). Green products are also frequently perceived as prohibitively expensive or accessible only to higher-income groups, reinforcing their image as premium goods (Chen et al., 2024). Affordability remains a key barrier, as many consumers are discouraged from purchasing environmentally friendly options even when they recognize their ecological benefits (Kashif & Rani, 2021). Moreover, the country's plastic waste crisis further intensifies the issue. As one of the world's top importers of plastic waste and a major user of single-use plastics, Malaysia faces persistent difficulties due to inadequate waste management infrastructure, weak enforcement, and limited corporate accountability (Chen et al., 2021).

To address the existing knowledge gap, the present study explores the awareness and purchase intentions of Malaysian consumers toward products with eco-friendly packaging. Although consumers may be guided by ethical and environmental considerations in their purchasing behavior, the lack of adequate exposure to green products and sustainability practices in Malaysia poses a challenge to wider adoption (Rosidah et al., 2024). Therefore, understanding consumer perceptions, knowledge, and behavioral intentions regarding green products is essential for promoting sustainable consumption and informing strategies by companies and policymakers. This study aims to identify the key factors influencing these intentions, including environmental concern, perceived affordability, trust in green products, and the influence of social and governmental initiatives. By examining these variables, the research seeks to offer practical insights that

can assist marketers in developing more effective green product strategies and support government efforts to foster environmentally responsible consumer behavior.

This research is significant both academically and practically. Academically, it contributes to the limited but growing body of literature on green consumer behavior in Malaysia and the broader Southeast Asian context. Practically, the study offers insights for businesses seeking to align their marketing strategies with evolving consumer values related to environmental sustainability. Understanding the factors that influence consumers' purchase intentions toward eco-friendly packaging can help firms enhance brand reputation and competitiveness. Additionally, the findings provide valuable guidance for policymakers in designing targeted educational initiatives and regulatory frameworks that encourage sustainable consumption. Ultimately, the study supports broader environmental conservation efforts by promoting informed consumer choices and responsible corporate behavior.

As environmental sustainability becomes a critical global concern, understanding the underlying factors that drive consumers' intentions to adopt eco-friendly packaging is essential. In the Malaysian context, despite growing environmental awareness, there remains a noticeable gap between consumers' positive attitudes toward sustainability and their actual purchasing behavior. This disconnect suggests that awareness alone may not be sufficient to motivate consistent pro-environmental actions. Therefore, this study aims to bridge the gap between environmental awareness and actual consumer behavior by examining the role of product characteristics, environmental concern, and government involvement in influencing purchase intention. The insights generated from this research may serve as a foundation for future initiatives aimed at promoting sustainable development and responsible consumption at both individual and institutional levels.

2. LITERATURE REVIEW

2.1 Value-Belief-Norm (VBN) Theory

The Value-Belief-Norm (VBN) theory, developed by Stern et al. (1999), explains pro-environmental behavior (PEB) through a causal chain in which personal values shape environmental beliefs, which in turn activate moral norms that guide behavior (Dantas et al., 2023). In this study, the Value-Belief-Norm (VBN) framework links the constructs of Product Characteristics, Environmental Concern, and Government's Role to Purchase Intention for eco-friendly packaging.

Values represent deep-rooted principles that influence how individuals evaluate environmental issues. Product Characteristics such as recyclability, biodegradability, durability, and sustainable design can align with biospheric values by reinforcing the belief that environmentally friendly products reduce ecological harm. When product attributes visibly reflect sustainability, they strengthen awareness of consequences (AC) and foster ascription of responsibility (AR), moving consumers toward a sense of moral obligation.

Beliefs in the Value-Belief-Norm (VBN) chain reflect awareness of environmental consequences and the perceived responsibility to act. Environmental Concern aligns directly with this stage, as individuals with high concern are more likely to recognize the negative impacts of unsustainable consumption

and feel accountable for addressing them. This belief-based awareness increases the likelihood of translating concern into personal moral norms.

Norms are personal moral obligations that drive behavior. Government's Role can reinforce these norms through eco-labeling, incentives, education, and policy measures. Such initiatives legitimize eco-friendly claims, strengthen consumer trust, and bridge the gap between values, beliefs, and actual purchase behavior.

Purchase Intention emerges when eco-friendly product attributes appeal to personal values, environmental beliefs are strong, and supportive external factors bolster moral obligation.

