



Intention and Behavior Towards Green Products Among Vietnamese Zoomers Consumers in the Post-Pandemic Era: The Moderating Role of Willingness to Pay

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ABSTRACT

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environmental concern (EC), fear of COVID-19, green purchase intention (GPI), green consumption, willingness to pay (WTP)

The purpose of this study is to explore factors affecting green purchase intention (GPI) and behavior (GPB) among Vietnamese Zoomers Consumers in the post-pandemic era. A total of 408 respondents were collected in numerous different regions of North Vietnam via popular social networks with the help of a structured questionnaire. To test the reliability and validity of scales, Cronbach's alpha and confirmatory factor analysis were applied. Then, structural equation modeling (SEM) was used to investigate the relationship among the variables. Our findings reveal that environmental concern (EC), attitude (ATT), subjective norms (SNs) and perceived behavioral control (PBC) all have a positive impact on GPI. Among these variables, ATT was found to have the highest direct influence on purchase intention. Additionally, Fear of COVID-19 (FOC) was positively related to EC, and findings also indicated that willingness to pay (WTP) moderated the relationship between GPI and green purchase behavior. EC portrays a positive relationship with ATT, SNs and PBC. Based on the findings, this study proposed numerous recommendations to encourage green buying practices, including suggesting the authorities to strengthen public communication about the environmental benefits of using green products.

1. INTRODUCTION

The global industrial revolution has led to impressive economic growth globally, yet with the cost of higher production and consumption. Such economic expansion goes hand in hand with the excessive exploitation of natural resources and, ultimately, poses severe challenges to the global environment [1]. Societies are thus beginning to see a big change in purchasing and consumption patterns, shifting toward more environmentally sustainable behaviors [2]. In Vietnam, the government has shown a strong commitment to this goal through such policy as the National Green Growth Strategy for 2021-2030, with a vision to 2050 (Decision No. 1658/QĐ-TTg, dated October 1, 2021). This strategy highlights "greening production" and "greening consumption" as key tasks. Indeed, household consumption significantly contributes to national emissions, both directly via energy use and indirectly through the consumption of goods and services [3]. Thus, at a practical level, understanding individual and household green consumption behaviors is crucial for advancing the "greening consumption" agenda. Concern for the environment among Vietnamese people has grown [4], and this concern is starting to show in their intention to adopt greener consumption habits. Given the growing demand for consumption but limited public understanding [5], research on green purchase intentions in Vietnam is highly relevant.

Even though more researchers are interested in green purchase behaviors [6], most studies still focus on developed countries, which leaves a big gap in emerging economies like Vietnam [7, 8]. This shows why studying green purchase behavior in Vietnam is necessary to add to the global understanding of this topic. Moreover, while the COVID-19 pandemic is now better controlled, concerns about future outbreaks remain [9]. Such fears continue to shape individual's purchasing habits and their sensitivity for environmental issues [10, 11]. This is also heightened by a post-outbreak survey conducted globally by Ipsos [12], indicating that the pandemic even strengthens environmental concerns among people.

However, a meta-analysis on green consumer behavior in Vietnam from 2008 to 2020 pointed out that most studies focus on the correlation between intention and green behaviors [13]. Few have investigated how fear of COVID-19 (FOC) and environmental concerns (EC) together shape green purchasing among Vietnamese consumers. This reveals a significant research gap. On the other hand, the green product market in Vietnam is still at its early stage, even as green consumption is increasingly seen as the future and an inevitable trend [14]. However, only a few studies have examined how young Vietnamese consumers make decisions about buying green products. Given that Gen Z are "digital natives with a strong inclination towards social and environmental issues", they

represent a key potential market for green products [15]. To bridge these gaps, the present study integrates two additional factors, namely FOC and EC, into the TPB framework of Ajzen [16]. EC is added to the TPB framework because the traditional TPB does not fully explain the psychological drivers of green consumption. EC directly influences attitudes (ATT), subjective norms (SN), and perceived behavioral control (PBC), shaping consumers' intentions and green purchasing behaviors [17]. This integration enhances TPB's explanatory power and makes it more applicable to real-world contexts, particularly in emerging economies such as Vietnam [18, 19]. This approach allows us to explore how these factors influence not only the three core elements of TPB, but also how they relate to each other in shaping Gen Z consumers' intentions to buy green products. The findings are expected to offer fundamental implications for not only policymakers to develop better green strategies but also businesses to execute more targeted green marketing campaigns.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Theory of planned behavior (TPB)

In this research, the theory of planned behavior (TPB) was used as a theoretical framework to predict and explore factors affecting green purchase behavior. The TPB, which was proposed by Ajzen [16], is an extended model derived from the theory of reasoned action (TRA). The TRA applies only to volitional behaviors and this theory cannot explicitly explain nonvolitional or habitual behaviors [20]. With a view to taking account of behaviors that lack voluntary control, Ajzen [16] introduced TPB with a fresh component called PBC [16, 21]. This inclusion is necessary because the original model has a limitation in predicting behaviors that are not completely controlled by the individual's volition [16, 22]. The central of TPB is the individual's intention to perform a given behavior [23]. And this behavioral intention is determined by three factors including ATT, SN, and PBC. The TPB has been widely applied in predicting intentions and behaviors in many fields, including green purchase intention [22, 24].

In this study, we include three new variables, FOC, EC, and WTP, in the TPB model. In particular, we examine the direct impact of FOC on EC, and the direct impact of EC on three variables, including ATT, SN, and PBC. In addition, we also examine the moderating effect of WTP on the relationship between GPI and GPB. The conceptual model is presented in Figure 1.

