

# Impact of Green Marketing Elements on Consumers: A Behavioral Approach

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## Abstract

This research examines the factors influencing green purchasing behavior in the Vietnamese market, utilizing the Theory of Planned Behavior (TPB) as its foundation. Utilizing an online questionnaire survey of 596 Vietnamese consumers from December 2023 to February 2024, the research examines the influence of key factors, including green advertising, awareness of green products, environmental awareness, subjective norms, attitude toward green products, and green pricing on consumer purchase intentions and behaviors. The research utilized the technical of Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine and confirm the proposed hypotheses. The findings reveal that the most influential factor on consumer purchase intentions and behaviors is the attitude toward green products, highlighting the crucial role of consumer perceptions and values regarding environmentally friendly products. Furthermore, green advertising and awareness of green products also play a vital role in shaping consumer intentions. While subjective norms and green pricing also show an influence, they have a lesser impact. This study contributes both theoretically and practically by offering valuable insights for marketers and policymakers designing effective green marketing strategies that enhance consumer engagement and encourage the adoption of environmentally friendly products in Vietnam.

## Keywords:

Green Marketing Strategies;  
Consumer Behavior;  
Vietnamese Market;  
Green Purchasing.

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## 1- Introduction

Green marketing has become a key global strategy to meet the growing demand for sustainable and eco-friendly products [1, 2]. Consumer awareness of environmental issues has increased significantly, with more than 70% of global consumers willing to pay a premium for sustainable products [3, 4]. This trend has motivated businesses to apply green marketing strategies to maintain competition and increase customer support. Green marketing, which focuses on minimizing environmental impact and meeting consumer demands for eco-friendly products, has become a critical component of modern business strategies. Businesses that apply green marketing improve their brand image and gain a sustainable competitive advantage by attracting and retaining environmentally conscious customers [5-7].

In recent years, consumer behavior towards green products has gained significant attention in both academic research and practical applications, reflecting the growing awareness of environmental sustainability. Numerous studies have

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explored the determinants of green consumption, including subjective norms [8, 9], attitudes [10], and perceived behavioral control [11]. Social factors, such as the influence of peer groups and social norms, have been consistently identified as crucial drivers of sustainable consumption behavior. Additionally, green advertising has emerged as an essential factor influencing consumer attitudes and behaviors, with studies examining various types of advertising appeals, including emotional and factual claims [12, 13].

However, despite the increasing adoption of green marketing worldwide, previous studies have explored the effectiveness of green marketing in influencing consumer behavior [14, 15] and the impact of green advertising and product labeling on consumer purchase intentions [12]. Additionally, some research has addressed challenges businesses face when implementing green marketing strategies [5, 15].

Large enterprises like Vinamilk and T.H. True Milk have already pioneered green marketing initiatives [8, 10, 13, 16] in Vietnam. With its robust economic growth, expanding middle class, and rising consumer consciousness about ecological issues, Vietnam offers fertile ground for implementing green marketing strategies. According to Doanh et al. (2021) [17], 85% of Vietnamese consumers know the importance of environmentally friendly products, and 70% are willing to pay more. This creates excellent opportunities for businesses in Vietnam to apply green marketing strategies to attract and maintain customers. Nevertheless, limited research has explored the distinct components of green marketing strategies and their impact on consumer behavior in Vietnam. Addressing this research gap requires a deeper examination of how green marketing operates within the country's evolving economic and social landscape.

This study seeks to explore and evaluate the elements of green marketing strategies that affect consumer behavior in the Vietnamese market. The study will explore how green marketing influences consumers' purchase intentions and behaviors toward green products. This research aims to explore the following key questions: (i) In what ways do green advertising, consumer awareness of eco-friendly products, attitudes toward sustainability, subjective norms, environmental consciousness, and pricing influence the purchasing decisions of Vietnamese consumers? (ii) Among these factors, which plays the most significant role in shaping consumer intentions and behaviors regarding green products in Vietnam? (iii) How can business leaders and marketers craft impactful green marketing strategies to improve consumer awareness, perceptions, and purchasing intentions toward environmentally friendly products in Vietnam? These inquiries aim to clarify the interplay between green marketing and consumer behavior, offering both theoretical insights and practical guidelines for businesses to implement sustainable marketing strategies effectively in the Vietnamese market.

The structure of this research is as follows: Section 2 provides an overview of the relevant literature and theoretical foundation. Section 3 outlines the approach used for the research methodology, covering data collection and analytical techniques. Section 4 showcases the results and offers an in-depth discussion of the findings. Lastly, Section 5 wraps up the study by highlighting the main findings, addressing limitations, and outlining practical and theoretical implications.

## **2- Review of Relevant Literature**

### ***2-1-Definition of Green Marketing***

In the context of increasing environmental awareness, sustainable marketing, also known as green marketing, is increasingly receiving scholarly research attention. Green marketing is all business strategies that aim to minimize negative environmental impacts, including activities to develop, promote, and distribute environmentally friendly products [1, 5, 18]. In particular, green marketing includes four main components. First, green products are designed using recycled materials and sustainable production processes to minimize environmental negative impacts [5]. Second, green price is a pricing policy that reflects the actual cost of the produced product, including environmental and social costs [7]. Third, green advertising is a communication activity that raises consumer awareness about green products and services and encourages sustainable consumption behavior [19]. Fourth, green distribution is a product distribution activity that minimizes carbon emissions, and the transportation process is optimized to reduce negative environmental impacts [18].

### ***2-2-Green Consumer Behavior***

Green consumer behavior or sustainable consumption is understood as consumers buying and using sustainable products to minimize negative impacts on the environment [9, 18]. Green consumer behavior includes many components. The first component is environmental awareness [9]. This is the level of consumer understanding of environmental issues and the impact of consumer behavior on the environment [2]. The second component is an attitude towards green products, related to consumers' awareness and evaluation of environmentally friendly products with little negative environmental impact [20]. The third component is green purchase intention, which represents consumers' purchase willingness and consume green and environmentally friendly products [21]. The fourth component is social pressure, which refers to the influence of family members, friends, and society on consumers' purchasing decisions [22].