Ultimately, the Value-Belief-Norm (VBN) theory offers a clear and robust framework for understanding how intrinsic values, environmental beliefs, and moral norms interact to shape sustainable purchasing intentions. By linking product characteristics, environmental concern, and government support to the psychological chain from values to norms, VBN highlights the central role of moral obligation in driving eco-conscious choices. This theory not only explains why consumers adopt green packaging but also provides actionable insights for policymakers and businesses aiming to foster environmentally responsible consumption.

3. DEVELOPMENT OF HYPOTHESIS AND RESEARCH FRAMEWORK

3.1 *The Relationship Between Product Characteristics and Customer's Green Packaging Purchase Intention*

Price and quality are key factors influencing consumer satisfaction and purchase intentions for green-packaged products. While many perceive eco-friendly options as costly, some pay a premium for long-term benefits. High quality enhances trust and satisfaction, whereas poor quality and high prices reduce purchase likelihood (Huamán-Pastorelli et al., 2020; Schuitema & De Groot, 2014).

According to Gunawan et al. (2024), consumers in Indonesia associate sustainable packaged food and beverage (F&B) products with price, quality, and appearance. While price significantly influences purchase intention, quality and packaging appearance play crucial roles in attracting attention and enhancing understanding of a product's sustainable value, thereby encouraging purchase. Similarly, Thuong et al. (2024) reported that in Vietnamese cities such as Hanoi, Da Nang, Binh Dinh, and Ho Chi Minh City, both the price and attributes of green products positively influence consumer purchasing decisions. Consumers are more likely to pay a premium when green products meet their needs or offer unique benefits, and when prices are perceived as fair. Moreover, packaging quality further enhances purchase intention by ensuring product protection, aesthetic appeal, and usability. In the Malaysian context, Haque et al. (2020) confirmed that both price and quality significantly influence customers' purchase intentions toward environmentally friendly products, highlighting the importance of these attributes in green product selection.

Within the Value-Belief-Norm framework, affordable and high-quality green-packaged products enhance environmental values, personal norms, and sustainable intentions. In contrast, high costs or poor quality create value dissonance, weakening

motivations. Thus, price and quality influence both direct evaluations and underlying psychological drivers of green purchase intentions. Based on the literature, the following hypotheses are proposed:

Hypothesis 1: There is a significant relationship between product characteristics on customer's green packaging purchase intention.

Hypothesis 1a: There is a significant relationship between price on product characteristics towards customer's green packaging purchase intention.

Hypothesis 1b: There is a positive relationship between quality on product characteristics towards customer's green packaging purchase intention.

3.2 *The Relationship Between Environmental Concern and Customer's Green Packaging Purchase Intention*

Environmental concern reflects an individual's awareness of environmental issues and commitment to preservation, significantly shaping sustainable consumption (Cruz & Manata, 2020; Prieto-Sandoval et al., 2022). Environmentally conscious consumers engage in behaviors like recycling, reusing, and choosing eco-friendly packaging, viewing these actions as personal responsibility (Kumar et al., 2021). Such behaviors, particularly selecting recyclable or reusable packaging, strongly indicate green purchase intentions. Environmental knowledge enhances informed decision-making, while familiarity with sustainability labels and symbols helps identify products aligning with environmental values (Li et al., 2021; Stein et al., 2022). Together, these factors reinforce sustainable purchasing and reduce environmental impact.

Li and Shan (2025) demonstrated that environmental awareness and concern positively influence consumers' intentions to purchase green-packaged organic foods, highlighting the role of perceived personal responsibility. Similarly, Garcia and Campos (2022) found that environmental concern, along with awareness, willingness to pay, and product quality, significantly impacts consumer preferences for eco-friendly packaging. These findings suggest that individuals with higher levels of environmental concern are more likely to support initiatives addressing environmental issues and to purchase products aligned with their environmental values. However, contrasting evidence is presented by Caniol and Martinelli (2021), who found that in the Italian context, environmental concern did not significantly influence personal responsibility toward sustainable retailers or the purchase intention for sustainably packaged goods. This suggests that while environmental concern may be a key motivator in some regions or product categories, its influence may vary depending on cultural, economic, or contextual factors. Lianita et al. (2024) confirmed that environmental concern significantly impacts green purchase intentions, particularly among Generation Z in Indonesia, who are increasingly demanding sustainable packaging solutions. Their study suggests that individuals with greater recycling and reuse knowledge are more likely to consider long-term impacts and make more deliberate purchasing decisions. Likewise, Nguyen et al. (2022) also emphasized that greater consumer education on recycling contributes to increased adoption of environmentally friendly products (Geetha & Kamaraj, 2024). Pambudi et al. (2025) found that green marketing and packaging in Indonesia not only directly influence green purchasing behavior but also indirectly enhance it through increased environmental knowledge.

