

**Green purchase behavior of students in Ho Chi Minh City, Vietnam:
The integration of protection motivation theory and
theory of green purchase behavior**

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ARTICLE INFO	ABSTRACT
DOI:10.46223/HCMCOUJS. econ.en.16.4.3982.2026 Received: January 17th, 2025 Revised: April 05th, 2025 Accepted: May 02nd, 2025 JEL classification code: M11; M31; M37 <i>Keywords:</i> attitude toward green purchase; green trust; green purchase behavior; image of green purchase; perceived threat	This article examines the Green Purchase behavior (GP) of 305 students in Ho Chi Minh City, Vietnam, using the convenience sampling method to access the target audience easily. This study developed the research model based on the combination of the Protection Motivation Theory (PMT) and the Theory of Green Purchase Behavior (TGPB). Data is analyzed using the Structural Equation Modeling (SEM) method to test the proposed hypotheses. The results show that Perceived Severity (PS) and Perceived Vulnerability (PV) have significant relationships with GP. The relationship between PV, PS, and GP is mediated by Attitude toward Green Purchase (AGP) and Image of Green Purchase (IGP). Furthermore, the study highlights the crucial role of Green Trust (GTR) as a significant moderator in the relationship between PV and GP. The finding revealed that consumers require a clear, detailed image of green products to shift their perceptions and adopt sustainable behaviors. Furthermore, when they feel vulnerable to environmental risks, green trust becomes a key motivator for choosing green products. These insights offer businesses a better understanding of consumer needs and suggest more effective marketing strategies to drive positive environmental change.

1. Introduction

Environmental contamination severely threatens the planet’s sustainability, impacting air, soil, and water and causing significant harm to both the environment and human health (Awewomom et al., 2024). Meanwhile, rising environmental awareness is driving a shift in both mindset and behavior, with young students eagerly adopting greener shopping habits while remaining conscious of their impact. More and more young people have an environmental attitude towards green purchase through altruistic, individual, and environmental characteristics (Uddin & Khan, 2018). Furthermore, young students engage in GP not only for societal benefits but also to enhance their social standing (Caniëls et al., 2021).

Sustainable development, green consumption, and related topics are directly influencing lifestyles through different types of motivation (Ng et al., 2024). Moreover, students are increasingly prioritizing sustainability, specifically seeing green products and quality as key drivers of their purchasing decisions (Ansu-Mensah, 2021; Lopes et al., 2024). To understand

why students pursue sustainable lifestyles and how businesses can align with their purchasing behavior, we propose integrating the Protection Motivation Theory (PMT) (Rogers, 1975) and the Theory of Green Purchase Behavior (TGPB) (Han, 2020). Combining these two theories reveals the psychological drivers of GP and supports marketing strategies and policies to promote sustainable consumption. These theories suggest that GP, driven by environmental responsibility, involves factors like PS, PV, AC, IGP, AGP, and GTR.

Despite extensive research on GP, the topic has limitations, with many studies lacking consistency. Firstly, perceived threat was only examined in general awareness; the studies should be sought out to deeply examine accurate antecedents for both risk and trust (Cabeza-Ramírez et al., 2022). Secondly, awareness and activities evolve quickly over time, requiring adaptation to purchasing trends and demands to better align with environmental protection (Watson et al., 2024). Future research should integrate actual behavior and address the “attitude-behavior gap” to improve the validity and applicability of this study (Ahmad et al., 2022; Nguyen & Hoang, 2023). Thirdly, integrating TGPB and PMT is a novel aspect of this study, expanding TGPB to more responsibly showcase GP (Han, 2020) while also enhancing environmental awareness and promoting sustainable lifestyles.

To address gaps in the literature, this study will use the PMT and TGPB to explore the factors influencing students’ green purchase behavior, awareness among students in Ho Chi Minh City, Vietnam, pursuing sustainable lifestyles. The research aims to examine: (1) the direct impact of perceived severity and perceived vulnerability on green purchase behavior; (2) the direct effects of awareness of consequences, perceived severity and perceived vulnerability on attitude toward green purchase and image of green purchase; (3) the mediating roles of attitude toward green purchase and image of green purchase; and (4) the moderating role of green trust in the relationship between perceived severity and perceived vulnerability with green purchase behavior.

2. Literature review and hypotheses development

2.1. Protection Motivation Theory (PMT)

Developed by Rogers (1975), the Protection Motivation Theory (PMT) explains the motivations behind people’s protective behaviors against threats and has become particularly relevant in understanding environmental consumer behavior. It includes threat appraisal, which evaluates risks based on severity, vulnerability, and consequences, motivating precautionary behavior, and coping appraisal, which assesses the effectiveness of actions, self-efficacy, and perceived barriers to protection. Using PMT to explore green consumption has led to key findings: Gifford and Nilsson (2014) found in Canada that greater awareness of climate change effects increased the likelihood of purchasing green products, while Fielding et al. (2021) showed in Australia that awareness of fossil fuel costs encouraged investment in renewable energy. This highlights the balance between costs and benefits, along with long-term planning, in shifting perceptions and promoting sustainable consumption.