2.2 Fear of COVID-19 (FOC)

Fear appeals "are persuasive messages designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends" [25]. Fear is also defined as a widely researched psychological construct and this has led to the development of dozens of psychometric 'fear scales' assessing individuals' fear of many different things [26]. Regarding the term "Fear of Covid-19", fear is defined as an unpleasant emotion aroused by the negative impact that COVID-19 brings to the individual and society [27]. In some previous studies, researchers have shown that the FOC is closely related to EC. Jian et al. [28] proposed a hypothesis that the FOC positively affects EC and they found

that individuals with higher levels of fear were more likely to reinforce pro-environmental values and engage in pro-environmental behaviors, such as wildlife protection. Similarly, Schiller et al. [29] observed that the global pandemic simultaneously increased health and EC, particularly during the lockdown period, with medium-to-large effect sizes.

However, the evidences are not entirely consistent. In a cross-national study covering 18 countries during the early stage of the pandemic, Wardana [30] reported that levels of EC varied substantially across countries. While most of the surveyed countries exhibited relatively high levels of EC, several Asian nations, such as Japan and South Korea, showed comparatively low levels. Notably, the study also found that in countries where fear of infection was high, EC tended to be lower.

Therefore, although the majority of prior studies support the hypothesis that FOC promotes EC, contradictory evidence cannot be ignored. This underscores the need for further research and a more nuanced assessment of this relationship. Based on this, the authors propose to test the following hypothesis:

H1: FOC has a positive and direct impact on EC.

2.3 Environmental concern (EC)

Although definitions of environmental concern (EC) vary across studies, most scholars describe it as people's attitudes toward environmental issues or how important they think those issues are in the reference [31]. This idea was expanded to include emotional aspects, social responsibility, and a sustained commitment to environmentally friendly environmentally friendly behaviors [32, 33]. In this study, the definition by Paul et al. [33] will be used, in which EC refers to people' comprehension of environmental issues and their willingness to embrace solutions or engage in personal actions to address them [28]. Numerous studies have demonstrated that EC exerts a positive influence on the variables of the TPB. For instance, Chaudhary and Bisai [17], in a survey of 202 Generation Y consumers in India, found that EC does not directly affect green purchase intention (GPI) but rather influences it indirectly through changes in ATT, SNs, and PBC. This suggests that in emerging economies, EC primarily serves to reinforce awareness and social norms before shaping behavioral outcomes. Consistent with this finding, Salimi [34] in Iran confirmed that EC significantly impacts all three TPB components, thereby underscoring its important role in shaping beliefs and evaluations related to green behavior. However, it should be noted that while Salimi [34] incorporated mediating variables such as perceived value, Chaudhary and Bisai [17] emphasized the core TPB structure, indicating that evidence regarding the mediating role of EC remains somewhat inconsistent.

On the other hand, some studies contend that EC can directly affect GPI without necessarily operating through intermediary factors. For example, Yadav and Pathak [35] reported that young consumers in India with high levels of EC are inclined to make sustainable consumption decisions even when their ATTs or SNs are not particularly strong. Similarly, De Klerk et al. [36], in their research on the leather industry, revealed that EC may surpass traditional TPB constructs and emerge as a stronger predictor of purchase intention, especially in contexts where consumption behavior involves ethical or controversial issues. These findings indicate that the

influence of EC is not uniform but varies according to cultural characteristics, market maturity, and the nature of the product. Based on these earlier results and taking into account the fact that ECs are becoming more important in Vietnam, this research suggests looking into four hypotheses below:

- H2:** EC has a positive and direct impact on ATT.
- H3:** EC has a positive and direct impact on SNs.
- H4:** EC has a positive and direct impact on PBC.
- H5:** EC has a positive and direct impact on GPI.

2.4 Attitude (ATT)

ATT reflects an individual's tendency to evaluate a symbol or object in either a positive or negative manner [37]. Subsequently, Ajzen [16], who established the foundation of the TPB, defined ATT as an individual's favorable or unfavorable evaluation of performing a specific behavior. Integrating these perspectives, the present study adopts Ajzen's [16] definition, conceptualizing attitude as an individual's overall positive or negative perception of engaging in green purchasing behavior.

Several previous studies have shown that consumer attitudes influence GPI. Specifically, consumers' attitudes toward green purchasing influence their green buying behavior through the mediating role of GPI [38], while Mostafa [39] demonstrated that favorable attitudes significantly strengthen this intention. At the same time, other studies have also indicated that ATT and PBC are important predictors of purchase intention [35]. This suggests that a positive ATT not only increases consumers' tendency to support green products but also reinforces their belief in the necessity and feasibility of engaging in green purchasing behavior. Thus, we propose to test the following hypothesis:

- H6:** ATT has a positive and direct impact on GPI.

2.5 Subjective norms (SN)

SN was first defined as an individual's perception of whether important people want them to perform or avoid a behavior [40]. Later, this definition was broadened to include a person's normative beliefs and motivation to comply [20]. SNs were further argued that involve not only normative beliefs but also evaluations of the behavior itself [41]. Despite these variations, SN primarily refers to perceived social pressure, extending its application to include behaviors based on others' actions as well [42]. Many empirical studies across different contexts have consistently demonstrated a strong and positive relationship between SNs and purchase intention. Specifically, Roh et al. [43] investigated 251 consumers in China and pointed out that SN has a direct impact on purchase intention regarding organic food. Similarly, Liu et al. [22] came to the same conclusion that SN is an antecedent of intention to perform green purchasing behavior. In contrast, SN was found to not directly impact on GPI in the Vietnamese context, but has an indirect influence [7]. This difference may stem from cultural characteristics and consumer behavior. In markets such as China, social pressure plays a decisive role in shaping behavior, whereas in Vietnam, consumers are still strongly influenced by price sensitivity and traditional shopping habits, making the impact of SNs less pronounced [44, 45]. Nevertheless, as environmental awareness increases and green consumption movements become more widespread, social pressure may emerge as an increasingly important driver of green purchasing behavior. To better understand the

correlation between SN and GPI, we propose the following hypothesis:

- H7:** SNs have a positive and direct impact on GPI.