### 2-3- Ground Theories

The study of green marketing and green consumer behavior often relies on several fundamental theoretical frameworks, which guide the understanding of consumer decision-making processes and marketing strategies.

Ajzen's (1991) [23] The Theory of Planned Behavior (TPB) stands as one of the most widely recognized theoretical frameworks. The TPB asserts that an individual's actions are driven by their intentions, which are shaped by three primary factors: their attitude toward the behavior (personal perception of its desirability), subjective norms (the influence of societal expectations and peer pressure), and perceived behavioral control (the extent to which they believe they can successfully perform the behavior). In the context of green marketing, TPB has been expanded to incorporate additional factors such as environmental awareness and corporate support [1, 18]. Ajzen's TPB proposes that individuals are more inclined to develop an intention to engage in a specific behavior if they hold a favorable attitude toward it, perceive societal expectations encouraging the behavior, and believe they can carry it out. These three components - attitude, subjective norms, and perceived behavioral control - collectively influence the formation of behavioral intentions [23]. This intention, in turn, leads to the actual behavior. In green marketing, this model helps understand how consumers' attitudes towards environmentally friendly products, societal influence, and perceived ability to make green choices contribute to their purchasing intentions and behaviors. The application of TPB in green marketing research helps explain how consumers' positive attitudes toward eco-friendly products, combined with social pressure and the perceived capability to make sustainable choices, lead to the formation of purchase intentions and actual green purchasing behavior [23]. Furthermore, studies have demonstrated that heightened environmental awareness and perceived corporate responsibility positively influence both attitudes and behavioral intentions, thereby enhancing green consumer behavior [24-26].

Another critical framework in this domain is Kotler's Marketing Mix Model (4Ps). His model, commonly known as the 4 Ps (Product, Price, Place, and Promotion) or the Marketing Mix acts as a fundamental model for marketing professionals to develop effective marketing strategies [27]. In the green marketing context, this model highlights the importance of offering environmentally sustainable products at competitive prices, ensuring their availability in eco-friendly packaging, and promoting green values effectively. Applying Kotler's model to green marketing strategies requires integrating sustainability principles into each element of the marketing mix to foster consumer loyalty and satisfaction [27]. Kotler's insights have been instrumental in shaping contemporary marketing practices, making his model a cornerstone of marketing education and practice.

Additionally, the integrated model proposed by Leonidou et al. (2013) [15] integrates elements of green marketing and consumer behavior into a comprehensive model. This model emphasizes four components such as green product attitude, green product awareness, green purchase intention, and green consumer behavior. It demonstrates how awareness and favorable attitudes towards green products can translate into strong purchase intentions and sustainable consumer behaviors [15]. This theoretical framework is instrumental in identifying key variables that impact the adoption of green products and can guide marketers in designing interventions to influence consumer choices effectively.

### 2-4- Research Model and Hypotheses

In this paper, the conceptual framework is built upon the synthesis of these theoretical foundations, particularly the TPB, Kotler's, and Leonidou et al.'s integrated model [15]. By combining insights from both models, the research aims to investigate the determinants of green consumer behavior in Vietnam, focusing on factors such as green advertising, attitude toward green products, awareness of green products, environmental awareness, subjective norms, and green pricing. The study's unique contribution lies in contextualizing these theories to the Vietnamese market, where socioeconomic and cultural factors distinctly shape consumer responses to green marketing strategies.

According to Joshi & Rahman (2015) [28]; Zameer & Yasmeen (2022) [29], consumers are likely to develop positive attitudes toward green products when they know the environmental attributes and advantages associated with them. This awareness plays a critical role in influencing consumer perceptions towards green products [30]. This knowledge significantly influences consumer perceptions of green products, as it equips them with essential information to make well-informed purchasing choices, reducing uncertainty and increasing trust in the product. When consumers recognize that a product contributes to environmental sustainability, they are more likely to perceive it as superior or more valuable than non-green alternatives, fostering a positive attitude. Similarly, Zameer & Yasmeen (2022) [29] highlights that awareness of a product's environmental benefits significantly impacts consumer attitudes and purchasing decisions. When consumers are aware that a product is environmentally friendly, they are more likely to support it because it aligns with their values and ethical considerations. This alignment between personal values and product attributes enhances the perceived attractiveness of the product, leading to more positive attitudes and a higher likelihood of purchase.

*Hypothesis H1: Awareness of green products positively impacts attitudes toward green products.*

The TPB [23] indicates that a favorable perception of a behavior frequently results in the intention to engage in it. According to this theory, The decision to engage in a particular behavior is shaped by three key elements: an individual's attitude toward the behavior, societal influences or subjective norms, and their perceived ability to act. When applied to

green products, a favorable perception of green products enhances the probability that consumers will develop the intention to buy them. This is evidenced by the research of Tan et al. (2017) [2], which shows a favorable outlook on green products strengthens consumers' willingness to buy them. Research by Ogiemwonyi (2024) [31]; Parashar et al. (2023) [32] also supports these findings, demonstrating a similar connection between consumers' attitudes and their intention to buy green products. Due to the above arguments, hypothesis 2 is stated.

*Hypothesis H2: Attitude towards green products positively impacts green purchase intention.*

Influences from family members, friends, and the community can significantly affect consumers' purchasing intentions [9, 33]. Subjective norms, including the opinions and behaviors of close social circles, play a vital influence on consumers' purchasing intentions [2]. This includes green products, where the encouragement and expectations from others can drive individuals to make environmentally friendly choices. Similarly, Mancha & Yoder (2015) [34] emphasizes the importance of social pressure in shaping green purchasing intentions. Consumers are likely to be influenced by the attitudes and behaviors of those around them, leading to a greater likelihood of buying environmentally friendly products to conform to social norms and expectations. From there, hypothesis 3 is determined.