Initiatives such as educational campaigns and eco-labeling improve consumer understanding and promote environmentally responsible decision-making. However, Geetha and Kamaraj (2024), highlighted that environmental knowledge alone may not guarantee green purchasing behavior, as factors such as social media influence and perceived behavioral control may also shape intentions. Interest in organic products, along with lifestyle perceptions and social status, may motivate higher awareness and preference for eco-friendly options.

Within the Value-Belief-Norm (VBN) model, environmental concern represents the belief component, encompassing problem awareness, anticipated consequences, and perceived personal responsibility. Individuals with strong environmental concern are more likely to develop personal norms that promote green purchasing behavior. Based on the literature, the following hypotheses are proposed:

Hypothesis 2: There is a positive relationship between environmental concern and customer's green packaging purchase intention.

Hypothesis 2a: There is a positive relationship between consumer responsibility and green packaging purchase intention.

Hypothesis 2b: There is a positive relationship between recycling and reuse knowledge and green packaging purchase intention.

Hypothesis 2c: There is a positive relationship between environmental knowledge and green packaging purchase intent

3.3 The Relationship Between Government's Role and Customer's Green Packaging Purchase Intention

The government is pivotal in promoting green packaging through regulation, investment, and advocacy. Initiatives such as subsidies for green technologies, research funding, and environmental education reduce production costs and enhance eco-friendly packaging viability (Al-Minhas et al., 2020). Educational programs and public campaigns foster long-term environmental awareness (Tian et al., 2024). Regulatory measures, including mandates for biodegradable or recyclable materials, drive industry compliance, incentivize sustainable practices, and enforce waste policies. These actions enhance brand perception, encourage pro-environmental behavior (Doan & Nguyen, 2024; Ling & Halabi, 2024), and, by combining economic, educational, and legal strategies, significantly shape consumer attitudes and accelerate sustainability transitions.

Empirical evidence supports these assertions. Sun et al. (2020) reported that in Taiwan, government incentives especially those related to cost savings and environmental protection had a strong influence on the intention to adopt rooftop photovoltaic systems, highlighting the impact of financial incentives and policy support. Similarly, Aliedan et al. (2025) found that among agriculture and food science incentives in Egypt, a strong commitment to green consumption positively influenced intentions toward green investments, demonstrating that environmentally conscious individuals tend to promote and prefer green products and services.

Although Munasinghe and Shanta (2021) did not find a direct relationship between government involvement and its role in green purchase intention, they identified a significant effect on consumer perceptions of green packaging. This

suggests that governmental actions may indirectly influence behavior by shaping environmental attitudes. In contrast, Kashif and Rani (2021) demonstrated a positive relationship between government-led green marketing initiatives and consumers' green purchase intentions. Campaigns and regulatory support help foster public trust and motivate producers to adopt sustainable packaging practices. Dummett (2006) also emphasized that government regulations exert a powerful influence on business attitudes and ecological behavior.

Within the framework of the Value-Belief-Norm (VBN) theory, the government's role functions as an external contextual factor that enhances environmental beliefs and strengthens personal norms. Initiatives such as rule-making, eco-labeling, and investments in recycling infrastructure help legitimize and facilitate pro-environmental actions. These policies reinforce the connection between individual behavior and broader societal values, motivating consumers to align their purchasing decisions with environmental responsibility. Based on the reviewed literature, the following hypotheses are proposed:

Hypothesis 3: There is a significant relationship between government's role and customer's green packaging purchase intention.

Hypothesis 3a: There is a significant relationship between investment on government's role and customer's green packaging purchase intention.

Hypothesis 3b: There is a significant relationship between establishing rules & regulations on government's role and customer's green packaging purchase intention

Figure 1 presents the research framework developed for this study, which investigates the relationships between the different variables including product characteristics, environmental concern, and government's role and customers' green packaging purchase intention.