The relationship between SNs and ATT was first examined and validated by Fishbein and Ajzen [40]. Based on this foundational work, numerous studies in Europe and Asia have shown that SNs exert a direct and positive effect on ATT within the green product segment, particularly in the organic food domain [46-48]. These findings imply that consumers' positive or negative evaluations of green products may be encouraged or inhibited by the social pressure perceived from significant others in their environment. Notably, while studies conducted in Europe emphasize the robustness of this effect across diverse consumer groups [46, 47], research in Asia underscores the role of cultural norms and identity expressiveness in reinforcing the relationship between SNs and ATT [48]. However, most of these investigations focus on the organic food sector, while this relationship across the broader scope of green purchase behavior remains underexplored. To extend the generalizability of social pressure in shaping green purchase attitudes, this study proposes the following hypothesis:

- H8:** SNs have a direct and positive impact on ATT.

Examining the correlations among the three components of the TPB, Dinc and Budic [49] claimed the positive and direct path from SN to both ATT and PBC. Likewise, Alagarsamy et al. [50] mentioned that consumers' perceptions of societal pressure to purchase environmentally friendly products can influence their opinions about whether doing so is good or harmful as well as how easy or difficult it is to do so. Recent studies in the field of corporate social responsibility and entrepreneurial intentions continue to confirm this association [6, 51]. Nevertheless, the association between SN and PBC, particularly in green product consumption, has not been the subject of as many studies as compared with the relationship between SN and ATT. The SN's impact on PBC thus has not exhibited a consistency due to this lack of research articles in the field. For instance, Dinc and Budic [49] and Vu et al. [6] find out that SN significantly impacts ATT and PBC, while Doanh [51] just mentioned ATT and PBC as mediators in the correlation between subjective norms and entrepreneurial intention without indicating their magnitudes. Therefore, this hypothesis is posited in the present research:

- H9:** SNs have a direct and positive impact on PBC.

2.6 Perceived behavioral control (PBC)

PBC is essentially equivalent to the concept of self-efficacy, which Bandura [52] defined as "a judgment of one's ability to organize and execute given types of performances." Ajzen and Madden [53] described PBC as the degree of ease or difficulty an individual perceives in performing a specific behavior. Ajzen [16] expanded this notion by highlighting the individual's perception of personal capability and autonomy in controlling behavior. It is this extended definition that forms the theoretical basis for the present study. In general, numerous studies have demonstrated a positive relationship between perceived behavioral control and purchase intention, particularly in the field of green purchasing behavior. For instance, Kim and Chung [54] found that the greater consumers' perceived behavioral control when purchasing organic personal care products, the stronger their purchase

intentions. Moreover, several studies conducted in different contexts, such as in India and Thailand, have indicated that perceived behavioral control (PBC) positively influences green purchase intention [33, 55, 56]. Based on the conclusions of previous studies, we decided to hypothesize as follows:

H10: PBC has a positive and direct impact on GPI.

2.7 Green purchase intention (GPI)

GPI refers to a consumer’s expressed willingness to buy environmentally friendly products, driven by a motivation to support and protect the environment [2]. Numerous prior studies on green consumer behavior have empirically confirmed a positive relationship between green purchase intention and actual green purchase behavior [17, 56, 57]. These findings suggest that consumers with a clear intention to purchase environmentally friendly products are more likely to engage in actual green purchasing behavior compared to those with low or no intention [58]. However, most of these studies have been conducted in the context of developed countries. In contrast, in developing countries such as Vietnam, the relationship between green purchase intention and green purchase behavior has not received sufficient empirical attention. Thus, this study proposes the following hypothesis:

H11: GPI has a positive and direct impact on GPB.

2.8 Willingness to pay (WTP)

Willingness to pay (WTP) was first defined by McConnell [59] as the amount an individual is willing and able to pay for recreational benefits. Cameron and James [60] broadened this to the “maximum amount” a consumer is prepared to pay for a product under certain conditions. Scholars began to add new perspectives, Heywood and Watson [61] argued WTP should simply reflect what an individual is willing to pay, without necessarily being a maximum. In the 2000s, however, most studies continued to view WTP as the maximum price buyers accept for goods or services [62, 63]. Price is a key product attribute influencing purchase decisions [64]. It is often viewed as a major barrier to green consumption [65] as green products are generally perceived to be more expensive than conventional products [66]. In Western countries like Germany and Hungary, however, studies confirm a strong positive link between WTP and GPB, identifying WTP as the most critical direct driver of green purchasing [67, 68]. Results differ in Asia and developing economies. While many studies

there still report that higher WTP increases actual green purchasing [69], some studies in India found WTP does not significantly affect green purchase behavior because consumers are highly price-sensitive [56]. Most of these studies, whether in developed or emerging markets, examine WTP as a direct predictor of GPB. Few have explored WTP as a moderator in the link between GPI and GPB. Chaudhary and Bisai [17] integrated WTP into the TPB framework and showed that WTP strengthens the relationship between intention and actual green purchase behavior among Gen Y consumers in India. That is, those more willing to pay a premium are also more likely to translate intention into action. Nevertheless, the moderating role of WTP remains underexplored in the green consumption literature. Examining this role could thus offer a better understanding of the frequently observed intention and behavior gap in sustainable purchasing. Therefore, the following hypothesis is propose:

H12: WTP moderates the relation between GPI and GPB.