2.2. Theory of Green Purchase Behavior (TGPB)

Existing theories with prosocial and pro-environmental motives do not fully account for the variables that influence GP (Han, 2015). Specifically, there is a wealth of evidence that points to the importance of “attitudinal process” (Han, 2015) and “image of green purchase” (Xie et al., 2019) in explaining how they form environmentally conscious intentions to purchase green products (Xie et al., 2019). The researchers emphasized the importance of these concepts

in making decisions that are good for the environment. Merging the framework of existing theories with prosocial/environmental motives and critical factors like attitude and image identified as fundamental concepts in pro-environmental purchasing behavior - the TGPB explicitly addresses this issue (Han, 2020). TGPB considers factors such as awareness of consequences, attitude, and image when analyzing consumers' GP. In daily life, this theory effectively integrates social psychology theories on pro-social motivations, green purchase attitudes, and green purchase images. The TGPB can be used by consumer behavior sectors for a variety of green purchasing practices (Han, 2020).

2.3. The integration of the Theory of Green Purchase Behavior (TGPB) and the Protection Motivation Theory (PMT)

By merging TGPB and PMT, a theoretical framework that, to a large extent, can help explain sustainable customer behavior is presented. PMT (Rogers, 1975) focuses on internal motivators, such as perceived environmental threats (PS and PV) and self-efficacy, while TGPB emphasizes attitudinal processes and images, including "attitude of green purchase", "image of green purchase," and "awareness of consequences" (Han, 2020). Hence, "the TGPB represents a considerable improvement over the value - belief - norm and norm activation theories while retaining the core concepts of the theories" (Han, 2020, p. 2824). The integration of TGPB and psychological insights of PMT, arguably, has accomplished a fully inclusive role given to students as agents of change in a way that allows them to contribute to making real change in green consumption, which is meaningful and sustainable.

2.4. Constructs in research framework

2.4.1. Threat appraisal

The cognitive process of "threat appraisal" includes "perceived severity" and "perceived vulnerability" at the threat level (Rogers, 1975). "Perceived severity of the threat means the degree of seriousness of the possible harms that is perceived by an individual," and "perceived vulnerability reflects individuals' perceptions of their susceptibility to the harms" (Janmaimool, 2017, p. 4).

2.4.2. Awareness of Consequences (AC)

AC is an individual's awareness of the environmental harm caused by a behavior they value (Schwartz, 1992; Stern, 2000).

2.4.3. Attitude toward Green Purchase (AGP)

AGP shows the extent to which eco-friendly purchasing practices are valued favourably or unfavourably (Ajzen & Fishbein, 1980).

2.4.4. Image of Green Purchase (IGP)

IGP refers to "the set of impressions/perceptions that a consumer has regarding environmentally responsible purchase/consumption behaviors based on information, which is gained and processed over time" (Han, 2020, p. 2818).

2.4.5. Green Trust (GTR)

Chen (2010, p. 492) defines GTR as "a willingness to depend on one object based on the belief or expectation resulting from its credibility, benevolence, and ability about environmental performance".

2.4.6. Green Purchase behavior (GP)

GP refers to “consumers’ actions of purchasing green products informed by environmental concern as the main focus in every purchase decision” (Ahmad et al., 2022, p. 70).

2.5. Hypothesis development

2.5.1. The relationship between PS and PV with GP, IGP, and AGP

Two variables of threat appraisal are PS and PV. An individual’s PS is an assessment of what a threat could do to physical, psychological, or economic (Gamma et al., 2017). Regardless of the nature of a business, it always has to counter the threats posed to its environment and implement sustainable policies, reduce environmental loss, enhance green products and brands, and turn to sustainable consumption behavior (Karelakis et al., 2024). Consumers who perceive environmental responsibility tend to adopt the idea of environmentally friendly products and subsequently engage in sustainable green shopping behavior (Zheng et al., 2021). Based on this evidence, the following hypotheses are proposed:

H1: PS has a positive effect on GP

H2: PS has a positive effect on IGP

H3: PS has a positive effect on AGP

High PV may increase GP because consumers will probably feel a significant personal threat from environmental contamination (Ruan et al., 2020). PMT hypothesizes that PV can cause fear when people have negative outcomes, motivating them to change their AGP to avoid threats (Chen, 2020). IGP refers to “the set of impressions/perceptions that a consumer has regarding environmentally responsible purchase/consumption behaviors based on information, which is gained and processed over time” (Han, 2020, p. 2818). When it comes to green consumer behavior, PV frequently results from worries about environmental damage, climate change, or the effects of unsustainable practices (Nguyen et al., 2025). According to Sheikh et al. (2023), consumers’ PV as manageable or outweighed by the benefits can improve the IGP by emphasising their worth and dedication to sustainability. Based on these points, we propose the following hypotheses:

H4: PV has a positive effect on GP

H5: PV has a positive effect on AGP

H6: PV has a positive effect on IGP

2.5.2. The relationship between AC and IGP, AGP

AC is an individual’s understanding of how their actions affect the environment, influencing their attitude towards green purchases and motivating them to support a better environment. Iqbal et al. (2021) found that individuals aware of environmental consequences tend to form a positive image of green purchasing, extending their green buying behavior. Similarly, Nomzamo et al. (2024) showed that such awareness encourages more responsible purchasing, especially for products with sustainable packaging. This awareness shapes consumer preferences and guides businesses in designing products that meet the rising demand for sustainability. Additionally, it helps maintain the image of green purchasing and encourages consumers to adopt a proactive approach. Based on these findings, we propose the following hypotheses:

H7: AC positively affects the IGP

H8: AC positively affects AGP

2.5.3. *The role of IGP as a mediator*

Research suggests that high-perceived-threat consumers use word-of-mouth, advertising, and interpersonal sources for information (Garner, 1986). Cox (1967, p. 618) says that “the consumer will use information that is relevant to the type of problem she is facing; that is, information that promises to reduce the type of perceived risk variance”. However, little empirical research has examined how perceived threat (PS, PV) affects IGP. We propose that under high risk, consumers find certain green image information more diagnostic (Gürhan-Canli & Batra, 2004) for product evaluations. IGP improves the perception of green products, and their recognition increases, increasing the likelihood that consumers will have the intention to buy them. According to this logic, IGP affects the GP of customers (Yang et al., 2023). Based on these findings, we propose the following hypotheses:

H9a: IGP mediates the relationship between PS and GP

H9b: IGP mediates the relationship between PV and GP

2.5.4. *The mediating role of AGP*

Pollution involves the release of harmful substances into the environment, disrupting ecosystems that support life (Raj et al., 2023). Beyond its visible damage, pollution poses health risks, leading to diseases and deaths from environmental exposure (Shetty et al., 2023). AGP reflects a tendency to view eco-friendly purchasing positively or negatively. Consumers with a positive AGP are more prone to engage in behavior for protecting the environment (Zainuddin et al., 2023). When consumers make a direct association between purchasing and environmental conservation, they are more likely to adopt GP (Wang et al., 2020). This highlights the need to develop positive AGP, which will then support sustainability. Based on these findings, we propose the following hypotheses:

H10a: AGP mediates the relationship between PS and GP

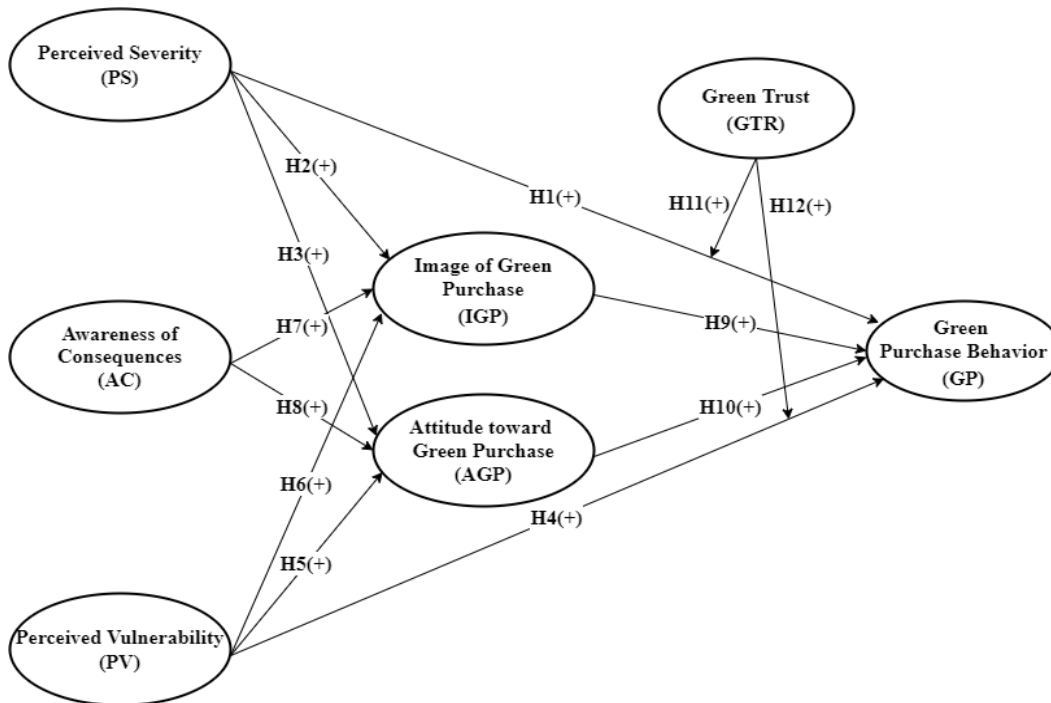
H10b: AGP mediates the relationship between PV and GP