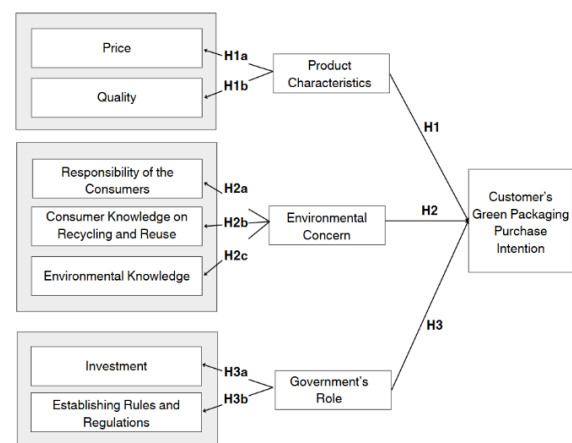


Fig. 1. Research Framework

4. METHODOLOGY

4.1 Research Design

This study employed a quantitative research design to investigate the factors influencing consumers' purchase intentions toward eco-friendly packaging. Data were collected

through a structured, self-administered online questionnaire using Google Forms. The survey link was disseminated via popular social media platforms, including WhatsApp, Telegram, and Facebook, enabling broad and rapid reach to individuals potentially familiar with or interested in eco-friendly packaging. All questionnaire items were measured using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), a commonly used scale in social science research for gauging attitudes and perceptions.

4.2 Population and Sampling

The target population comprised Malaysian citizens aged 18 to 45 years, a demographic identified as frequent consumers of fast-moving consumer goods (FMCG) and potentially more aware of environmental issues. Convenience sampling was selected due to its practicality in exploratory research and effectiveness in reaching targeted respondents efficiently (Mweshi & Sakyi, 2020). However, this approach carries a risk of bias because respondents are not randomly selected. Consequently, certain segments of the population may be overrepresented or underrepresented. The minimum required sample size was calculated using G*Power 3.1.9.7 software. Based on an effect size of 0.15, a significance level (α) of 0.05, a statistical power of 0.80, and four predictors, the required sample size was 85 (Kang, 2021; Memon et al., 2020). In total, 182 valid responses were collected, exceeding the minimum requirement and thereby strengthening the reliability of the results (Hair et al., 2017).

4.3 Research Instrument

The primary research employed a structured questionnaire with five sections aligned to its objectives. Section one gathered demographic data (age, gender, education, income) from prior studies (Gan et al., 2014; Munasinghe & Shantha, 2021). Section two examined product characteristics by price and quality influencing eco-friendly packaging purchase intentions (Munasinghe & Shantha, 2021). Section three measured environmental concerns, including knowledge, awareness, personal responsibility, and recycling behavior (Junior et al., 2014; Paul et al., 2016; Munasinghe & Shantha 2021). Section four assessed government influence through investment and regulation. Section five captured purchase intentions using validated scales (Junior et al., 2014; Paul et al., 2016).

4.4 Ethical Practice

Ethical approval for this study was granted by the institutional research ethics review board, ensuring compliance with established ethical standards. Ethical guidelines were followed throughout data collection, analysis, and reporting to ensure transparency, minimize bias, and safeguard the privacy and trust of all participant Participation was entirely voluntary, and informed consent was obtained from all respondents before survey commencement. Confidentiality and privacy were rigorously maintained; preserving anonymity, while responses were aggregated to maintain confidentiality. Data were securely stored to prevent unauthorized access. These measures aligned with best practices for protecting participants and maintaining research integrity.

5. DATA ANALYSIS

Data analysis was conducted using SmartPLS software through Partial Least Squares Structural Equation Modeling

(PLS-SEM). This method was employed to assess both the measurement model ensuring reliability and validity and the structural model testing hypotheses and examining relationships among variables.

5.1 Demographic Profile of Respondents

A total of 182 valid responses were analyzed from individuals who had previously purchased products with eco-friendly packaging (see Table 1).