3. METHODOLOGY

3.1 Sample and data collection

This study employs a self-administered questionnaire survey, and the data of the questionnaire was collected from the beginning of November 2023 to mid-January 2024. We specifically targeted Gen Z consumers who were currently studying at high schools and universities in Northern Vietnam. Several institutions were included in the data collection process, such as the National Economics University, Hanoi University of Science and Technology, Lam Son High School for the Gifted, and the Foreign Trade University, among others. We distributed the questionnaire to Zoomers consumers via social networks such as Facebook, Instagram, and Zalo. To ensure the respondents comprehend the questions of the survey, clear definitions of all variables were included in that electronic link. In total, 447 responses were collected. During the screening process, 39 responses were excluded because they did not meet the criteria of the Zoomer cohort or showed low data quality. In line with the definition of Generation Z as individuals born between 1993 and 2005 [70], respondents over 30 or below 18 years old at the time of the survey were excluded. In addition, responses that showed non-differentiated answers across all items were also removed. After this process, 408 valid responses remained for further analysis (Figure 1).

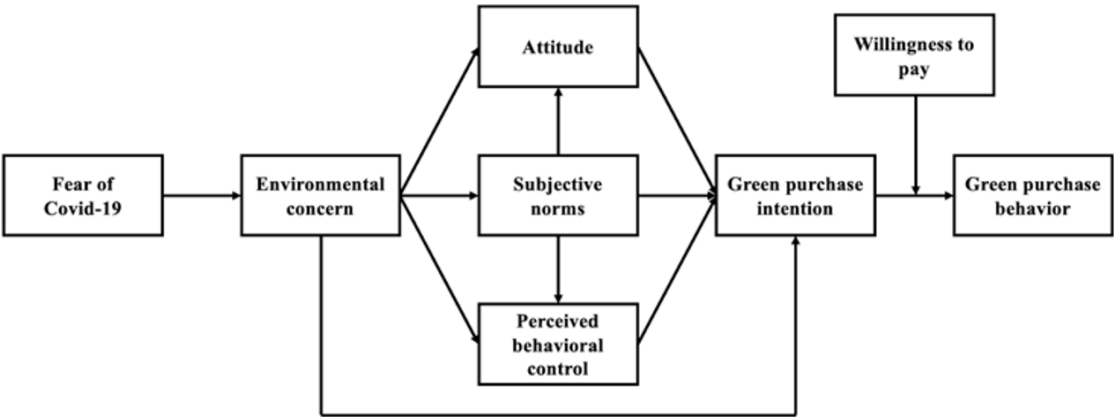


Figure 1. Conceptual model
Source: Authors’ work

3.2 Measurement

Participants were asked to show their level of agreement or disagreement using a measured five-point Likert scale from Strongly Disagree and Strongly Agree. Data were analyzed using SPSS 25.0 and AMOS 24.0 software. To validate the hypotheses within the conceptual framework and ensure validity, the research team selected measurement scales based on existing studies. Subsequently, we consulted reputable scholars in the field to refine the scales and adapt them to the Vietnamese context. Prior to large scale data collection, the questionnaire was pretested, and the feedback provided by respondents was used to further adjust the instrument to ensure clarity and appropriateness. The concept of FOC, relatively recent in research, is measured using a scale adopted from Hu et al. [71]. The items include a statement like "I'm taking efforts to avoid becoming infected (e.g., washing hands, avoiding contact with people, avoiding door handles...)". EC scale was adopted from Suki and Suki [72], chosen for its comprehensive emotional and psychological coverage. The scale includes statements like "The green environment is a major concern" and "I am worried about the worsening of the quality of the environment." ATT is assessed using the scale applied by Chaudhary and Bisai [17]. Participants respond to statements such as "I like the idea of purchasing green" and "I have a favorable attitude toward purchasing the green version of a product."

SNs are evaluated through a scale adopted from Sreen et al. [24], which includes items like "My interaction with people influences me to buy green products" and "People who are important to me think that I should buy green products." We also adopted a scale of Maichum et al. [55] to measure the PBC variable. Participants indicate their level of agreement or disagreement with statements like "I am confident that I can purchase green products rather than normal products when I want" and "I see myself as capable of purchasing green products in the future." The scale of GPI was adopted from Sinnappan and Rahman [73]. Representative items include statements such as "I will consider buying products because they are less polluting in coming times". Green Purchase Behavior using the scale proposed by Sinnappan and Rahman [73], adapted for relevance. One of the statements is "When I want to buy a product, I look at the ingredients label to see if it contains things that are environmentally damaging".

4. FINDINGS

4.1 Sample profile

The demographic profile below (Table 1) summarizes the characteristics of our respondents regarding their age, gender and monthly income. The majority of our sample are female which accounts for 70.6%, while the remaining 29.4% are

male. In terms of age, the two categories exhibit a noticeably unequal distribution of the sample, with 34.56% of the respondents falling in the under-20 age cohort and the other 65.44% ranging from 20-30 years old. The final demographic item represents respondents' monthly income divided into five income ranges. Those who are paid less than 5,000,000 VND per month accounts for 74% of the respondents, while the remaining ranges, namely No income, 5,000,000 VND - 10,000,000 VND; 10,000,000 VND - 15,000,000 VND; 15,000,000 VND - 20,000,000 VND and more than 20,000,000 VND, are just fraction of the whole sample, with 4.4%, 13.7%, 4.9%, 0.7%, 2.2%, respectively.

