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Factors Affecting of Environmental Consciousness on Green Purchase Intention: An Empirical Study of Generation Z in Vietnam

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Abstract

Humans are facing many environmental challenges. Climate change, water pollution, global warming, and hazardous waste disposal are all issues that many countries throughout the world are dealing with. People's psychology and consumer behavior are significantly affected by these challenges, particularly generation Z, which is immediately affected by environmental changes. Young people have a strong sense of curiosity and have access to readily updated knowledge. Today's youth, in particular, live a civilized and responsible lifestyle. As a result, people recognize the significance of their own consumption behavior in affecting environmental change and are increasingly replacing them with green, ecologically friendly products as a fantastic method to mitigate their harmful consequences. In this research, there are four factors related to the young generation and environmental awareness that affect green consumption intention: perceived environmental responsibility, green knowledge, green attitude, and green product value. The goal of this study is to look into how detrimental environmental changes affect Generation Z's green consumption habits. This study used primary data from over 1000 people in the age group, which was processed using the AMOS 20 software. All the characteristics described above had an impact on Generation Z's green consumption intentions, according to the findings.

Keywords: Generation Z, Perceived Environmental Responsibility, Green Attitude, Green Knowledge, Green Product Value, Purchase Intention

JEL Classification Code: A13, D83, F64, Q50

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1. Introduction

According to a recent study, people consider environmental problems to be today's most pressing challenge, followed by the economy, healthcare, unemployment, and crime(Paetzetal., 2012). Environmental degradation has never ceased to pique people's interest and remains controversial (Oh & Park, 2020; Choi, 2020; Nguyen et al., 2021). Many research papers from various years show that concern for the environment has become a major consideration in an individual's consumption decisions (Weigel & Weigel, 1978; Berger & Corbin, 1992; Bansal, 2003; Haytko & Matulich, 2008; Kotler 2011). Today's consumers are aware that their personal consumption habits affect the environment (Abdul et al., 2009) and the severity of environmental problems; thus, people are becoming more environmentally conscious (Han et al., 2009). Young consumers are a potent force in the growth of an environmentally conscious population

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(by Paco et al, 2013) as they tend to be well-informed about environmental and social issues (Furlow & Knott, 2009; Straughan & Roberts, 1999). Individuals born in 1995 or later are members of Generation Z also known as Post-Millennium (Priporas et al., 2017). More importantly, they are eager to search for green products (Jain & Kaur, 2006); as compared to plastic products, green products that can be decomposed, renewable, reused, and/or recycled will have a lower environmental impact (Dangelico & Pontrandolfo, 2010). Trends in response to environmental protection, such as minimizing plastic waste, sorting garbage, and recycling natural things, have received a lot of positive comments from young people in Vietnam, for example. For eco-friendly products, Gen Z represents a significant market opportunity (Lee, 2008).

The objective of this essay is to study the influencing factors from environmental awareness to green consumption intention of gen Z. Because Gen Z is an important target market for social ideas and products society, and at the same time they are the future policymakers and educators of the new economy (Kabaday et al., 2015; Sharaf et al., 2015). By 2025, Vietnam's Generation Z will account for around 25% of the national labor force, or 15 million people (Nielsen, 2018). This demonstrates the enormous potential of Gen Z consumers, which is the primary focus of this study. Therefore, this research is extremely valuable for green businesses in Vietnam in creating demand for green products for Vietnamese people, especially Gen Z.

2. Literature Review

2.1. Perceived Environmental Responsibility

Individuals who exercise environmental responsibility aim to act in a way that contributes to the repair of environmental damage (Stone et al., 1995). A person's manner of life or behavior can also be referred to as environmental responsibility (Fraj & Martinez, 2006). Individuals that are prepared to support and continue to be responsible for a better and more sustainable future for the environment are known as environmentally responsible consumers. Customers are thought to be environmentally concerned if they want to buy green alternatives (Nyborg et al., 2006). Customers who are ecologically concerned are more inclined to purchase green items, according to Nyborg et al. (2006). The majority of those who consider themselves to be environmentally conscious do their part by choosing green alternatives. Hypothesis 1 of this study are proposed as follows:

H1: There is a positive association between young people's awareness of environmental responsibility and green purchase intention.