The majority of respondents were female (59.9%), while males comprised 40.1%, indicating a female-dominated sample. In terms of income, the largest group of respondents earned between RM 2001 and RM 4000 (46.7%), followed by those earning RM 2000 and below (30.2%). A smaller proportion earned between RM 4001 and RM 6000 (15.4%), while only 7.7% earned RM 6001 and above. These figures suggest that most participants belong to the lower-to-middle income bracket. Regarding educational background, the majority held a Bachelor's degree (67.6%). This was followed by respondents with a diploma, certificate, STPM, foundation, or A-level qualifications (25.3%). A smaller percentage held a Master's degree or PhD (4.9%), and only 2.2% had an education level of SPM or below. These results indicate a highly educated sample, with most respondents having attained tertiary education

Table 1. Demographic Profile of Respondents

Categories	Frequency (F)	Percentage (%)
Gender		
Male	73	40.1%
Female	109	59.9%
Income		
RM 2000 and below	55	30.2%
RM 2001- RM 4000	85	46.7%
RM 4001- RM 6000	28	15.4%
RM 6001 and above	14	7.7%
Education		
SPM and below	4	2.2%
Diploma/ Certificate/ STPM/ Foundation/ A-Levels	46	25.3%
Bachelor's Degree	123	67.6%
Master's Degree/PhD	9	4.9%

6. RESULTS

6.1 Reliability and Validity

Reliability (see Table 2) was evaluated using Cronbach's Alpha, with all constructs exceeding the 0.70 threshold, confirming the stability and internal consistency of the scales (Hair et al., 2010). Composite Reliability (CR) values for all variables also surpassed the 0.70 benchmark, further supporting strong internal consistency. Convergent validity (see Table 2) was examined through factor loadings and Average Variance Extracted (AVE), with all constructs achieving AVE values above the 0.50 minimum requirement, indicating that the items effectively measured their intended constructs. Overall, these results show excellent reliability and convergent validity, thereby ensuring the robustness of the study's findings.

Table 2. Reliability and Convergent Validity Test Results

Variable	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Price	0.754	0.853	0.624
Quality	0.898	0.924	0.754
Responsibility of the Consumers	0.807	0.874	0.634
Recycling and Reuse Levels for Consumers	0.827	0.885	0.659
Environmental Knowledge	0.836	0.891	0.671
Investment	0.845	0.895	0.682
Establishing Rules and Regulations	0.899	0.930	0.770
Purchase Intention	0.778	0.856	0.599

The discriminant validity study was assessed using both the Heterotrait-Monotrait Ratio (HTMT) (see Table 3) and Fornell-Larcker Criterion (see Table 4). All Heterotrait-Monotrait Ratio (HTMT) values were below 0.90 (Hair et al., 2014), thus confirming strong discriminant validity. Additionally, the Fornell-Larcker analysis confirmed that the square root of each construct's Average Variance Extracted (AVE) exceeded its correlations with other constructs, meeting the threshold of 0.50 (Fornell & Larcker, 1981). These findings collectively demonstrate that the constructs used in this study are empirically distinct from one another.

Table 3. Heterotrait-Monotrait Ratio (HTMT) Validity Test

Variable	EK	ERR	I	P	PI	Q	RC	RR
EK								
ERR	0.844							
I	0.844	0.807						
P	0.715	0.713	0.588					
PI	0.411	0.390	0.354	0.463				
Q	0.112	0.087	0.218	0.089	0.231			
RC	0.624	0.536	0.631	0.460	0.614	0.245		
RR	0.505	0.435	0.525	0.378	0.889	0.169	0.728	

Table 4. Fornell-Larcker Criterion Validity Test

Variable	EK	ERR	I	P	PI	Q	RC	RR
EK	0.819							
ERR	0.728	0.877						
I	0.719	0.705	0.826					
P	0.588	0.604	0.495	0.790				
PI	0.347	0.339	0.315	0.371	0.774			
Q	0.094	0.034	0.203	0.050	0.221	0.868		
RC	0.514	0.459	0.531	0.360	0.500	0.238	0.796	
RR	0.427	0.380	0.444	0.311	0.717	0.170	0.593	0.812

6.2 Collinearity Analysis, Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

The analysis confirmed no multicollinearity, as all VIF values were below the threshold of 5, ensuring reliable model estimates. The coefficient of determination (R^2) for Purchase Intention was 0.504, indicating that 50.4% of the variance is explained by the model's predictors, reflecting moderate

explanatory power. The predictive relevance (Q^2) value was 0.312, which is above zero, suggesting the model has strong predictive capability.