Table 1. Demographic profile

Demographic Items	Frequency	Percentage (%)
Age		
Under 20	141	34.56
20-30	267	65.44
Gender		
Male	120	29.4
Female	288	70.6
Monthly Income (VND)		
No income	18	4.4
Less than 5,000,000	302	74
5,000,000 - 10,000,000	56	13.7
10,000,000 - 15,000,000	20	4.9
15,000,000 - 20,000,000	3	0.7
More than 20,000,000	9	2.2

Source: Author's estimations

4.2 Reliability and validity of scales

It is clearly seen that Cronbach's alpha coefficient (α) values of all constructs are greater than 0.777 (Table 2), which means the measures are reliable and the model of study is fit to be conducted. After having analyzed the reliability of the scale with Cronbach's Alpha, we continued to conduct the Exploratory factor analysis with 29 items. The result illustrates that the coefficient Kaiser - Meyer - Olkin = 0.835 > 0.5, Sig. (Bartlett's test) = 0.000 < 0.05, initial eigenvalues = 74.347 > 50%, factor loading of all observations was greater than 0.6, meeting the threshold proposed by Hair et al. [74].

4.3 Measurement model testing

Composite reliability and average variance extracted values are all above the lowest values of 0.7, and 0.5, respectively (Table 3). This indicates acceptable convergent validity [75]. According to Hair et al. [76], the correlation values in any construct should not exceed the square root of the AVE values in a single construct. As shown in the table, all the square roots of the AVE were greater than the correlations. Thus, all constructs have reached discriminant validity.

Table 2. Cronbach's alpha and exploratory factor analysis result

Code	Pattern Matrix (EFA)
	GPI: (Mean: 4.04; SD: 0.76; Cronbach's alpha α : 0.869)
GPI1	0.788
GPI5	0.779
GPI4	0.777
GPI2	0.757
GPI3	0.655

PBC: (Mean: 3.78; SD: 0.88; Cronbach's alpha α: 0.827)		
PBC3	0.791	
PBC1	0.750	
PBC2	0.749	
PBC4	0.668	
EC: (Mean: 4.23; SD: 0.78; Cronbach's alpha α: 0.847)		
EC3	0.859	
EC4	0.803	
EC2	0.712	
EC1	0.671	
FOC: (Mean: 4.07; SD: 0.950; Cronbach's alpha α: 0.933)		
FOC3	0.931	
FOC2	0.926	
FOC1	0.864	
FOC4	0.815	
ATT: (Mean: 4.14; SD: 0.877; Cronbach's alpha α: 0.874)		
ATT1	0.901	
ATT2	0.804	
ATT3	0.782	
GPB: (Mean: 3.77; SD: 0.9; Cronbach's alpha α: 0.777)		
GPB2	0.809	
GPB3	0.747	
GPB1	0.678	
WTP: (Mean: 3.68; SD: 0.90; Cronbach's alpha α: 0.861)		
WTP2		0.903
WTP1		0.858
WTP3		0.710
SN: (Mean: 3.60; SD: 0.92; Cronbach's alpha α: 0.897)		
SN1		0.893
SN2		0.866
SN3		0.835

Source: Author's calculation

Table 3. Construct reliability, AVE, and discriminant validity

	CR	AVE	MSV	MaxR(H)	GPI	EC	PBC	FOC	GPB	ATT	WTP	SN
GPI	0.872	0.577	0.312	0.872	0.76							
EC	0.849	0.585	0.118	0.86	0.343***	0.765						
PBC	0.829	0.548	0.136	0.833	0.366***	0.258***	0.74					
FOC	0.935	0.784	0.093	0.945	0.062	0.305***	0.029	0.885				
GPB	0.79	0.558	0.115	0.8	0.322***	0.026	0.074	0.031	0.747			
ATT	0.875	0.701	0.312	0.887	0.558***	0.311***	0.129*	0.055	0.145*	0.837		
WTP	0.867	0.686	0.115	0.891	0.126*	0.112*	0.085	0.111*	0.340***	0.07	0.828	
SN	0.899	0.748	0.136	0.901	0.336***	0.128*	0.368***	-0.036	0.138*	0.199***	-0.065	0.865

Source: Author's calculation

4.4 Structural model assessment

The results of CFA indicate that the measurement model demonstrates a very good fit with empirical data. Specifically, the model fit indices as follows "CMIN/df = 1.232 (< 2); CFI = 0.987 (> 0.95), GFI = 0.935 (> 0.9), while RMSEA was 0.024 < 0.06" (Figure 2). These values suggest a good model fit, consistent with the guideline proposed by Hu and Bentler [77]. These indicators support the conclusion that the measurement model illustrates a good fit and meets the common acceptable threshold and criteria of previous scholars for reliability and construct validity.

The result of SEM depicted that the structural model depicts a good fit following the proposed threshold of Hair et al. [74]. In particular, CMIN/df = 1.381, GFI = 0.920, CFI = 0.977, TLI = 0.975, RMSEA = 0.031 and PCLOSE = 1.000 (Figure 3). The testing result is summarised in Table 4; overall, 12 hypotheses are supported. The most significant impact was found in the correlation between GPI and GPB (β = 0.418; p-value < 0.001); as a result, H11 is supported. EC demonstrated

a direct and strong influence on ATT with β = 0.405; p-value < 0.001. Thus, H2 is accepted. Similarly, H6 is supported as ATT is confirmed to be an important antecedent of GPI. The result shows that Zoomers consumers with a higher attitude towards green products will present a higher GPI (β = 0.372; p-value < 0.001). EC, SN and PBC all demonstrated a direct impact on GPI, though the correlation of SN is relatively weak. As a result, H5, H7, H10 are all supported. In addition, EC is proved to directly influence SN and PBC; specifically, the stronger impact is found in the relationship between EC and PBC; confirming H3, H4. H8, H9 are also supported because the result shows that SN positively and directly correlate with ATT and PBC, with the β and p-value stands at 0.156, 0.235 and 0.002, 0.000, respectively. FOC demonstrated a direct and significant effect on EC (β = 0.229; p-value < 0.001), confirming H1. The data illustrates a moderating effect of WTP on the relation between GPI and GPB (β = 0.292; p-value < 0.001), which means a higher in WTP among Zoomers consumers will give rise to a stronger correlation between GPI and GPB; thus, H12 is supported.

