

Make Your Publications Visible.

A Service of



Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre

Hoang, Dinh Van; Tung Le Thanh

Article

Relationship between environmental concern, green perceived value and green purchase behaviour: The moderating role of price consciousness

Organizations and Markets in Emerging Economies

Provided in Cooperation with:

Vilnius University Press

Suggested Citation: Hoang, Dinh Van; Tung Le Thanh (2024): Relationship between environmental concern, green perceived value and green purchase behaviour: The moderating role of price consciousness, Organizations and Markets in Emerging Economies, ISSN 2345-0037, Vilnius University Press, Vilnius, Vol. 15, Iss. 2, pp. 248-266, https://doi.org/10.15388/omee.2024.15.12

This Version is available at: https://hdl.handle.net/10419/317264

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.



https://creativecommons.org/licenses/by/4.0/

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.





Organizations and Markets in Emerging Economies 2024, vol. 15, no. 2(31), pp. 248–287

ISSN 2029-4581 eISSN 2345-0037 DOI: https://doi.org/10.15388/omee.2024.15.12

Relationship Between Environmental Concern, Green Perceived Value and Green Purchase Behaviour: The Moderating Role of Price Consciousness

Dinh Van Hoang

Graduate School, Ho Chi Minh City Open University, Vietnam hoangdv.22ab@ou.edu.vn https://orcid.org/0000-0003-0424-9762 https://ror.org/00tean533

Le Thanh Tung (corresponding author)

Policy and Applied Economics Research Group,
Faculty of Economics and Public Management, Ho Chi Minh City Open University, Vietnam tung.lt@ou.edu.vn
https://orcid.org/0000-0001-8487-2217
https://ror.org/00tean533

Abstract. Growing environmental concerns influence consumer buying decisions and behaviours. This study investigates the factors that affect the green purchase behaviours of Generation Z consumers in Vietnam. Employing the value—attitude—behaviour (VAB) framework, the study examines the intricacies of green consumption behaviour. Study data were collected through an online questionnaire from 283 young Vietnamese consumers who frequently purchase green products. We performed the quantitative analysis by the partial least squares structural equation modelling (PLS-SEM) and found that price consciousness and attitude towards green products directly influence green purchase behaviour. Environmental concern and green perceived value indirectly influence green purchase behaviour through consumer attitude. Furthermore, the influence of price consciousness enhances the relationship between attitude and green purchase behaviour. These findings provide valuable implications for managers aiming to attract young, environmentally conscious consumers and promote green consumption behaviours.

Keywords: customer attitude, environmental concern, green perceived value, green purchase behaviour, price consciousness

Received: 8/2/2024. Accepted: 14/6/2024

Copyright © 2024 Dinh Van Hoang, Le Thanh Tung. Published by Vilnius University Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Introduction

Global recognition of environmental issues has increased over the last few decades, accompanied by increasing demands for measures that address climate change and encourage environmentally friendly consumerism (Campbell et al., 2018). A strong commitment to sustainability has fuelled the growing momentum of the global green consumer revolution (Akenji, 2014), as customers actively advocate for environmentally friendly products (Cheung & To, 2019). Green consumption, a topic that has attracted significant interest from many marketing researchers and practitioners in recent years, continues to be a key factor in the promotion of environmental responsibility and sustainable behaviours (Biswas & Roy, 2015).

Extensive study of the influence of personal values on consumer attitudes and behaviour in the current literature has yielded mixed findings (Gravelines et al., 2022). Several studies have shown that personal values, including green perceived value, altruism, egotism, ecological value and environmental concern, play a significant role in shaping consumer decisions and behaviours (Suki & Suki, 2019; Tanrikulu, 2021; Woo & Kim, 2019; Yacout, 2023). At the same time, other studies have found that altruistic, social, conditional and perceived values, as well as environmental concern, do not affect environmentally friendly purchasing behaviour (Biswas & Roy, 2015; Duong et al., 2022; Hamzah & Tanwir, 2021; Van Doorn & Verhoef, 2015). Testa et al. (2021) asserted the need for further research on the mechanisms that stimulate the purchase of green products. Further studies have focused on personal values, attitudes, behaviours and contexts needed to predict behavioural outcomes (Cheung & To, 2019). To address this gap, our study focuses on the dual personal values of environmental concern and green perceived value and their effect on attitudes and behavioural outcomes.