*Hypothesis H3: Subjective norms positively impact green purchase intention.*

Consumers are more inclined to develop the intention to buy eco-friendly products when they have a clear understanding of the environmental benefits associated with these products [35, 36]. Heightened awareness of the positive environmental impact of green products significantly enhances consumers' willingness to buy them [2]. When consumers understand that their buying choices can support environmental sustainability, they become more likely to opt for eco-friendly products. Similarly, Newton et al., (2015) [6]; Ogiemwonyi et al., (2023) [37] emphasize that the perception of environmental benefits is a crucial factor influencing green purchase intention. When consumers perceive that a product offers substantial ecological advantages, such as reducing pollution or conserving resources, their intention to purchase that product increases. From there, there is hypothesis 4 as follows.

*Hypothesis H4: Awareness of the environment positively impacts green purchase intention.*

According to the TPB [23], purchase behavioral intention is a key factor that drives actual purchasing behavior. This theory suggests that a person's intention to engage in a behavior is shaped by their attitude toward it, societal influences, and their perceived ability to carry it out. In the context of green products, a strong willingness to purchase eco-friendly products will likely result in actual green purchasing behavior [33, 38] support this notion by demonstrating that green consumption behavior is directly determined by the willingness to purchase eco-friendly products. Consumers are more likely to follow through with actual purchases when they strongly intend to buy environmentally friendly products. Similarly, the intention to engage in green purchasing, influenced by factors such as awareness of environmental issues and belief in personal impact as a consumer, leads to actual green buying decisions [9, 38].

*Hypothesis H5: Green purchase intention positively impacts green consumption behavior.*

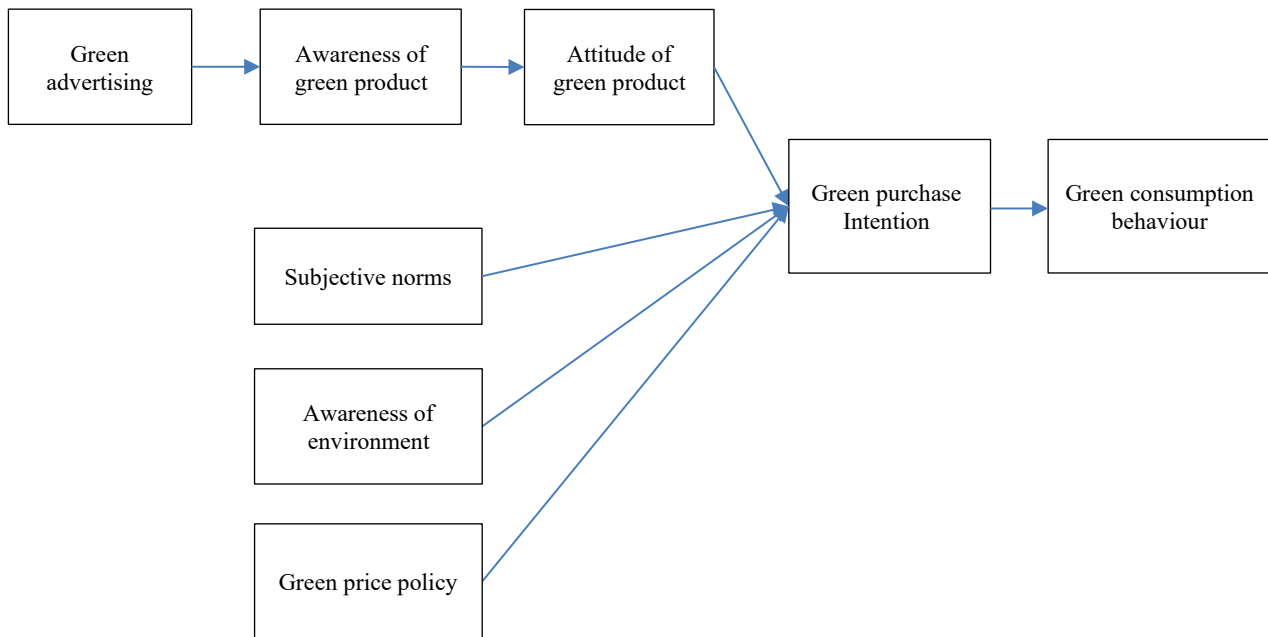
If the price of a product fully accounts for environmental costs, it can significantly boost consumers' purchasing intentions [24, 31, 39]. When the price of a product reflects its true environmental impact, consumers are more likely to perceive the product as valuable and align their purchasing decisions with their ecological values. This transparency in pricing can enhance consumers' trust and readiness to spend extra on products that contribute to environmental sustainability. Lavuri (2022) [40] further support this by showing that consumer buying choices are strongly influenced by price. Price is a critical factor during the process of making decisions. When consumers perceive that the price of a product is justified by its benefits, including environmental benefits, they are more likely to make a purchase [25].

*Hypothesis H6: Green price policy positively impacts green purchase intention.*

Consumer awareness and understanding of green products and services can be significantly enhanced through practical advertising activities. Advertising is crucial in educating consumers about the benefits and features of green products [12, 24]. By providing clear, engaging, and informative messages, advertising can help consumers better understand how green products contribute to environmental sustainability, ultimately influencing their purchasing decisions. Shehawy & Ali Khan (2024) [3]; Santhoshkumar & Kousalyadevi (2022) [41] support this view, emphasizing that green advertising can effectively increase awareness of environmentally friendly products. When consumers are exposed to advertisements highlighting the advantages for the environment and sustainability of green products, their understanding and knowledge about these products improve. This increased awareness can result in a stronger inclination to buy eco-friendly products as consumers become more informed about their positive impact on the environment [13]. From there, there is hypothesis 7.

*Hypothesis H7: Green advertising positively impacts awareness of green products.*

The proposed research model will test the relationship between elements of green marketing strategy and green consumption behavior through latent variables such as awareness of green products, attitude towards green products, application of social motivation, awareness of environmental benefits, green purchase intention, and green consumer behavior (Figure 1).



**Figure 1. Conceptual model**

### 3- Study Methodology

#### 3-1-Approach to Gathering Data

This study employed an online questionnaire survey via the Google Forms platform to gather data from July 2024 to August 2024. The questionnaire was disseminated through social media groups and community networks to ensure a diverse and representative sample. Participants were offered a small incentive to encourage their participation and completion of the survey. A total of 596 valid responses were collected. Ethical approval was obtained from the research committee of the VNU University of Economics and Business (VNU-UEB). The online survey method was chosen for its advantage in reaching a large audience and reducing costs, as supported by Wright (2005) [42]. All collected information was used exclusively for research purposes, and participant data was kept confidential, adhering to the principles outlined by Dillman et al. (2014) [43].