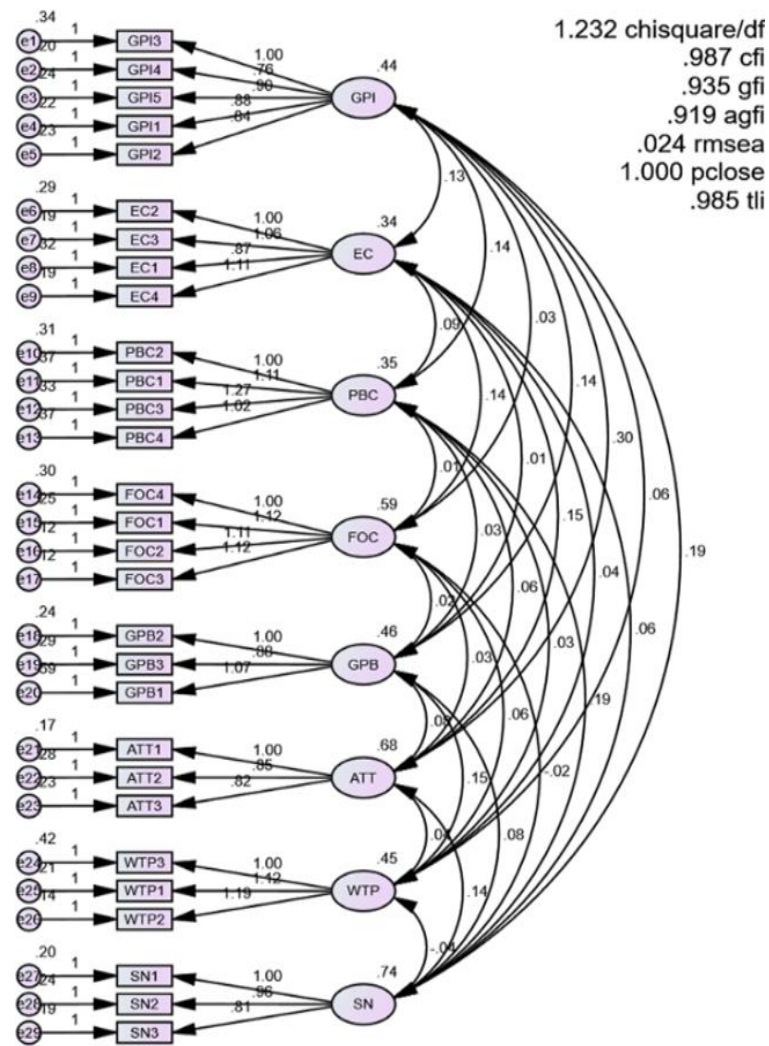


Figure 2. Measurement model
Source: Authors' calculations

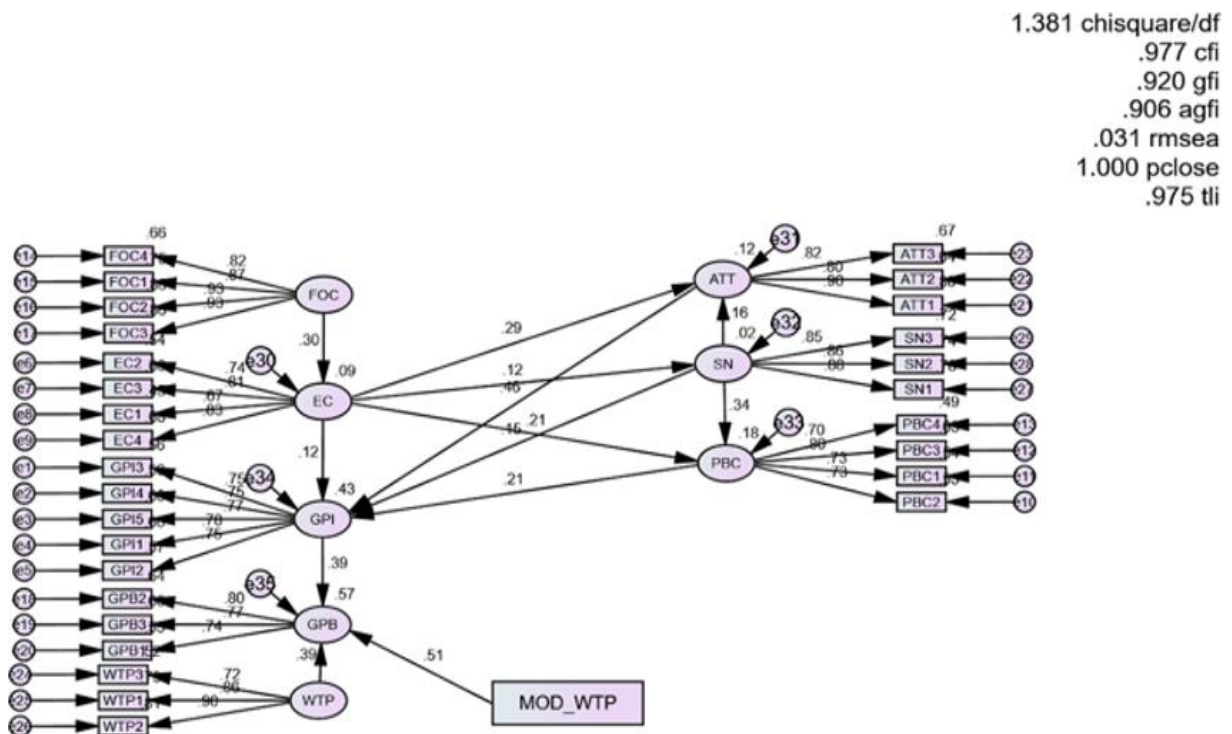


Figure 3. Structural model
Source: Authors' calculations

Table 4. Result of hypotheses testing

	Hypotheses	Estimate	SE	CR	p-value	Results
H1	FOC --> EC	0.229	0.042	5.412	***	Supported
H2	EC --> ATT	0.405	0.079	5.111	***	Supported
H3	EC --> SN	0.183	0.083	2.209	0.027	Supported
H4	EC --> PBC	0.215	0.057	3.756	***	Supported
H5	EC --> GPI	0.136	0.058	2.331	0.02	Supported
H6	ATT --> GPI	0.372	0.044	8.433	***	Supported
H7	SN --> GPI	0.117	0.039	2.99	0.003	Supported
H8	SN --> ATT	0.156	0.051	3.04	0.002	Supported
H9	SN --> PBC	0.235	0.039	6.009	***	Supported
H10	PBC --> GPI	0.238	0.062	3.869	***	Supported
H11	GPI --> GPB	0.418	0.052	7.976	***	Supported
H12	WTP --> GPI --> GPB	0.292	0.026	11.43	***	Supported

Note(s): N = 408, *** p < 0.001

Source: Author's calculations

5. DISCUSSION

This study attempted to examine factors affecting GPIs and behaviors among young consumers, in which the TPB model is extended with two new variables. The proposed model is used to test 11 direct relationships and 01 moderating effects, all of which are supported, yet with varying strengths. The results show that Gen Z's intention to purchase green products is driven mainly by their ATTs, and least by SNs. This research both confirms and extends findings from earlier studies in Vietnam [78, 79] and other developing economies [80, 81].

First, this study finds that FOC has a positive direct effect on EC ($\beta = 0.229$), supporting H1. In other words, FOC drives people to care more about the environment as part of broader concerns for societal well-being. When people experience higher levels of fear and anxiety, they may become more sensitive to issues related to sustainability and collective well-being. This echoes the idea of stress-coping framework [82] that external threats can push individuals to adopt value-driven coping strategies. Similar findings were reported by Laksmidewi and Gunawan [83], who showed that FOC increases anxiety, encourages simpler lifestyles, and thus shapes altruistic buying behaviors. Fear of future outbreaks were also found to raise awareness of environmental impacts [28, 29]. However, this relationship may differ by context. Grodzińska-Jurczak et al. [84] found that in Europe, rising health concerns during COVID-19 actually reduced consumer attention to environmental issues. Another key finding is that EC directly and positively influences ATT ($\beta = 0.405$), PBC ($\beta = 0.215$), and SNs ($\beta = 0.183$). Thus, H2, H3, and H4 are accepted. The strongest effect is on ATT, suggesting that consumers who are concerned about environmental issues are more likely to perceive sustainable behaviors as positive. This aligns with findings by Salimi [34] and De Canio et al. [85], who showed that EC significantly predicts positive ATTs toward eco-friendly consumption. The positive influence on PBC also indicates that EC encourages consumers' confidence in their ability to adopt green practices. Yadav and Pathak [56] similarly reported that individuals with stronger EC tend to feel more capable of performing sustainable behaviors. However, the relatively weak effect on SNs implies that EC is primarily internalized as a personal value rather than shaped by social expectations. Consumers who care about environmental issues may act out of intrinsic motivation, aligning sustainability with their self-identity, rather than because they feel pressured by significant others such as peers,