2.5.5. *The moderation role of GTR*

Relationship marketing literature states that trust is the foundation of a relationship (Chen, 2010). According to numerous studies, buyer-seller trust increases consumer loyalty to a business (Li et al., 2021). Trust is essential when knowledge is scarce, uncertainty and risk are high (Choi et al., 2015). Mutual trust reduces purchase risks and complications, improving consumers' behavior (Morgan & Hunt, 1994). Green Trust (GTR) is “a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance” (Chen, 2010, p. 309). Research found that GTR affects customers' decisions in the age of environmentally and socially responsible consumption (Amin & Tarun, 2021; Chen, 2010). Lee (2020) found that trust reduced consumers' risk perceptions. This increased consumers' likelihood of buying green products. Customers who care more about climate change and trust green products will contact suppliers to learn more, develop PS and PV, and encourage GP. Thus, buyers concerned about climate change and confident in eco-friendly products are more likely to buy green products for personal and environmental reasons (Li et al., 2021). This study suggests that GTR moderates the positive relationship between consumers' perceived threat (PS and PV) and their GP.

H11: GTR moderates the relationship between the PS and GP

H12: GTR moderates the relationship between the PV and GP

Figure 1*Hypothesized Model*

Note. Authors

3. Methodology

3.1. Data collection and sample

Undergraduates in Ho Chi Minh City, Vietnam, are the study's target population. Larger cities, like Ho Chi Minh City, typically have the biggest environmental impact in emerging economies. Before data collection, the questionnaire (n = 10) is pre-tested in person with a small, representative sample of respondents. The goal is to determine whether any statements are too hard to understand due to odd language, grammar, or wording (Ha et al., 2022), proving the questionnaire's construct validity (Shadish et al., 2002). The pre-test results indicate that respondents are unsure of what "green trust" means, and they recommend that the questionnaire be amended to provide clarification. We then incorporate the explanation of "green trust" and multiple instances of it into the questionnaire for this study.

Convenience sampling was employed in the study to reduce expenses and make it simple to contact the intended respondents. In-person interviews with questionnaires were used to collect data (Ha et al., 2022; Malhotra, 2020). Additionally, the Google form was used to gather more online data. Ultimately, for the three months from April to June 2024, 305 completed responses were gathered. After removing biased responses, we obtained an effective response rate of 75.3%, leaving 305 valid responses for further analysis.

3.2. Measurement of constructs

The measurement scales were adapted from previous studies in the field and used a 5-point Likert scale, ranging from 1 = "strongly disagree" to 5 = "strongly agree". Specifically, PS was measured with 03 items (PS1 - PS3), and PV was measured using 03 items (PV1 - PV3) derived from the foundational work of Rainear and Christensen (2017). AC included 03 items (AC1 - AC3), adapted from Han (2020). IGP was measured using 03 items (IGP1 - IGP3),

developed based on Han (2020). AGP was measured with 05 items (AGP1 - AGP5), adapted from Han (2020). GTR was measured with 05 items (GTR1 - GTR5), derived from the research of Chen and Chang (2012). Lastly, GP was measured with 03 items (GP1 - GP3), adapted from Ahmad et al. (2022).

3.3. Data analysis

Data was analyzed using Amos 24 software. Seven constructs were tested for convergent validity using metrics like Cronbach's Alpha, AVE, CR, and normalization recovery (Hair et al., 2019). Furthermore, we use indexes such as CMIN/df, TLI, CFI, and RMSEA to evaluate the suitability of the theoretical model. Researchers use SEM to examine the mediating behavior of variables in a model, encouraging the section on work studying mediating variables (Manosuthi et al., 2020).

4. Empirical findings

4.1. Description of sample characteristics

Regarding gender, males comprised 39.2% of the participants and females 60.8%. In total, 55.1% were under the age of 20, 32.7% were between the ages of 20 and 22, and the remainder were over the age of 22. Regarding majors, 32% were business and management, 23% were engineering, and the remainder were other majors. Furthermore, 37.9% were 1st-year students, 17.1% were 2nd-year students, and the remainder were 3rd-year students. The basic demographic information of the survey respondents is presented in Table 1.