#### 3-2-Survey Structure

The survey was divided into three key sections: (i) an introduction outlining the research objectives and guaranteeing information security; (ii) a section collecting personal information such as occupation, age, gender, and income; and (iii) the main content section with questions related to the latent variables in the research model, including subjective norms, awareness of green products, attitudes toward green products, awareness of environmental benefits, green purchase intention, and green consumer behavior. Each item was measured using a 5-point Likert scale to evaluate the respondent's degree of agreement with related statements, following the methodology of Likert (1932) [44]. Table 1 provides detailed information on the variables, measurement items, and explanations, along with their corresponding reference sources.

**Table 1. Definitions, Measurement Items, and Descriptions Utilized in the PLS-SEM Analysis**

Latent variable	Coding	Explanation	Reference source
Awareness of green products	AGP1	I am aware that green products are beneficial to the environment.	Joshi et al. (2021); Maniatis (2016); Ritter et al. (2015) [14, 39, 45]
	AGP2	I know about the environmentally friendly features of green products.	
	AGP3	Green products help reduce environmental pollution.	
	AGP4	I am aware of the concept of "green products."	
Attitude toward green products	ATT1	I hold a favorable perspective on green products.	Shehawy & Ali Khan (2024); Tan et al. (2017) [2, 3]
	ATT2	Using green products is necessary.	
	ATT3	I perceive green products as high-quality.	
	ATT4	I hold a positive perspective on using green products.	

Subjective norm	SNO1	My family encourages me to use green products.	Nascimento & Loureiro (2024); Tan et al. (2017); Taufique & Vaithianathan (2018) [2, 9, 22]
	SNO2	My friends support the use of green products.	
	SNO3	My neighbors think I should use environmentally friendly products.	
	SNO4	My co-workers expects me to use green products.	
Awareness of environment	AEN1	Using green products helps protect the environment.	de Medeiros & Ribeiro (2017); Newton et al. (2015); Ogiemwonyi et al. (2023) [6, 36, 37, 46]
	AEN2	Green products help minimize negative impacts on the environment.	
	AEN3	Green products can contribute to a cleaner environment.	
Intention to purchase green products	INT1	I intend to buy green products shortly.	Jaiswal & Kant (2018); Junior et al. (2015); Liang et al. (2024); Zaremohzzabieh et al. (2021) [33, 47-49]
	INT2	I will prioritize buying green products over conventional products.	
	INT3	I plan to switch to using green products.	
	INT4	I would be willing to sign a petition to support an environmental cause.	
Green consumption behavior	BEH1	I frequently buy green products.	Taufique & Vaithianathan, (2018b); Shehawy & Ali Khan (2024) [3, 9]
	BEH2	I always seek information about green products before buying.	
	BEH3	I encourage others to use green products.	
	BEH4	I make an effort to purchase only items that are recyclable.	
	BEH5	I have changed my product choices due to environmental considerations.	
Green price policy	PRI1	The price of green products reflects the actual environmental cost.	Lavuri (2022); Ogiemwonyi (2024); Santhoshkumar & Kousalyadevi (2022) [31, 40, 41]
	PRI2	I am willing to pay extra for green products.	
	PRI3	The price of green products is reasonable compared to the value they provide.	
Green Advertising	GAD1	Green advertising helps me understand the environmental benefits of green products.	Boccia & Tohidi (2024); Nekmahmud et al. (2022); Alam et al. (2023) [1, 12, 19]
	GAD2	Green advertising motivates me to buy green products.	
	GAD3	I feel more confident in green products after seeing advertisements about them.	

### 3-3-Analytical Method

The gathered data was examined through the PLS-SEM technical. PLS-SEM is a powerful multivariate analysis method suitable for testing complex theoretical models with multiple latent variables and relationships [50]. The analytical steps included: (i) assessing the reliability and validity of the measurement scales by utilizing Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) to confirm their consistency and convergent validity; (ii) analyzing the measurement model to determine the relationships between observed and latent variables; and (iii) analyzing the structural model to test the research hypotheses by evaluating the cause-and-effect relationships between latent variables. Model assessment indicators, including R-square, path coefficients, and t-values, were utilized to evaluate the model's fit and the strength of relationships among variables. The PLS-SEM approach was selected for its flexibility and capability to manage complex models with multiple independent and dependent variables, enabling the research team to obtain precise and efficient analytical outcomes [50].

## 4- Results and Analysis

### 4-1-Described Samples

The survey sample was diverse in terms of age, gender, income, education, and occupation (Table 2). The survey sample showed a fairly even distribution across age groups. The age group from 35-55 accounted for the highest proportion with 28.5%, followed by the group 22-34 (27.9%) and the group under 22 years old (25.0%). The group aged 56 and above accounted for the lowest proportion (18.6%). This age diversity in the survey sample allowed for the collection of green consumer perspectives and behaviors from different generations. In terms of gender, the survey sample showed a clear difference between men and women, with women accounting for 61.1% and men accounting for 38.9%. The survey sample included diverse income groups, with the majority of participants earning less than 5 million VND/month (31.5%). Other income groups had relatively equal rates: 5-10 million (25.3%), 10-20 million (22.8%), and over 20 million (20.3%). Regarding educational level, the group with high school education accounted for the highest proportion (25.5%), followed by the vocational school group (24.0%) and the group with less than high school education (19.3%). Groups with university and postgraduate degrees accounted for 20.5% and 10.7%, respectively. Regarding occupation, office workers accounted for the highest proportion (23.2%), followed by students (16.9%), business owners



(17.8%), workers (14.6%), and other groups such as retirees and other occupations (each group 13.8%). This occupational diversity in the survey sample provided a comprehensive view of green consumption behavior from different occupations.