The value of environmental concern is positively correlated with concern for others, the environment and the planet (Leary et al., 2014). Customers' individual mindsets and underlying value systems determine their level of environmental concern (Schwartz, 1992). Those who prioritise preserving the natural world, protecting ecosystems and promoting sustainability typically exhibit greater environmental consciousness (Gifford & Nilsson, 2014). Altruism, biospheric value and self-transcendent motivations that extend beyond self-interest also influence an individual's environmental concern (De Groot & Steg, 2007; Milfont & Gouveia, 2006). The value-based hypothesis suggests that perceptions of negative environmental impacts reduce the relationship between values and concern, implying that environmental attitudes arise from general rather than specific values (Schultz, 2001). Chen and Chang (2012, p. 505) defined green perceived value as 'a consumer's overall evaluation of a product or service's net benefit, considering received versus given benefits, grounded in their environmental desires, sustainable expectations, and green needs. The existence of these two values (i.e. environmental concern and green perceived value) is referred to as 'dual personal values'.

Previous studies of green consumption have mostly concentrated on exploring the determinants of consumer intentions to purchase green purchases rather than actual purchasing behaviours (Testa et al., 2021). The focus has also primarily been on developed countries, disregarding green consumer behaviours in developing countries (Nguyen et al., 2024). Our study focuses exclusively on the Vietnamese context to help overcome the scarcity of research in developing countries and explore the impact of national culture on attitudes and behaviours related to environmental concerns.

Price is a pivotal factor influencing green purchasing behaviour, as the elevated costs associated with environmentally friendly products impact consumers' willingness and ability to buy, particularly among low-income households, who may perceive these prices as significant barriers (Sun & Wang, 2020). Price consciousness is critical to making green purchasing decisions. Consumers who have affordability may choose to purchase green products because they believe that the advantages the products confer outweigh the costs. Consumers with sufficient financial resources tend to have lower price consciousness, making them more receptive to purchasing green alternatives (Wang et al., 2018).

Within the domain of green consumption, purchasing attitudes towards green product items can be either positive or negative (Varah et al., 2021). Attitudes, which are internal reactions, originate from behaviours. This causal cycle is consistent with consumer behaviour, which emphasises the progression from attitude to intention to behaviour (Solomon, 2020). However, the impact of attitude on behaviour may not always align, especially in situations featuring environmentally friendly purchasing (Chaihanchanchai & Anantachart, 2023). While some research has shown attitude to have a direct influence on pro-environmental behavioural intentions (Yadav & Pathak, 2017), other studies have found weak or moderate correlations between attitude and actual behaviours (Bamberg, 2003; Chaihanchanchai & Anantachart, 2023). This discrepancy represents the incongruity between attitudes and actual behaviours.

Our study explores how dual personal values (i.e. environmental concerns and green perceived value) and price consciousness affect attitudes toward green products. It further explores the role of price consciousness as a moderator in influencing the link between attitude and green purchasing behaviour. We formulate three research questions (RQ) to address these objectives:

RQ1: What dual personal values (i.e., environmental concern and green perceived value) influence attitude?

RQ2: How do attitudes toward green products and price consciousness influence green purchasing behaviour?

RQ3: Does price consciousness moderate the link between attitude and green purchasing behaviour?