2.2. Green Attitude

According to Eagly and Chaiken (1993) attitude is defined as "a psychological disposition manifested by rating a certain entity with a degree of approval or disliking". In addition, according to Casalo and Escario (2018), attitude is also considered a predictor of behavior. Green attitude focuses specifically on an individual's attitude towards the environment, which contributes to the protection of the environment, the protection of natural resources, or the reduction of environmental degradation (Casalo & Escario, 2018). There are studies that have found that green attitudes are predictors of environmental action (Tan & Lau, 2011; Yadav & Pathak, 2016). Research shows that individual awareness of the influence of each person will have a direct impact on lifestyle and living environment changes. Each person's awareness increased from their self-concept and the depth to which they felt they were integrated into nature (Patrick et al., 2005). This resulted in a positive attitude; it affects the intention to purchase eco-friendly items, therefore, the attitude has been found as a strong predictor of behavior that will affect the environment. This research hypothesized the following:

H2: Perception of green attitude significantly affects green purchase intention.

2.3. Green Knowledge

Knowledge, according to Chen et al. (2018), Choi and Johnson (2019), and Goh and Balaji (2016), plays a critical role as a trait that influences all stages of the decision-making process. Relevant knowledge will have an impact on how young consumers gather information, use that information to make decisions about the products and services they use (Aman et al., 2012). Environmental knowledge, according to Fryxell and Lo (2003), is the knowledge that gives a broad overview of concepts, facts, and relationships between ecosystems and the natural environment. According to research, having a larger and more diverse environmental knowledge leads to a more pro-environmental attitude among young consumers (Rokicka, 2002; Suki, 2016). Possessing a broader and deeper understanding of the environment will have a positive impact on attitudes toward the environment, and environmental knowledge will influence attitudes toward using environmentally friendly products. The greater one's understanding of the environment, the more likely one is to use environmentally friendly products. (Fryxell & Lo, 2003; Irandust & Naser, 2014). Young consumers should consider the importance of environmental protection; typically they participate in purchasing environmentallyfriendly consumer products (Kianpour et al., 2014). The consciousness of young consumers is formed from awareness

leading to high responsibility towards the environment as shown in Hypothesis 3.

H3: Green knowledge has a positive and significant influence on purchase intention.

2.4. Green Product Value

Based on the fact, consumers' views on evaluating products are based on their expectations of attributes that are perceived as the value of products (Yu & Lee 2019). Yaacob and Zakaria (2011) argued that consumers engage in activities related to green products for the sake of improving the environment in which they live. Others believe that the use of green products is for personal benefit because it protects health. Chen and Chang (2012) examined the role of green perceived value, risk of green perception, and the mediating effects of green trust factor on green product purchase intention in Taiwan. Many documents have acknowledged the effects of green products, the value and benefits of the product on the green purchase intention of consumers, and many researchers (Stern, 2000) argue that the value of green products are the basis for environmental friendliness and this is a stabilizing factor for ongoing environmental behavior (Steg & Velk, 2009). Based on previous studies, hypothesis 4 was established:

H4: There is a significant relationship between green product value and green purchase intention.

2.5. Green Purchase Intention (GPI)

Purchase intention, according to Ajzen and Fishbein (2001), is determined by the planning and purchase of a product or service, as well as the willingness to pay a higher price for that product or service. Purchase intention, according to Spears and Singh (2004), is an individual's intention to make a purchase attempt. According to Schiffman and Kanuk (2007), purchase intention is a physical action that occurs as a result of the effect of emotions and ideas about the desired goods. According to the findings of a study conducted by Mostafa (2009), consumers' knowledge of the environment and its current state has a major impact on their intention to purchase green products to help reduce negative environmental impact.

Another study showed that environmental knowledge affects Malaysian consumers' intention to buy green and environmentally friendly products (Mei et al., 2012). Pinto de Moura et al. (2012) found that consumers' attention to environmental issues affects their green product consumption behavior. Green buying intention was described by Chen and Chang (2012) as the ability of consumers to acquire a product based on their environmental needs; the likelihood

and desire of a consumer to choose environmentally friendly products over other common products (Nik Abdul et al., 2009).

The conceptual framework of this study is depicted in Figure 1.