**Table 2. Demographic characteristics of the sample**

Characteristics		Responses	Percent (%)
Age	Below 22	149	25.0
	22-34	166	27.9
	35-55	170	28.5
	56 and above	111	18.6
Gender	Male	232	38.9
	Female	364	61.1
Family income per person	Below 5	188	31.5
	5-10	151	25.3
	10-20	136	22.8
	higher 20	121	20.3
Education level	Below High School	115	19.3
	High School	152	25.5
	Vocational school	143	24.0
	University	122	20.5
	Postgraduate	64	10.7
Occupation	Students	101	16.9
	Office staff	138	23.2
	Workers	87	14.6
	Business Owners	106	17.8
	Retired	82	13.8
	Others	82	13.8
Total		596	100

The survey sample was diverse in age, gender, income, education level, and occupation, which helped to study green consumption behavior from many different angles. However, in this study, the research team did not consider differences between demographic groups but only considered the influence of marketing factors on consumers' green food consumption behavior.

#### 4-2- Results

This part outlines the findings from the data analysis, conducted using the PLS-SEM technical to evaluate the proposed hypotheses.

Table 3 displays the factor loadings, representing the degree of association between the measured variables and their corresponding underlying constructs within the model. Notably, two items, AGP2 and ATT2, were removed due to their factor loadings falling below the threshold of 0.7. After this removal, the analysis was rerun, and the new factor loadings were displayed. These factor loadings range from 0.715 to 0.896, demonstrating a strong association between the indicators and their associated latent variables in the context of green marketing and consumer behavior. All factor loadings exceed 0.7, which suggests that the constructs are valid and reliable. Higher loadings indicate stronger correlations, with items near 0.896 being the most strongly associated. These results imply that the constructs are robust and reliable, which is crucial for understanding consumer behavior in green marketing. The consistent high loadings also reflect high data quality and reliability, supporting the study's findings.

**Table 3. Factor loadings**

	Attitude toward green products	Awareness of environment	Awareness of green products	Green Advertising	Green consumption behavior	Green price policy	Intention	Subjective norm
AGP1			0.825					
AGP3			0.784					
AGP4			0.774					
ANE1		0.888						
ANE2		0.851						
ANE3		0.928						
ATT1	0.785							
ATT3	0.808							
ATT4	0.789							
BEH1					0.785			
BEH2					0.715			
BEH3					0.746			
BEH4					0.782			
BEH5					0.848			
GAD1				0.804				
GAD2				0.767				
GAD3				0.885				
INT1							0.793	
INT2							0.896	
INT3							0.788	
INT4							0.874	
PRI1						0.815		
PRI2						0.771		
PRI3						0.869		
SNO1								0.770
SNO2								0.766
SNO3								0.779
SNO4								0.741

Table 4 provides the coefficient of determination ( $R^2$ ) and its adjusted value for different constructs associated with green marketing and consumer behavior. The R-square value for the Attitude toward Green Products construct is 0.092, with an adjusted R-square of 0.091, suggesting that about 9.1% of its variance is accounted for by the model. The R-square value for Awareness of Green Products is 0.118, while the adjusted R-square is 0.116, indicating that the model accounts for roughly 11.6% of the variation in this construct. The R-square value for the Green Consumption Behavior construct is 0.344, with an adjusted R-square of 0.343, indicating that the model accounts for 34.3% of the variance in this construct. Lastly, the Intention construct has an R-square of 0.519 and an adjusted R-square of 0.515, indicating that the model explains 51.5% of the variance in this construct.

**Table 4. The coefficient of determination ( $R^2$ ) and its adjusted counterpart (adjusted  $R^2$ )**

	R-square	R-square adjusted
Attitude toward green products	0.092	0.091
Awareness of green products	0.118	0.116
Green consumption behavior	0.344	0.343
Intention	0.519	0.515

Table 5 provides reliability and validity metrics for several constructs related to green marketing and consumer behavior. All factors (attitude toward green products, awareness of the environment, awareness of green products, green advertising, green consumption behavior, green price policy, intention, and subjective norm) have moderate good reliability with a Cronbach's alpha of more than 0.7 ranging from 0.707 to 0.871. Overall, these metrics indicate that the



constructs generally possess good internal consistency, with higher composite reliability values suggesting better construct reliability. An Average Variance Extracted (AVE) score exceeding 0.5 for the majority of constructs suggests a satisfactory level of convergent validity, reflecting that the constructs measure distinct aspects as intended [50].

**Table 5. Evaluation of measurement model**

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude toward green products	0.707	0.708	0.836	0.630
Awareness of environment	0.871	0.921	0.919	0.791
Awareness of green products	0.712	0.728	0.837	0.631
Green Advertising	0.762	0.811	0.86	0.673
Green consumption behavior	0.836	0.857	0.883	0.603
Green price policy	0.757	0.781	0.859	0.671
Intention	0.859	0.859	0.905	0.704
Subjective norm	0.763	0.766	0.849	0.584

The results from Table 6 show correlations between constructs related to green marketing and consumer behavior, with diagonal elements representing the square root of the AVE. Attitude toward green products has moderate to strong correlations with green advertising (0.508) and Intention (0.52), while awareness of the environment is a distinct factor with low correlations. Green Advertising and green consumption behavior significantly correlate with intention (0.627 and 0.587), indicating they strongly influence consumer intentions. Green price policy also correlates well with intention (0.529), and subjective norm affects Intention to a lesser extent (0.504). These results highlight the importance of targeted advertising, positive consumption behaviors, and strategic pricing in promoting green products.