Table 1

Characteristics of Sample Respondents

Characteristics	Frequency	Percent
Gender:		
- Female	121	60.8%
- Male	184	39.2%
Age (years old):		
- Below 20	169	55.1%
- 20 - 22	98	32.7%
- Over 22	38	12.2%
Major:		
- Business and management	99	32%
- Engineering	71	23%
- Others	135	45%
Academic year:		
- 1st-year student	117	37.9%
- 2nd-year student	53	17.1%
- Others	135	45%
N = 305		

Note. The data are from authors

4.2. Evaluation of measurement model

As GTR5 had a correlation coefficient below 0.3, it was removed for not meeting the criteria (Cristobal et al., 2007). Hair et al. (2019) suggest that a scale is considered reliable if it achieves a Cronbach's Alpha threshold of 0.7 or higher. After removing the variables with low values, all remaining constructs had Cronbach's Alpha values above the recommended threshold. The IGP scale had the lowest value at 0.863, while the AGP scale had the highest at 0.965, indicating excellent reliability. To begin, it is crucial to assume that the data are normally distributed (Collier, 2020; Kline, 2015). A test for kurtosis and skewness is used to determine normality. If the kurtosis is less than an absolute 7.0 and the skewness is less than an absolute 3.0, the data is considered normal (Collier, 2020; Kline, 2015). In the normality test, the kurtosis ranges from 0.169 (GP3) to 3.542 (PV1), and the skewness ranges from -1.640 (GP2) to -0.161 (PS2). This means that the data is normally distributed.

As per Hair et al. (2019), measurement indicators such as AVE, CR, and standard regression weights were utilized to assess the quality of the scales. Based on the results, it is demonstrated that the model makes a significant contribution to the research. All constructs have AVE values exceeding the recommended threshold of 0.5 (ranging from IGP = 0.687 to AGP = 0.850); all constructs have CR values higher than the recommended threshold of 0.7 (ranging from IGP = 0.868 to AGP = 0.966), and all items exhibit standardised regression weights above the recommended threshold of 0.5.

Table 2

Scales in the Research Model

Observable Variable	Explanation	Loading	AVE	CR
Perceived Severity				
PS1	Environmental pollution has evolved into a critical danger to human survival	0.887***		
PS2	The effects of depleting natural resources are catastrophic	0.888***	0.710	0.879
PS3	I get scared when I think about climate change	0.744***		
Perceived Vulnerability				
PV1	Environmental pollution could harm me	0.843***		
PV2	I am likely to face the adverse effects of climate change in my lifetime	0.864***	0.740	0.895
PV3	I am at risk of the harmful effects of climate change	0.873***		
Awareness of Consequences				
AC1	The present industries contribute to pollution, climate change, and the loss of natural resources	0.843***	0.760	0.905

Observable Variable	Explanation	Loading	AVE	CR
AC2	Current industries affect the local environment and the wider ecosystem	0.937***		
AC3	Industries today lead to environmental harm	0.842***		
Image of Green Purchase				
IGP1	I feel positive about buying green products from companies that offer them	0.848***		
IGP2	I generally have a favourable view of selecting green products over traditional ones	0.873***	0.687	0.868
IGP3	I have a positive perception of products from eco-friendly businesses	0.876***		
Attitude Toward Green Purchase				
AGP1	Buying green products from businesses benefits me	0.867***		
AGP2	Choosing green products from businesses is a smart decision	0.911***		
AGP3	Buying green products from businesses brings me satisfaction	0.962***	0.850	0.966
AGP4	Buying green products from businesses is advantageous for me	0.947***		
AGP5	Buying green products from businesses makes you feel good	0.920***		
Green Trust				
GTR1	I believe the brand's environmental claims	0.823***		
GTR2	The brand I select is dependable in its environmental practices	0.869***		
GTR3	The brand I pick is transparent about its environmental impact	0.882***	0.743	0.920
GTR4	I have faith in the brand's environmental commitments	0.872***		
GTR5	The brand I prefer is reliable when it comes - to environmental responsibility (d)			

Observable Variable	Explanation	Loading	AVE	CR
Green Purchase Behavior				
GP1	I will buy green products from companies that focus on eco-friendly products rather than traditional ones	0.887***		
GP2	When given the choice, I will opt for products from businesses offering green alternatives instead of conventional ones	0.945***	0.789	0.918
GP3	I will make an effort to buy from green businesses rather than conventional ones	0.830***		

Note. (d) indicates that measures fail the validity and reliability tests; *** indicates significance at $p < 0.001$; The data are from authors

Henseler et al. (2015) suggested that the HTMT ratio ensures discriminant validity when the latent variable correlation between two constructs is below 0.85. A violation occurs if the value exceeds 0.85. The HTMT values from the analysis are shown in Table 3.