3. Research Methods

3.1. Research Design

The research is based on the proposed theoretical model in Figure 1. Green purchase intention (GPI) is the dependent variable in this study, whereas perceived environmental responsibility (PER), green attitude (GA), green knowledge (GK), and green product value are the independent variables (GPV). The elements are incorporated into questions to obtain important information. The question was created using a five-level Likert scale, ranging from 1 to 5, with 1 being strongly disagree and 5 being strongly agree. The Likert scale is a basic psychological evaluation tool that is extensively used in social science research and education (Joshi et al., 2015).

This study was conducted using a survey-like format using an online questionnaire created on Google's forms platform. Questionnaires are one of the most widely used tools for data collection in social science research. Besides, the questionnaire helps the surveyor to collect relevant information in the most reliable and valid way. Therefore, the accuracy and consistency of the survey questionnaire constitute a certain validity and reliability from which to use as analytical data (Taherdoost, 2018).

3.2. Data Collection Method

The primary data is collected using a survey form and a questionnaire created with the help of an internet service called Google Forms. The total number of replies collected through an online survey is 1040 after two months of surveying and data collecting. The questionnaire is broken

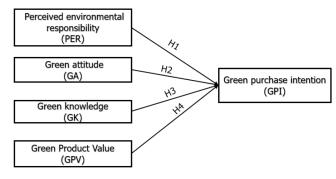


Figure 1: Research Model

into five parts that reveal the relationship between the independent and dependent variables. The sections are separated into perceived environmental responsibility, followed by a survey on green attitude and knowledge, the fourth section on green product value, and a final piece on green purchase intention. The respondents' propensity and reference to a given statement are measured using a five-point Likert scale. Their "strongly disagree" is represented by a 1 (one) on a scale of 1 to 5, and their "strongly agree" is represented by a 5 (five).

3.3. Data Analysis Method

We used survey questionnaires to acquire information from surveyors in this study, and we conducted the survey using both qualitative and quantitative analysis methodologies in the questionnaire. It will be evident to us through the survey participants' factors such as gender, age, education, occupation, and monthly income, through the qualitative technique in the survey, through the following factors: The factor has the ability to make predictions, studies, observations, and explanations on Generation Z's green consumption intents. In addition, using the data acquired from the survey, a quantitative technique will be used to assess the results obtained from the respondents (Kidder & Fine, 1987).

We use SPSS and AMOS software to enable the analysis of obtained data using Cronbach's alpha reliability, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) to ensure the research results are more reliable and accurate. The reliability of the sum (or mean) of q measurements, where the measures may be indicative of assessors, occasions, alternate forms, or questionnaire/test items, is described by Cronbach's alpha reliability (Cronbach, 1951). Confirmatory Factor Analysis (CFA) is best known for its capacity to help researchers bridge the gap between hypotheses and findings. SEM is a method for estimating, specifying, and assessing a linear model between a set of observed variables and a subset of unobserved variables. Theories can be tested and improved using SEM models.

4. Results

4.1. Profile of Respondents

The demographic profiles of survey respondents are listed in Table 1. The results show that 54.1 percent of respondents are female and 45.9% are male, indicating that both men and women are concerned about environmental protection and are gradually shifting their purchasing habits to green products. In addition, the majority of respondents aged 18–22 accounted for 48.6 percent, under 18 years old

Table 1: Profile of Respondents

Demographic Available		Frequency	Percent
Gender	Male	477	45.9
	Female	563	54.1
Age	Under 18 years old	292	28.1
	18–22 years old	505	48.6
	22-30 years old	152	14.6
	Over 30 years old	91	8.8
Academic Standard	High school	233	22.4
	Intermediate	67	6.4
	College	158	15.2
	University	482	46.3
	Postgraduate	100	9.6
Occupation	Student	201	19.3
	College Student	507	48.8
	Civil servant	60	5.8
	Workers - Employees	110	10.6
	Business	106	10.2
	Housewife	18	1.7
	Freelance	36	3.5
	Others	2	0.2

accounted for 28.1 percent, the majority of respondents had university degrees 46.3 percent, high school accounts for 22.4 percent, college accounts for 15.2 percent, the percentage of college students is 48.8 percent and the rate of students is 19.3 percent, showing that the education level of the survey participants is very high, the majority of them are young people, belonging to generation Z, so it is suitable for the scope of this study, from which it can be concluded that the reliability of the data coming from the survey is completely reliable.