Overall, the structural model is both reliable and predictive, with recycling and reuse identified as the most significant factor influencing consumers' intentions to purchase products with eco-friendly packaging. This underscores the importance of practical environmental behaviors.

6.3 Hypothesis Testing

Hypothesis testing (see Table 5) was performed using path coefficient analysis to examine the relationships between the proposed variables. For product characteristics, H1a (price) was supported ($\beta = 0.189$, $t = 3.169$, $p = .002$), indicating that price positively influences consumers' intentions to purchase eco-friendly packaging. Similarly, H1b (quality) was supported ($\beta = 0.117$, $t = 2.020$, $p = .043$), suggesting that product quality also plays a significant role. Under environmental concern, H2a (consumer responsibility) was not supported ($\beta = 0.090$, $t = 1.032$, $p = .302$), and H2c (environmental knowledge) was also not supported ($\beta = -0.037$, $t = 0.399$, $p = .690$), indicating no significant effects. However, H2b (recycling and reuse knowledge) was strongly supported ($\beta = 0.649$, $t = 6.028$, $p < .001$), demonstrating a substantial positive influence. Regarding the government's role, H3a (investment in green initiatives) was supported ($\beta = 0.177$, $t = 2.416$, $p = .016$), while H3b (rules and regulations) was not supported ($\beta = 0.078$, $t = 0.868$, $p = .386$).

Overall, the findings highlight that specific factors especially consumer knowledge on recycling and reuse have a significant impact on green purchase intentions, whereas general environmental awareness and regulatory measures show limited influence.

Table 5. Path Coefficient Test Results

Relationship	Path Coefficient	t-value	p-value	Results
H1a: P -> PI	0.189	3.169	0.002	Supported
H1b: Q -> PI	0.117	2.020	0.043	Supported
H2a: RC -> PI	0.090	1.032	0.302	Not Supported
H2: RR -> PI	0.649	6.028	0.001	Supported
H2c: EK -> PI	-0.037	0.399	0.690	Not Supported
H3a: I -> PI	0.177	2.416	0.016	Supported
H3b: ERR -> PI	0.078	0.868	0.386	Not Supported

7. DISCUSSIONS

For product characteristics, both price (H1a) and quality (H1b) were found to significantly influence purchase intentions. Consumers tend to favor green packaging when it is affordably priced, demonstrating sensitivity to economic value. At the same time, quality both in terms of functionality and visual appeal plays a decisive role in fostering confidence and encouraging sustainable purchasing behavior. These results are consistent with prior research by Gunawan et al. (2024), who identified price and quality as key factors influencing green packaging preferences among Indonesian food and beverage consumers. Similarly, Thuong et al. (2024) noted that

Vietnamese consumers place high value on fair pricing and tangible product benefits, while Haque et al. (2020) confirmed the relevance of these attributes among Malaysian eco-conscious consumer. Thus, H1a and H1b are supported.

With regard to environmental concern, consumer responsibility (H2a) was not found to significantly influence purchase intention. This implies that a general sense of environmental duty alone does not necessarily lead to eco-conscious purchasing. This outcome aligns with Caniol and Martinelli (2021), who reported that environmental concern did not significantly impact consumers' sense of personal responsibility or influence sustainable purchasing in the Italian context. It suggests that concern does not always translate into actionable behavior. In contrast, recycling and reuse knowledge (H2b) demonstrated a significant positive influence on purchase intention, affirming that practical knowledge is a key driver of sustainable behavior. This finding is in line with Nguyen et al. (2022), who observed that targeted consumer education on recycling practices increases the likelihood of adopting environmentally friendly products. Accordingly, policymakers and businesses should implement educational initiatives aimed at improving consumers' recycling literacy to support more intentional and informed green purchasing. However, general environmental knowledge (H2c) did not significantly affect green purchase intentions. While awareness of environmental issues is necessary, it appears insufficient to drive behavioral change without actionable support. This echoes the findings of Pavithra and Gayathri (2023), who emphasized that environmental awareness must be complemented by social influence, access to green products, and perceived behavioral control to be effective. Thus, Hypothesis H2b is supported, whereas H2a and H2c are not supported.