Table 3

HTMT Analysis

	AGP	GTR	AC	GP	PS	PV	IGP
AGP							
GTR	0.602						
AC	0.563	0.403					
GP	0.584	0.538	0.296				
PS	0.382	0.321	0.304	0.439			
PV	0.600	0.536	0.572	0.420	0.451		
IGP	0.545	0.485	0.300	0.574	0.373	0.343	

Note. HTMT < 0.85. The data are from authors

We used the following indices: CMIN/df = 2.609, SRMR = 0.047, CFI = 0.944, TLI = 0.933, and RMSEA = 0.073. According to Hu and Bentler's (1999) evaluation criteria, these indices meet the acceptable thresholds, confirming that the research model fits the data well.

4.3. Evaluation of structural model

The test results indicate that all analytical indicators meet the necessary standards, confirming that the research model has a high level of fit. Several indices were measured, including SRMR (0.091), CFI (0.925), TLI (0.911), and RMSEA (0.078). Overall, according to all fit indices, the model achieves a good level of fit (Hair et al., 2019; Hu & Bentler, 1999).

The SEM analysis results for the impact relationships in H4 and H7 show that $p > 0.10$, indicating that these relationships are not statistically significant enough to support the hypotheses (Hair et al., 2019). The remaining hypotheses all show positive effects at different

levels of significance, and the relationships are in the expected direction, as indicated by the positive standard regression weights. However, while H11 is statistically significant ($p < 0.01$), the test results show a negative effect, with a standardised regression weight of -0.139. Therefore, hypothesis H11 is not supported. The R^2 (Squared Multiple Correlation: SMC) of IGP was 0.20, for AGP was 0.47, and for GP was 0.45. The hypothesis testing results for evaluating the structural model can be observed in Table 4.

Table 4

Path Analysis Results

Hypothesized relationships	Proposed effects	SRW	P	Results
H1: PS $\rightarrow$ GP	Positive	0.119	0.049	Supported
H2: PS $\rightarrow$ IGP	Positive	0.238	***	Supported
H3: PS $\rightarrow$ AGP	Positive	0.115	0.028	Supported
H4: PV $\rightarrow$ GP	Positive	0.116	0.180	Not Supported
H5: PV $\rightarrow$ AGP	Positive	0.424	***	Supported
H6: PV $\rightarrow$ IGP	Positive	0.213	0.007	Supported
H7: AC $\rightarrow$ IGP	Positive	0.119	0.105	Not Supported
H8: AC $\rightarrow$ AGP	Positive	0.288	***	Supported
H9: IGP $\rightarrow$ GP	Positive	0.250	***	Supported
H9a: PS $\rightarrow$ IGP $\rightarrow$ GP	Positive	0.059	0.005	Partial Mediation
H9b: PV $\rightarrow$ IGP $\rightarrow$ GP	Positive	0.053	0.036	Full Mediation
H10: AGP $\rightarrow$ GP	Positive	0.263	***	Supported
H10a: PS $\rightarrow$ AGP $\rightarrow$ GP	Positive	0.030	0.042	Partial Mediation
H10b: PV $\rightarrow$ AGP $\rightarrow$ GP	Positive	0.111	0.002	Full Mediation
H11: PSxGTR $\rightarrow$ GP	Positive	-0.139	0.007	Not Supported
H12: PVxGTR $\rightarrow$ GP	Positive	0.253	***	Supported

Note. *** $p < 0.001$, SRW: Standardized Regression Weight. The data are from authors

4.4. Mediation analysis

Mediation analysis using the bootstrapping method clarified the relationships in H9a, H9b, H10a, and H10b. The bootstrapping process involved 2,000 samples (including the original data), with 1,999 repetitions to assess the significance of indirect effects. The analysis used a 95% bias-corrected confidence interval, ensuring accuracy and reliability (Taylor & MacKinnon, 2012).