4.2. Reliability Test

Cronbach's Alpha confidence performance was calculated to examine the reliability of the equivalence scale affecting gen Z's impression of environmental protection and consumption of green products, and the findings are shown in Table 2. The correlation between important variables and total variables, such as perceived environmental responsibility (PER), green attitude (GA), green knowledge (GK), green product value (GPV), and green purchasing intention (GPI) (GPI). Table 2 reveals that the Cronbach's Alpha coefficients are all more than 0.7,

Table 2: Cronbach's Alpha

Items		Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Perceived Environmental Responsibility (PER):	PER1	0.985	0.970
Cronbach's Alpha = 0.986	PER2	0.949	0.995
	PER3	0.977	0.975
Green Attitude (GA):	GA1	0.942	0.993
Cronbach's Alpha = 0.989	GA2	0.978	0.983
	GA3	0.990	0.980
	GA4	0.980	0.983
Green Knowledge (GK):	GK1	0.942	0.993
Cronbach's Alpha = 0.993	GK2	0.978	0.983
	GK3	0.990	0.980
	GK4	0.980	0.983
Green Product Value (GPV):	GPV1	0.918	0.986
Cronbach's Alpha = 0.984	GPV2	0.975	0.977
	GPV3	0.952	0.981
	GPV4	0.958	0.980
	GPV5	0.969	0.978
Green Purchase Intention (GPI):	GPI1	0.891	0.909
Cronbach's Alpha = 0.929	GPI2	0.817	0.915
	GPI3	0.517	0.935
	GPI4	0.671	0.926
	GPI5	0.860	0.912
	GPI6	0.892	0.909
	GPI7	0.791	0.918
	GPI8	0.628	0.931

indicating that the observed variable's association with the total variable is dependable. Furthermore, each observed variable's correlation coefficient with the overall variable is greater than 0.3. (Nunnally & Bernstein, 1994). Because all variables have a standard Cronbach's Alpha performance, they will be kept for further examination in the following section.

4.3. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) is performed to determine the measurement model fit using SPSS and AMOS (Hu & Bentler, 1999). Because the Sig value of the observed variables > 0.5, which is adequate and significant for the research model, all observed variables are kept in the model. Table 3 shows the outcomes of using five different indicators. These indications are sufficient to assess the

Table 3: CFA Measurement Model Fit Indices

	Observed Value	ldeal Threshold	Result
Chi-square/df	2.719	<3	Good
GFI	0.973	>0.9	Good
CFI	0.996	>0.9	Good
TLI	0.995	>0.9	Good
RMSEA	0.041	<0.08	Acceptable
PCLOSE	0.09	>0.01	Acceptable

study's measuring model. After doing the analysis, the results demonstrate that the data and the measurement model are a good match. This is necessary for further research on the connectivity between the hidden structures.

4.4. Structural Equation Modeling (SEM)

In general, the models presented by SEM often provide a wide range of relationships regarding the independent and dependent variables. Once identified and evaluated, we confirm or reject the hypothesis based on statistical data (Figure 2 and Table 4). The Chi-square (χ^2 /df) value is 1,900, less than 3: the value of the Goodness of Fit Index (GFI) is 0.923 and the Comparative Fit Index (CFI) value is 0.984, greater than 0.9 and the final value is the Root Mean Square Error of Approximation (RMSEA) is 0.077, less than 0.08.

The model shows good fitness and all scales are acceptable (Hu & Bentler, 1999). The results of SEM

analysis show that Sig of GPV, GA, PER is *** (AMOS symbol *** is sig equivalent to 0.000) and GK is 0.001 < 0.05 have effect with GPI. Finally, the analysis results show that the effects of 4 independent variables (GPV), (GA), (PER), and (GK) have a strong influence on the dependent variable (EI). Standardized Regression Weights with an Estimate is 0.112, green product value (GPV). This means that, the higher the value of green products, the higher the green purchase intention (GPI) will be. Green knowledge (GK) has a significant positive effect of 0.279 units on green purchase intention (GPI). This shows that one's green knowledge will affect purchase intention by 0.279 units. Green attitude (GA) has a positive effect of 0.198 units on