In terms of the government's role, government investment government investment (H3a) has a significant positive effect on consumer intention to purchase green packaging. Financial support mechanisms, such as subsidies and funding for sustainable businesses, appear effective in enhancing the visibility and accessibility of eco-friendly options. This supports previous research by Sun et al. (2020), who demonstrated that government incentives in Taiwan positively influenced the adoption of green energy technologies. Similarly, Aliedan et al. (2025) highlighted the importance of government commitment in encouraging green investment behavior among agricultural graduates in Egypt. Conversely, government regulations (H3b) did not show a significant direct impact. Although regulations are crucial for promoting long-term sustainability, they may not directly shape consumer behavior unless paired with supportive communication and engagement strategies. Munasinghe and Shantha (2021) also noted that while regulatory frameworks are influential at a policy level, their effect on individual purchasing intentions is limited. Thus, Hypothesis H3a is supported, while H3b is not supported.

8. RECOMMENDATIONS

Based on the study's findings, several recommendations were proposed to enhance the adoption of eco-friendly packaging among Malaysian consumers.

8.1 Recommendations for Businesses

First, affordability and quality should be prioritized. Firms are encouraged to develop eco-friendly packaging that balances competitive pricing with functional and aesthetic quality, as affordability has been shown to significantly influence green product adoption. Competitive prices will appeal to cost-conscious consumers, while superior quality can foster trust and long-term brand loyalty.

Second, tangible product benefits must be highlighted in marketing strategies. Research indicates that consumers are more likely to adopt sustainable products when the functional and experiential value is clear. Businesses should emphasize durability, usability, and visual appeal in their communications.

Third, consumer education should be embedded within branding strategies. For instance, packaging labels, QR codes, and social media content can provide recycling and reuse guidance, empowering consumers to make informed decisions.

8.2 Recommendations for Policymakers

The government should expand investment incentives such as subsidies, grants, and tax reductions for companies producing eco-friendly packaging. Financial incentives can reduce production costs and encourage broader industry participation.

Moreover, regulations should be complemented by public engagement initiatives. Although policy measures can mandate compliance, their effectiveness is strengthened when combined with awareness campaigns, recycling workshops, and community-led environmental programs.

Finally, targeted sustainability education is crucial. National campaigns should move beyond general environmental awareness to equip citizens with actionable recycling and reuse skills, closing the gap between intention and behavior.

Thus, by implementing these measures, both business and government stakeholders can play a synergistic role in increasing consumer acceptance of eco-friendly packaging, thereby advancing Malaysia's sustainability agenda.

9. LIMITATION

This study encountered several limitations that may impact the generalizability of its findings. A primary limitation was the low level of participation in the online survey, which resulted in a small and less diverse sample. This constraint limited the ability to capture a broad range of consumer behaviors and preferences, potentially introducing bias into the results. Furthermore, because the data collection relied on self-reported measures, there is a risk of social desirability bias, where respondents may have provided answers, they perceived as socially acceptable rather than their true opinions or behaviors. Another limitation was the study's focus on Malaysia, which restricts the applicability of the findings to other cultural or regional contexts. Differences in cultural values, economic conditions, and environmental awareness across countries may influence consumer attitudes toward eco-friendly packaging.

To address these limitations, future research should adopt more engaging strategies to boost survey participation and sample diversity. Offering incentives, such as eco-friendly gifts, and employing both online and offline distribution

methods, including QR codes and social media campaigns, can improve response rates. Expanding the geographical scope to include participants from different countries would enable cross-cultural comparisons and enhance the generalizability of the results. Additionally, future studies should explore other influencing factors such as social norms, media influence, and brand trust to provide a more comprehensive understanding of eco-friendly purchasing behavior. Addressing these areas can lead to more effective strategies for promoting sustainable consumer choices globally.

10. CONCLUSION

This study examined the factors influencing Malaysian consumers' intentions to purchase products with eco-friendly packaging using the Value-Belief-Norm (VBN) theory. Key findings show that price, product quality, and recycling knowledge significantly drive purchase intentions, while general environmental concern and personal responsibility do not. Government investment positively influences behavior, whereas regulations alone are less effective. The study provides valuable guidance for businesses and policymakers to develop strategies that enhance public education, support green initiatives, and align marketing with eco-conscious values. Overall, it contributes to promoting sustainable consumer behavior and advancing environmental sustainability in Malaysia.

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