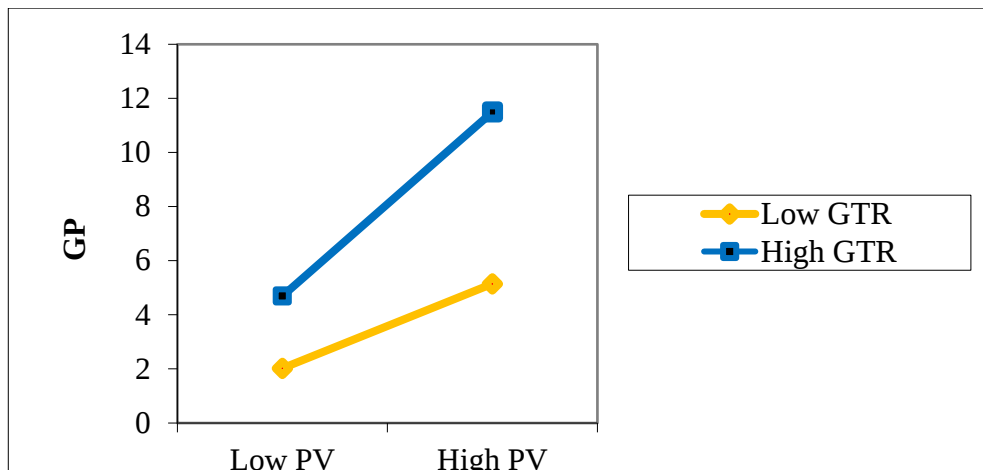
The data show that the relationships between PS - GP and PV - GP are partially mediated through IGP and AGP. Table 4 shows that the direct and mediated relationships of H9a and H10a suggest partial mediation, as the p-values for both direct and indirect relationships are below 0.05. Finally, H10a and H10b show full mediation, as the p-value for the direct relationship PV - GP is insignificant ($p = 0.180$). However, the indirect effects of H9b and H10b are significant ($p < 0.05$), indicating that IGP and AGP fully mediate the PV - GP relationship.

4.5. Moderated interaction analysis

Models were developed to examine the process, including all variables such as the independent and dependent variables, moderators, and interaction terms (Collier, 2020). The results show that the negative impact of H11 contradicts the theoretical predictions, so hypothesis H11 is not supported. Figure 2 confirms that H12 highlights the crucial role of GTR in effectively moderating the relationship between PV and GP, especially at high levels of GTR ($\beta = 0.253$, $p < 0.001$), supporting hypothesis H12.

Figure 2

The Moderating Effect of GTR on the Positive link PV - GP



Note. The data are from authors

5. Discussion

This paper explored GP among students in Ho Chi Minh City, Vietnam, by integrating TGPB and PMT. The SEM results support most hypotheses, except for H4, H7, and H11. GP is strongly and favourably impacted by PS and PV (H1 and H2 were supported). This validates previous findings (Ruan et al., 2020). This research suggests that students' perceptions of environmental challenges, damage, vulnerability, and severity may affect their GP. To put it simply, individuals who deeply understand the problem of environmental degradation are more likely to use green products daily.

The analysis shows that PS, PV have a strong relationship with IGP and AGP (H2, H3, H5, and H6 were supported). According to PMT, exposure to potentially frightening information gives people the motivation to scan their surroundings for pertinent or salient information, even though prior research has not explored connections between PS, PV, and IGP. Furthermore, these results are consistent with those of Guo et al. (2015), who showed that PMT components affect the intention to adopt m-health services based on attitude. PS and PV can quantify the anticipated costs associated with not purchasing green products, which would enhance an individual's attitude. Moreover, the results supported the positive nexus between AC and AGP (H8). Consumers' sense of personal moral obligation to purchase green products is a personal norm, and Han (2020) argues that AGP is formed based on negative consequences for valued objects, such as AC.

The findings showed that H9 and H10 were supported. Ahmad et al.'s (2022); Nguyen and Hoang's (2023) findings supported these hypotheses. Attitudes are crucial in the context of GP because when inundated with product information, consumers who are at the center of the decision-making process may encounter uncertainty and other obstacles (Nguyen & Hoang,

2023). The mediating relationships are defined by H9a, H9b, H10a, and H10b, which suggest that AGP and IGP serve as key bridges linking PS, PV, and GP. Additionally, H9b and H10b indicate full mediation; PV influences GP only through AGP and IGP. These results align with the findings of Wang et al. (2022) about attitude towards green brands mediating the relationship between green customer value and green purchase intention through perceived values and environmental issues. AGP and IGP mediate this, indicating that appealing images and positive attitudes toward green products are crucial for promoting long-term green consumption.

The moderating effect tests supported H12, indicating that GTR has a positive moderating effect on the impact of PV on GP. Nevertheless, the tests disproved GTR's capacity to moderate the relationship between PS and GP (H11 was not supported). The moderating effect of GTR on GP has been studied previously (Li et al., 2021; Wang et al., 2022), but no studies have looked into this effect on PV - GP binding. The findings confirmed our research hypotheses, demonstrating that PV increased the promotion effect of GP when GTR was high. As mentioned earlier, trust is an emotional state where one is willing to take a chance on being exposed in exchange for favourable expectations of their behavior (Wang et al., 2022).