**Table 6. Discriminant validity test results**

	Attitude toward green products	Awareness of environment	Awareness of green products	Green Advertising	Green consumption behavior	Green price policy	Intention	Subjective norm
Attitude toward green products	0.794							
Awareness of environment	0.002	0.889						
Awareness of green products	0.304	0.027	0.794					
Green Advertising	0.508	0.055	0.343	0.820				
Green consumption behavior	0.336	0.060	0.261	0.543	0.777			
Green price policy	0.279	0.055	0.471	0.392	0.379	0.819		
Intention	0.520	0.120	0.476	0.627	0.587	0.529	0.839	
Subjective norm	0.257	0.020	0.299	0.272	0.347	0.332	0.504	0.764

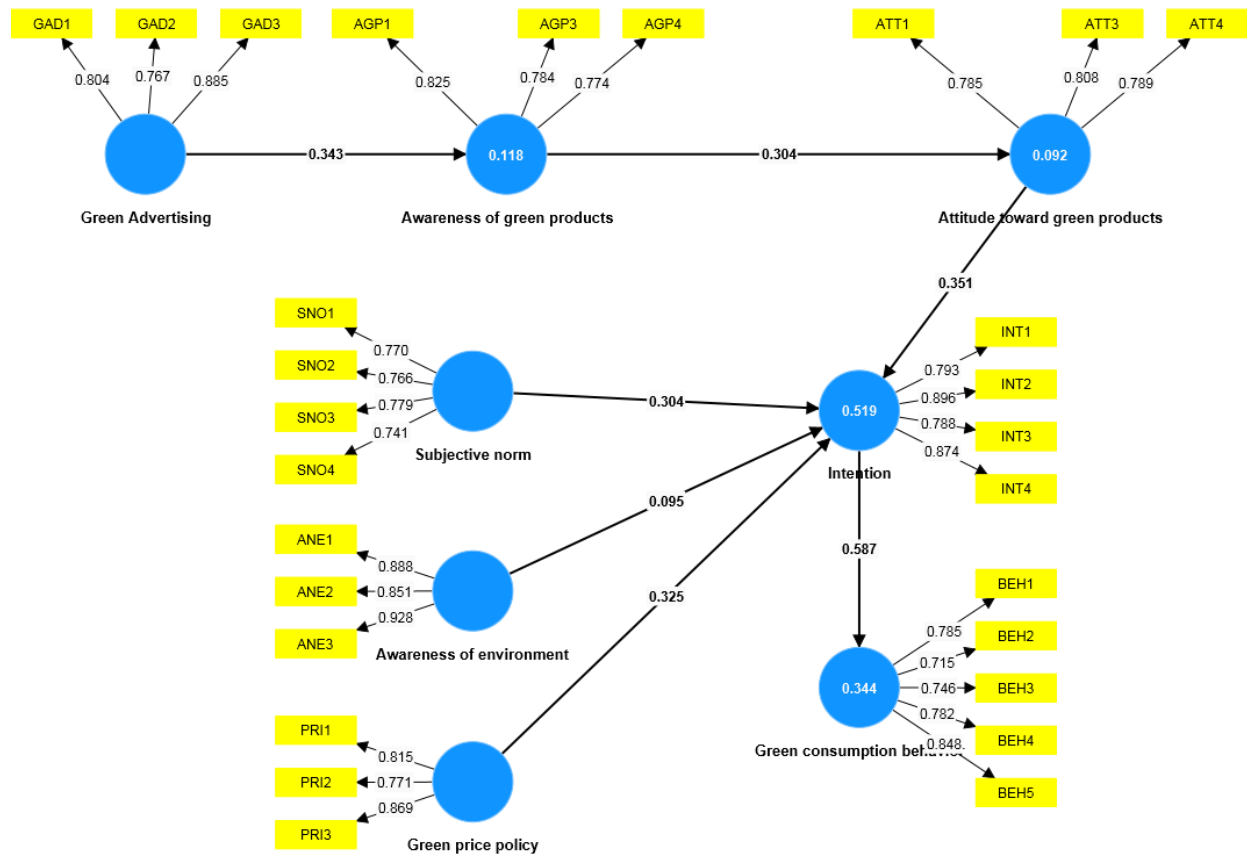
Table 7 demonstrates that all examined paths are statistically significant, with P values less than 0.05. The strongest effects are observed in the paths from Intention to green consumption behavior (0.587) and attitude toward green products to intention (0.351). This indicates that consumers' intentions are the most critical predictor of their green consumption behavior, and their attitudes significantly shape these intentions. Green Advertising effectively raises awareness of green products, which in turn influences attitudes toward green products. Green price policy also plays a crucial role in forming intentions. The significant influence of subjective norms on intention suggests that social factors are important in shaping consumer intentions. These findings highlight the need for businesses to focus on improving attitudes and awareness through effective advertising and strategic pricing while also considering the impact of social norms to foster positive green consumption behaviors.

**Table 7. The structural model's path coefficients and overall indirect effects**

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Attitude toward green products → Intention	0.351	0.350	0.027	13.124	0.000
Awareness of environment → Intention	0.095	0.097	0.028	3.339	0.001
Awareness of green products → Attitude toward green products	0.304	0.307	0.042	7.234	0.000
Green Advertising → Awareness of green products	0.343	0.348	0.038	8.928	0.000
Green price policy → Intention	0.325	0.326	0.036	9.079	0.000
Intention → Green consumption behavior	0.587	0.588	0.027	22.117	0.000
Subjective norm → Intention	0.304	0.304	0.030	10.150	0.000

#### 4-3-Discussion and Implication

The findings from Figure 2 underscore the critical factors influencing green consumer behavior, highlighting the significant roles of consumer intentions, attitudes, advertising, pricing policies, and social norms.



**Figure 2. Structural Model**

Firstly, the research results indicate that the path from intention to green consumption behavior exhibits the strongest effect (0.587), suggesting that Vietnamese consumers' intentions are the most critical predictor of their actual green consumption behavior. This result is consistent with the TPB, which suggests that intention serves as the key determinant of behavior. Ajzen (1991) [23] emphasizes that intention captures motivational factors influencing behavior, reflecting the degree of effort individuals plan to exert. Consistent with our findings, research by Wu & Long (2024) [38] confirms that intention is a strong predictor of behavior, especially when the intention is specific and the behavior is within the individual's control. Similarly, Deo & Prasad (2024) [30] conducted research in the Australian market found that formed green consumption intentions play an essential role in converting into real purchasing behaviors, particularly when supportive factors such as green infrastructure and access to eco-friendly products are ensured. However, this study contributes new insights by confirming the exceptionally strong role of intention in the context of Vietnamese consumers, where cultural factors, social awareness, and community support play vital roles in shaping green consumption intentions. Compared to previous studies that primarily focused on demographic factors or barriers to accessing green products, our research sheds light on the significance of enhancing green consumption intentions through culturally appropriate interventions. Therefore, to effectively promote green consumption, businesses and policymakers in the Vietnamese market should focus on strategies that reinforce consumer intentions such as implementing educational campaigns emphasizing that raise awareness of the benefits of green consumption, developing green product distribution channels with affordable costs, and creating certification and eco-labeling programs to boost consumer confidence. Additionally, supporting green businesses through tax incentives and financial assistance can encourage more enterprises to participate in green production, thereby facilitating consumers' access to environmentally friendly products.