family, or society. In the context of Gen Z, this may be explained by generational characteristics that sustainability is often embraced as part of lifestyle identity rather than because of compliance with social expectations. Previous research has examined the influence of EC on ATT and PBC, but very few have investigated its effect on SNs. This study is therefore among the first to demonstrate that EC contributes little to normative pressure, adding new insights to the literature. EC also influences GPI (H5) ($\beta = 0.136$). In other words, when Gen Z consumers care about the environment, they may intend to act on it when making purchases. However, the effect is not significant, which aligns with the findings of Gleim et al. [86] and Johnstone and Tan [87]. These authors explain that EC alone does not guarantee green consumption, as consumers often face trade-offs between ecological values and practical needs. Joshi and Rahman [88] also noted that even when concern is high, barriers such as distrust of eco-labels and higher costs may prevent consumers from acting on their values. This finding differs from De Canio et al. [85], who found EC to be a key predictor of GPI. While studies by Zheng et al. [89] and Bulut et al. [90] show that higher ecological awareness can encourage pro-environmental behavior, it may not be enough on its own to drive specific buying decisions.

Second, GPI is determined by ATT ($\beta = 0.372$), PBC ($\beta = 0.238$) and SNs ($\beta = 0.117$), thus supporting H6, H7 and H10. This means that young consumers have higher intention to buy green products when they feel capable and receive support from important others. ATT has the strongest impact on GPI, making it the most significant predictor among the 11 paths tested. This suggests that young consumers' intentions are primarily shaped by their personal positive evaluations of green purchasing, which aligns with previous research [35, 91]. When consumers perceive green products as beneficial, they develop favorable evaluations that directly motivate purchase intention. In addition, when consumers feel confident in their ability to afford, access, and use green products, their purchase intentions increase. This is supported by Chen [92] and Nguyen et al. [93], who emphasized that availability, affordability, and ease of adoption strengthen consumers' sense of control and thereby encourage GPI. SNs are also found to have a significant direct effect on PBC ($\beta = 0.235$), but an insignificant impact on ATT ($\beta = 0.156$), which supports H8 and H9. It reflects that while social influence can help consumers feel more capable of acting sustainably, it may not necessarily change their internal positive or negative evaluations of green buying. Earlier studies, such as those by Kumar et al. [94] and De Canio et al. [85], also found that SNs

often play a secondary role compared with ATT and perceived control. The finding aligns with TPB literature, which often shows that SNs strengthen individuals' PBC by providing encouragement or reducing perceived barriers [16].