6. Conclusion and implications

6.1. Conclusion

The integration of PMT and TGPB represents a significant advancement in understanding the GP of students in Ho Chi Minh City, Vietnam. This research demonstrated that PS has a lasting impact on GP, with AGP and IGP serving as key mediators in the indirect relationship between PS, PV, and GP. Additionally, GTR moderates the relationship between PV and GP. In conclusion, this study enriches the literature on GP. Moreover, the study demonstrated that AGP, IGP, and GTR play significant roles in green marketing while also increasing consumer awareness about green products to promote sustainable lifestyles. This research not only introduces new insights but also contributes to the development of studies on GP. As a result, the predictive power of the initial integration of PMT and TGPB is strengthened.

6.2. Theoretical implications

The study provides valuable evidence, uncovering new insights that contribute to theories on purchasing trends related to green and sustainable lifestyles. Firstly, students are increasingly aware of the perceived threat related to purchasing green products, highlighted by the integration of PMT and TGPB. Specifically, TGPB includes factors that support social motivations and the concept of green buying for all (Han, 2020); PMT explains the pro-environmental actions of students (Shafiei & Maleksaeidi, 2020). This combination highlights GP, from awareness of environmental issues to the purchasing actions of students, with trends and psychology being key factors influencing their intentions and consumption. Finally, GTR moderates the relationship between PV and GP, increasing students' environmental awareness and fostering trust in sustainable purchasing behavior. Trust also plays a key role in positioning green brands and influencing consumer perceptions of green products (Wang et al., 2022). This study demonstrates GTR's impact on PV and GP, providing a foundation for developing attitudes, intentions, and behaviors related to students' green trends.

6.3. Practical implication

The current study's results have several practical implications. With a rapidly growing young population and a booming economy, Vietnam is becoming a key market for both domestic companies and multinational corporations. Additionally, students in Ho Chi Minh City,

Vietnam, are continually reshaping purchasing trends. Businesses must develop effective strategies within their departments to enhance brand recognition and boost revenue in this highly competitive market. Research shows that the integration of PMT and TGPB, with PS directly influencing GP, while PS and PV indirectly affect GP through AGP and IGP. Instead of focusing on non-green purchases or unsustainable lifestyles, providers should highlight environmental awareness and threat appraisal via videos, posts, and clips on social media to enhance perception and green brand recognition. Providers should conduct in-depth studies on students' green purchasing trends, focusing on the health and life benefits of eco-products. This will raise environmental awareness and attract loyal, potential customers to the brand. Based on the study's findings, AGP and IGP are key mediators in improving GP among students in Ho Chi Minh City, Vietnam. These steps enhance awareness and intention toward sustainable green lifestyles. Additionally, businesses can innovate in production and green marketing strategies to create a long-lasting impact and build eco-brand recognition.

The findings also revealed that GTR moderates the relationship between PV and GP, with PV having a stronger impact on GP when GTR is high. Therefore, students' GP is influenced not just by awareness of environmental threats but also by GTR, which is a crucial factor in shaping their perceptions and commitment to sustainable lifestyles. Furthermore, businesses should implement policies and strategies promoting environmental friendliness, such as sustainable production processes, eco-labeling, and green services, to ensure stability and meet the growing demand of environmentally conscious consumers. However, as youth purchasing trends evolve, retaining loyal customers becomes challenging for many businesses in a growing economy. Brands should strengthen their identity by emphasizing the green value of eco-products, sustainability declarations, and environmental actions to build strong consumer recognition. Additionally, companies must address risks, manage misinformation, and maintain a fair, healthy environment for both manufacturers and consumers.

6.4. Limitations

While this study identifies factors influencing GP among Vietnamese students, it has some limitations. First, it uses a cross-sectional design with data collected at a single point in time. Additionally, the focus is mainly on students in Ho Chi Minh City, Vietnam. Future research could expand the scope to include other generations and regions to enhance generalisability and reliability. This study also represents the first integration of PMT and TGPB; future studies could enrich the model by incorporating additional factors like price sensitivity, value, and time commitment. Moreover, modifying the theories could further develop and refine the findings.

SCIENTIFIC CONTRIBUTION

The manuscript clearly identifies a research gap; the manuscript proposes a new theoretical model; the manuscript offers managerial implications.

AUTHOR CONTRIBUTIONS

CRedit: **Pham Thi Thu Hien**: Conceptualization, Visualization, Project Administration; **Doan Bao Son**: Conceptualization, Methodology, Software, Validation, Writing - Review & Editing, Supervision; **Nguyen Huy Phuc**: Investigation, Writing - Original Draft, Funding Acquisition; **Nguyen Ngoc Kieu Anh**: Investigation, Writing - Original Draft; **Nguyen Dinh Loc**: Investigation, Data Curation, Writing - Original Draft; **Tong Tinh Nghi**: Investigation, Data Curation, Writing - Original Draft.

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NO CONFLICT OF INTEREST STATEMENT

All authors declare that they have no conflict of interest.

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