Secondly, the research results demonstrate that the path from the attitude toward green products to Intention is also significant (0.351), indicating that consumers' attitudes significantly shape their intentions. A positive attitude towards green products often stems from perceived benefits such as environmental conservation, health benefits, and social responsibility. This finding is consistent with previous studies such as Quynh & Phuong (2023) [51]; Ogiemwonyi (2024) [31] which have shown that positive perceptions of environmentally friendly products have a substantial impact on purchasing intentions. Studies by Parashar et al. (2023) [32] also support this, showing that positive attitudes towards environmental products enhance purchase intentions. This study contributes new insights by highlighting that in the

context of Vietnamese consumers, the formation of positive attitudes is not only driven by awareness of environmental benefits but also by cultural values and community influences that shape individuals' sense of responsibility. Compared to prior studies that primarily focused on economic factors or product quality [8], our findings emphasize the critical role of attitudinal factors, reflecting the unique socio-cultural context of Vietnam. Consequently, to effectively promote positive attitudes toward green products, businesses and policymakers should prioritize transparent and consistent communication about the environmental and personal benefits of green products to foster positive attitudes among Vietnamese consumers. This could involve leveraging social media and community networks to disseminate relatable and inspiring stories about sustainable consumption. Additionally, certification labels and eco-labels coupled with public recognition of responsible businesses, can also enhance trust and positive attitudes.

Thirdly, the research findings reveal that green advertising has a substantial impact on raising awareness of green products, which in turn influences attitudes toward green products in Vietnam. Effective advertising can highlight the unique benefits of green products, educate consumers about environmental issues, and motivate pro-environmental attitudes. Research by Boccia & Tohidi (2024) [12] underscores the importance of green advertising in shaping consumer perceptions and behaviors toward environmentally friendly products. Additionally, a study by Chen et al. (2024) [24] further supports the role of green advertising in raising awareness and positively influencing consumer attitudes. This study contributes new insights by demonstrating that in the Vietnamese context, the effectiveness of green advertising is closely linked to cultural values and community involvement, which amplify the message's resonance and credibility. While previous studies have often focused on the technical content or visual appeal of advertisements, our findings highlight the importance of integrating social and community elements to enhance the effectiveness of green advertising. Therefore, to maximize the impact of green advertising in Vietnam, businesses should invest in targeted green advertising campaigns that effectively communicate the environmental and health benefits of their products. Collaborations with influencers and environmental organizations can enhance the credibility and reach of these campaigns, while interactive and community-driven initiatives can foster stronger consumer engagement and positive attitudes toward sustainable consumption. Both types of advertising, emotional appeal versus factual claims, have distinct impacts on consumer perceptions. Emotional appeals often resonate with consumers by creating a personal connection to environmental responsibility, while factual claims build credibility by providing verifiable information about the product's environmental benefits.

Fourthly, the findings reveal that the green price policy significantly influences consumer intentions, suggesting that pricing strategies are crucial in shaping Vietnamese consumer behavior. Fair pricing of green products, along with perceived value for money, can enhance purchase intentions. This finding is supported by previous research by Lavuri (2022) [40]; Yadav & Pathak (2016) [25], which indicates that competitive pricing can reduce the perceived financial barrier to purchasing green products. However, while prior studies primarily focused on the direct effect of reduced prices, this research extends the understanding by showing that perceived fairness and value play equally important roles in motivating green consumption. Moreover, this study contributes to the literature by contextualizing the importance of pricing within the Vietnamese market, where consumers are highly price-sensitive and value-conscious. This insight challenges the conventional belief that environmental consciousness alone drives green consumption, instead suggesting that practical financial considerations significantly shape consumer choices. Therefore, to enhance green consumption, policymakers should consider subsidies or tax incentives for green products to make them more affordable, and businesses should specifically develop different pricing strategies that may impact green prices. Furthermore, providing discounts and special offers can appeal to cost-conscious consumers and motivate them to try the products.

Finally, the significant influence of subjective norms on intention (0.304) suggests that social factors are important in shaping consumer intentions in Vietnam. Subjective norms pertain to the influence of social expectations on an individual's decision to engage or refrain from a specific behavior. If individuals believe that important people in their lives endorse green consumption, they are more likely to engage in such behaviors. This finding is consistent with Phuong et al. (2024) [8] and Taufique & Vaithianathan (2018) [9], emphasizing the role of social influence in promoting sustainable consumption. However, while earlier studies primarily emphasized the broad impact of social norms, this research contributes a nuanced understanding by identifying the specific social circles and influential groups that shape consumer intentions in the Vietnamese context. Moreover, this study enriches the theoretical framework by emphasizing the interaction between cultural norms and green consumption, demonstrating that in collectivist cultures like Vietnam, social acceptance and peer influence are paramount. This highlights the necessity of leveraging social dynamics when designing green consumption promotion strategies. Therefore, to effectively promote green consumption, policymakers and businesses should consider campaigns that leverage social norms can be effective in promoting green consumption. Social media campaigns that showcase the growing popularity of green behaviors among peers can create a sense of collective responsibility and social approval. Additionally, forming community-based green initiatives can empower consumers to participate actively and influence their social networks, thereby reinforcing positive behavioral change.

## 5- Conclusion

This research endeavor was undertaken to meticulously identify and analyze the various elements of green marketing strategies that significantly influence consumer behavior within the Vietnamese market. Key factors under investigation encompassed green advertising, the level of awareness regarding green products, the attitude towards green products, the impact of subjective norms, environmental awareness, and the role of green pricing. To assess how each of these factors affects the purchasing intentions and behaviors of Vietnamese consumers, the study applied the Theory of Planned Behavior, employing an online questionnaire survey that collected responses from 596 participants. The data were subsequently analyzed using the PLS-SEM technique.