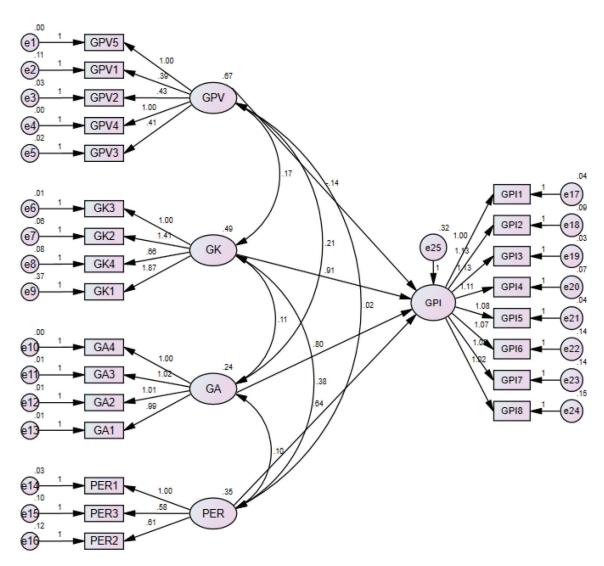


Figure 2: Direct and Indirect Effects on Green Purchase Intention

Notes: CMIN/DF = 1.900, GFI = 0.923, CFI = 0.984, RMSEA = 0.077 and TLI = 0.973. ***p < 0.001.

	Code	Explanatory Variables	Significant Results
H1	PER	There is a positive association between young people's awareness of environmental responsibility and green purchase intention.	0.17 (p = 0.000)
H2	GA	Perception of green attitude significantly affects green purchase intention.	0.50 (p = 0.000)
НЗ	GK	Green knowledge has a positive and significant influence on green purchase intention.	0.49 (p = 0.001)
H4	GPV	There is a significant relationship between Green Product Value and Green	2.21 (p = 0.000)

Table 4: Results of the Integrating Mode

Note: ***p-value < 0.001. Significant at the 0.05 level.

green purchase intention (GPI). It proves that the higher a person has a green attitude, the higher the purchase intention will be. Perceived environmental responsibility (PER) had the strongest impact on green purchase intention (GPI) with 1,067 units. It can be seen that the higher each person's awareness of environmental responsibility, the higher the green purchase intention of the young generation.

5. Discussion and Recommendation

We used SEM to analyze survey data from Gen Z consumers to determine green purchase intention in this study. The challenges are solved in this study by combining them into a common model for evaluating and evaluating green purchase intentions. We identified the aspects that influence Gen Z's green buying intents, such as perceived environmental responsibility, green attitude, green knowledge, and green product value. The goal of Gen Z to purchase green products is quite favorable.

According to the survey results, the majority of young people aged 18–22 (48.6%) and with a university degree (46.3%) are most interested in green items and have an influential green purchasing intention. This has also been demonstrated in several studies related to the relationship between age, education level, and political ideology, with the conclusion that younger people are better informed in terms of environmental quality since these characteristics lead to more attention to environmental quality (Liere & Dunlap, 1980). As a result, we can see how schooling will have a significant impact on Generation Z. Green items will pique the curiosity of well-educated people. As a result, families, and schools play a critical role in piquing young people's attention and encouraging green consumerism.

We want to propose investment plans for young people aged 18 to 22 by providing opportunities for them to participate in volunteer activities and events related to green products that will provide them with dedication rewards. For the sake of the environment, for schools, creating

strong activities on issues of green consumption, offering knowledge to help young people comprehend the benefits of green consumption through conferences conducted by high-impact speakers to create awareness and understanding about green products should be a top focus. Furthermore, implementing practical programs to assist young people to experience the activities of delivering green benefits to the environment practically will increase efficiency and convey the meaning of green consumption in a way that goes beyond just absorbing knowledge from theory.

Perceived environmental responsibility (PER) Hypothesis 1, investigates whether perceived environmental responsibility (PER) influences green consumption intention. It has a positive impact on consumer purchasing behavior, in addition to assisting in the elucidation of a sense of environmental responsibility (Granzin & Olsen, 1991; Collins et al., 2007; Choi & Ng 2011). Furthermore, the study found that the PER component had a greater influence on green consumption intention, purchasing ability, and affordability, with the strongest impact on green consumption intention being that customers believe that purchasing green items is meaningful. Using green has practical implications, is extremely successful, and has a beneficial impact on environmental conservation. As a result, some recommendations have been made, such as organizing propaganda advertisements to emphasize the benefits of using green products, businesses can consider maintaining prices while increasing communication about the long-term benefits and value green products bring to consumers, or businesses can implement promotions, product discounts for the first time as a form of market education. Also, take advantage of the discounted period to conduct product research and development so that when the price is restored, it is competitive with similar products.