This study also reveals the significant relationship between GPI and GPB ($\beta = 0.418$), thus confirming H11. When young consumers form clear intentions to buy green products, they are more likely to follow through with actual purchases. This result, once again, supports the TPB, which posits that intention is the most immediate predictor of behavior [16]. It is also consistent with prior studies of Wang et al. [95], Ali et al. [96], showing that stronger purchase intentions lead to higher chances of engaging in pro-environmental purchasing. However, this relationship is positively moderated by WTP (H12; $\beta = 0.292$). Even if many consumers intend to buy green products, those ready to accept higher costs are more likely to translate such intentions into actual behaviors. This aligns with Chaudhary and Bisai [17], who showed that higher WTP strengthens the link between intention and behavior. Thus, this result helps explain and partially address the intention-behavior gap as often cited in green consumption [97].

6. CONCLUSION AND IMPLICATIONS

6.1 Conclusion

The study confirms factors that shape Gen Z consumers' green purchasing in Vietnam. FOC is found to significantly increase EC, which indicates that worries about health and global crises can make people more aware of their impact on the planet. EC alone, however, did not substantially drive purchase intentions, which were primarily shaped by ATTs. ATT impact on GPI is indeed the strongest path among the 11 tested. Moreover, WTP significantly moderated the intention-behavior relationship, which means that consumers ready to pay higher costs are likely to translate their intentions into actual purchases. This finding contributes to explaining the commonly observed intention-behavior gap in green consumption. These findings offer a more complete understanding of young consumers' green purchasing in such a developing market as Vietnam.

6.2 Theoretical implications

The results of this study have made important theoretical contributions. First, this study explored the direct and positive impact of FOC on EC among Vietnamese Zoomer consumers. This is an interesting finding as previous studies have not or not fully investigated this matter although green consumption is considered as an inevitable tendency in the future [14]. In addition, this finding also supports the conclusion of Qi et al. [11] that sensitivity for environmental issues still remains among consumers although the COVID-19 pandemic has gone away. Second, this study represents the combination of two additional variables namely FOC and EC into TPB. The analysis shows that the TPB framework could be adjusted by adding fresh psycho-social variables to better explain the intention and behavior towards green products among Zoomer consumers, especially when pandemic like COVID-19 happened. Thirdly, this research has made a theoretical contribution by confirming the moderating role of WTP in the relationship between GPI and GPB. When Zoomer consumers are willing to pay more money for greener products, the gap

between intention and behavior could be shortened. Finally, we explored that among three antecedents in the TPB model, ATT has the most significant impact on GPI while the influence of SN is the weakest. This finding once again confirms the conclusion of previous scholars about these correlations among ATT, SN and GPI [56, 98]. This is also similar to the Vietnamese context, numerous researchers have investigated the consumers' GPI, they also came to a conclusion that SN relatively has little or no significant impact on the intention [7, 8].

6.3 Practical implications

Based on the above findings, we suggest the following practical recommendations for policymakers, businesses, and green marketers aiming to foster green consumption propensity in Vietnam. First, since EC is found to have a direct impact on ATT, SN, PBC and PI, the authorities can implement more programs, events and even competition related to green consumption. This could fuel a rise in consumers' awareness of environmental issues. Second, as ATT is a key driver, communication strategies should focus on shaping positive ATTs towards green products. Because green advertising could help to shape consumers' attitudes by enhancing their perception of eco-friendly products [99], we suggest that businesses in Vietnam could launch green promotional and marketing campaigns. These campaigns can highlight the environmental and health benefits of green alternatives, using clear and relatable messages that resonate with local values and lifestyles. The governments also play a crucial role in strengthening public communication about the environmental benefits of using green products as environmental public communication is found to be effective in motivating sustainable behavior [100]. This can help increase consumers' confidence and make them more willing to purchase and use these products. Finally, as intention is the strong predictor of behavior, and WTP is confirmed to shorten the gap between these two variables, firms should focus on reducing barriers to action. This includes improving the availability and visibility of green products, ensuring pricing transparency, and offering small incentives such as green loyalty rewards or discounts. Digital platforms such as Facebook, Instagram or Zalo can be used to provide clear product information, verify eco-labels, and engage customers through interactive sustainability content.

6.4 Limitations and future research recommendation

Although this study offers valuable insights into the GPI and behavior of Vietnamese consumers, certain limitations should be acknowledged. First, the research was conducted using data collected from consumers in the northern provinces of Vietnam within a limited time frame. While the study focuses on Vietnamese consumers in general, the sample was primarily concentrated in the North, which may limit the generalizability of the findings. Future research should aim to include participants from a broader range of geographic regions across Vietnam to enhance the representativeness and applicability of the results to the national population. Second, this study did not explore the role of demographic variables in influencing GPI and behavior. Variables such as gender, age, educational qualification, occupation, marital status, and income could have meaningful impacts on how consumers perceive and engage with green products. Future studies are

encouraged to investigate the moderating or mediating roles of these demographic factors to provide a better understanding of green consumption behavior, especially among Generation Z consumers in Vietnam. Thirdly, the imbalance in gender and age distribution constitutes a limitation of this study. The findings might have differed with a more balanced sample, and future research should address this issue to improve generalizability. Finally, this study examined green products as a general category without distinguishing between specific types of products or services. However, consumers' attitudes, intentions, and behaviors may vary significantly depending on the product type, such as green food, eco-friendly fashion, or sustainable personal care products. Future research should consider investigating green purchase behaviors in relation to specific product categories to better understand consumer psychology and their behavioral intention.

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