The findings of this study unequivocally indicate that all the aforementioned factors exert a statistically significant impact on consumer purchase intentions and behaviors. Notably, the attitude towards green products was identified as the most influential factor, underscoring the increasing concern among Vietnamese consumers regarding environmentally friendly products and their tendency to favor businesses that actively adopt green marketing strategies. Furthermore, the research established that green advertising and the awareness of green products strongly influence consumer intention, thereby highlighting the critical role of effective advertising messages and consumer acceptance in promoting green purchasing practices. Additionally, while subjective norms and green prices do have an impact, it is relatively less pronounced, suggesting that community influence and economic factors, though important, may not be as decisive as consumer attitudes and awareness in this context. These results provide valuable insights for managers and marketers who are keen on developing and implementing effective green marketing strategies that successfully encourage green purchasing behavior among Vietnamese consumers. It is apparent that enhancing consumer awareness and fostering positive attitudes towards green products, alongside the strategic utilization of green advertising, are crucial for businesses aiming to meet consumer demands and, simultaneously, contribute to environmental protection.

However, it is essential to acknowledge certain limitations of this research. Firstly, the study's reliance on an online questionnaire survey introduces a potential sample bias. This method may not fully capture the diversity of the entire Vietnamese consumer population, as individuals without reliable internet access may be systematically underrepresented. Consequently, the generalizability of the findings to the broader population should be approached with caution. Secondly, while the study analyzed several key determinants of green consumer behavior, the scope was limited by the exclusion of potentially influential factors, such as cultural values, government policies, and broader economic conditions. The model's focus on a set number of variables should be seen as a constraint, and future studies would benefit from including these broader contextual factors to provide a more holistic understanding of the drivers of green consumption behaviors. Future research may empirically examine the role of collectivism versus individualism in shaping green purchasing behavior. Thirdly, the cross-sectional design, while providing a valuable snapshot of the situation at one point in time, limits the ability of the study to establish definitive causal relationships. Therefore, longitudinal studies, which can track changes over time, could offer further insights into how consumer behaviors evolve in response to green marketing initiatives. Forth, one limitation of this study is the lack of analysis regarding differences in responses among consumer demographic groups (such as age, income level, and education) to green marketing strategies. Therefore, future research could focus on segmenting consumers based on demographic characteristics to gain deeper insights into variations in perceptions and behaviors related to green marketing strategies, thereby developing more tailored and effective approaches for each target group. Lastly, the data collected through self-reported questionnaires may be subject to social desirability bias. Respondents might have answered questions in ways they believed would be viewed more favorably, which might not accurately reflect their actual behaviors or attitudes. This suggests the need for cautious interpretation of results based solely on self-reported information.

## 6- Declarations

### 6-1- Author Contributions

Conceptualization, P.N.H.Q. and N.V.P.; methodology, N.V.P.; software, N.V.P.; validation, P.N.H.Q., L.T.C., K.K.P., and N.V.P.; formal analysis, N.V.P.; investigation, P.N.H.Q.; resources, P.N.H.Q.; data curation, L.T.C.; writing—original draft preparation, P.N.H.Q. and N.V.P.; writing—review and editing, L.T.C.; visualization, L.T.C.; supervision, K.K.P. All authors have read and agreed to the published version of the manuscript.

### 6-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

### 6-3- Funding

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### 6-5-Institutional Review Board Statement

Not applicable.

### 6-6-Informed Consent Statement

The researchers affirm that all survey participants were informed about the study, and the research was carried out following established research protocols.

### 6-7-Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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## Appendix I : Questionnaire

Dear Sir/Madam,

We are a research team from the VNU University of Economics and Business, Vietnam National University, Hanoi. We are conducting a research study to understand Vietnamese consumers' opinions and behaviors about green marketing and environmentally friendly products. Your valuable insights will help us identify key factors that influence your purchase of green products. Your participation is entirely voluntary and will take approximately 20-30 minutes to complete. Please be assured that all your information will be kept confidential and used solely for research purposes. By proceeding with the questionnaire, you indicate your consent to using your responses for this research study.

Please read each question carefully and choose the best answer for your experience.

I appreciate your cooperation!

Sincerely,

The Research Team

VNU University of Economics and Business, Vietnam National University, Hanoi

### 1. *Green Marketing Strategy and Consumer Behavior*

Instructions: Please indicate your level of agreement with the following statements by placing an (X) in the appropriate box, according to the scale below:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

Terminology Explained: Green marketing is all business strategies that aim to minimize negative environmental impacts, including activities to develop products, pricing, promote, and distribute environmentally friendly products.

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
	1	2	3	4	5
I am aware that green products are beneficial to the environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know about the environmentally friendly features of green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green products help reduce environmental pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am familiar with the term "green products."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a positive attitude towards green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using green products is necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe green products are of good quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a favorable attitude to use green products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family encourages me to use green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends support the use of green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My neighbors think I should use environmentally friendly products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My co-workers expects me to use green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using green products helps protect the environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green products help minimize negative impacts on the environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green products can contribute to a cleaner environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I intend to buy green products shortly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I will prioritize buying green products over conventional products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I plan to switch to using green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would be willing to sign a petition to support an environmental cause.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I frequently buy green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I always seek information about green products before buying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I encourage others to use green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try only to buy products that can be recycled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have switched products for ecological reasons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The price of green products reflects the actual environmental cost.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to pay extra for green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The price of green products is reasonable compared to the value they provide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green advertising helps me understand the environmental benefits of green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green advertising motivates me to buy green products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel more confident in green products after seeing advertisements about them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 2. Personal Information

1. Old:

2. Gender:

☐ Male

☐ Female

3. Education:

☐ Below High School

☐ High School

☐ Vocational school

☐ University and higher

4. Status:

☐ Married

☐ Divorce

☐ Single

5. Family' size (number of person (s) in your family):

6. Family's income (in million VND): VND.

7. Current occupation:

Students

Office staff

Workers

Business Owners

Retired

Others

8. Where do you live?

*Thank you once again for your cooperation!*