Regarding green attitude (GA) Hypothesis 2, this study demonstrates that green attitude has a positive influence on the purchase of green products, supporting previous research by Suki (2016) and Kim et al. (2019), who argue that green

perception has a positive effect on the intention to purchase green products. Consumers have expressed their demand for green products to companies (Bockman et al., 2009; Schmeltz, 2012; Saifullah et al., 2017; Do et al., 2020). There is also research that shows that environmental corporate governance enables customers to have a favorable attitude toward the firm, which leads to a rise in sales (Collins et al., 2007; Choi & Ng, 2011).

As a result, some suggestions have been made, such as organizing propaganda advertisements to emphasize the benefits of using green products, businesses can consider maintaining prices while increasing communication about the long-term benefits and value green products bring to consumers, or businesses can implement promotions, product discounts for the first time as a form of market education. Also, take advantage of the discounted period to conduct product research and development so that when the price is restored, it is competitive with similar products.

Hypothesis 3 on green knowledge (GK), which states that green knowledge has a positive and significant impact on green purchase intention, was also accepted. According to research, Gen Z is very concerned about the environment. Generation Z was born after 1997 and grew up during the age of climate change and pollution, so they are practically all well-versed on environmental issues. Concern for the environment motivates people to buy environmentally friendly products (Robert & Bacon, 1997). Even as students, students should start environmental initiatives, contests, and programs to establish a new learning and creative playground for young people to learn about the environment. Many environmental protection movements, such as "Say no to plastic bottles," "trash classification," and "no dust," are currently gaining popularity in Vietnam.

Business enterprises should look at the existing green trend of young people to create a green generation to protect the environment. Consumers with sufficient knowledge about environmental issues tend to show positive perceptions towards environmentally friendly products; Environmental information they perceive guides them to prefer green products over conventional products (Smith & Paladino, 2010; Gilg et al., 2005; Tseng & Hung, 2013; Grankvist & Biel, 2007).

Hypothesis 4 on green product value (GPV) shows a substantial association between green product value and green purchase intention, which has also been accepted. The majority of customers will be persuaded to buy because of the product's high value to them, society, and, most importantly, the environment. The value of green products lies in their green attributes, which assist consumers to maintain their health, enhance the environment, and promote knowledge about environmental protection among consumers, particularly Generation Z. Because the value of green products is the determining factor in marketing

strategies, businesses should concentrate on emphasizing the unique benefits that green products can provide to people and the environment through effective communication and marketing tactics.

Furthermore, firms should invest in the development of new products that are both environmentally friendly and healthful to progressively shift customer consumption habits toward green products. Businesses should register "green" for their green products to increase the value of the product while also increasing customer trust. Firms' false claims about the greenness of green products and services have caused consumer distrust, which has influenced purchase intentions.

6. Conclusion

The goal of this study was to see if there was a link between gene Z's environmental awareness and their desire to use green products. The findings of this study reveal that environmental responsibility awareness, green attitude, green knowledge, and green values all influence green consumption intention positively. People born after 1997, known as Generation Z, grew up in an age marked by climate change and severe environmental contamination. Generation Z, more than anybody else, knows how environmental knowledge may affect their own lives, leading to green consumption intents.

The survey data was collected and evaluated from participants in the Generation Z age range for this study, which was conducted on a scale of more than 1000 persons. Generation Z is the age group that takes part in the poll the most. During the collecting of sample data, errors might occur, and the sample may not be a complete picture of the actual situation. They are educated individuals that have attended high schools, colleges, and universities, ensuring that the knowledge they supply is of the highest quality and reliability. The findings of this study will be tremendously useful to businesses and researchers designing strategies to develop green products to meet the consumption needs of Gen Z in future and towards a green business image, in accordance with the United Nations' sustainable development goals on climate change. Despite the study's limitations, it will contribute to the research process and will aid in the development of other research papers in the country, particularly research studies used to further develop the potential of Generation Z in Vietnam in particular and the world in general.

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