This paper makes several contributions to the existing literature. First, we broaden the value–attitude–behaviour (VAB) framework of Homer and Kahle (1988) by exploring the dual-value constructs of environmental concern and green perceived value. We describe the ways in which these values can affect attitudes, which in turn shape consumption intentions and behaviours in the emerging market of Vietnam. Second, this study provides new insights into the dynamic mechanisms that influence consumers' attitudes toward green consumption by investigating the moderating role of price consciousness. Third, we offer recommendations not only for entrepreneurs but also for policymakers for enhancing green consumption behaviours in the future.

2. Theoretical Framework and Hypothesis Development

2.1 Theoretical Framework

We use the value–attitude–behaviour (VAB) theory as the theoretical framework for this study. The VAB was developed to predict customer behaviours while purchasing green products (Homer & Kahle, 1988). According to Govaerts and Olsen (2023), the VAB framework proposes a hierarchical connection that extends from the middle cognitions (beliefs and attitudes) to a specific behaviour via abstract cognitions (values). Previous studies have used the VAB framework to predict consumer participation in numerous environmentally friendly behaviours including recycling, nature preservation and organic food consumption (Cheung & To, 2019; Govaerts & Olsen, 2023; Homer & Kahle, 1988; Kautish et al., 2023; Le et al., 2019). The VAB framework recognises the mechanisms that support consumers' commitment to green consumption.

Values, referred to as 'desirable goals that motivate action', serve as guiding principles that significantly influence attitudes and behaviour (Schwartz, 1992). Values represent stable beliefs that accumulate to shape attitudes and actions in specific contexts (Homer & Kahle, 1988; Stern, 2000). Adding the expectations associated with pertinent traits generates attitude, defined as the sum of an individual's positive and negative judgment of an attitude object (Ajzen, 1991). Behaviour then arises from an individual's attitudes about engaging in a certain action.

When making purchase decisions, customers consider not only personal values but also environmental effects (Le et al., 2019). The concepts of environmental concern and green perceived value are separate but mutually beneficial in developing environmentally friendly attitudes and activities (Duong et al., 2022; Pandey & Yadav, 2023). For this reason, this study incorporates dual personal values (i.e., environmental concern and green perceived value) into the VAB framework, linking them with attitudes and green purchasing.

2.2 Environmental Concern

Environmental concern (ENC) refers to individuals' consciousness and contemplation of ecological matters (Duong et al., 2022) as well as their proactive involvement in environmental issues (Saleki et al., 2019). Stern and Dietz (1994) identified ENC as a customer value system and found a direct correlation between concern and values related to compassion for others, the earth and the environment. Prior research has suggested that ENC has a positive influence on attitudes towards green products (ATT) (Duong et al., 2022), intentions (Saleki et al., 2019) and actual purchasing behaviours (Newton et al., 2015). According to Leary et al. (2014), ENC functions as a value for determining the importance of ecologically significant actions in sustainable situations. People with higher ENC tend to have more positive attitudes towards and stronger interests in environmental issues, which might influence their decision-making (Newton et al., 2015). However, studies conducted by Bamberg (2003), Hamzah and Tanwir (2021) and Duong et al. (2022) did not support the relationship between ENC and environmentally friendly behaviour. Based on these findings, we formulate the following hypothesis:

H1: Environmental concern has a positive effect on attitudes towards green products.

2.3 Green Perceived Value

Weighing the advantages and disadvantages of a particular service determines perceived value (Zeithaml, 1988). Green perceived value (GPV) is the extent to which customers perceive the overall advantages derived from products as fulfilling their expectations and requirements for a sustainable environment (Juliana et al., 2020). GPV plays an essential role in shaping customer trust. Previous studies have found an interaction between consumer trust and the perceived value of green products, as a high level of perceived value promotes belief in the products upon purchase (Chen & Chang, 2012). Studies have consistently shown that GPV influences attitudes and behaviours among individuals regarding environmentally friendly clothing and food choices (Arora & Manchanda, 2022; Woo & Kim, 2019). On the basis of these results, we develop the following hypothesis:

H2: *Green perceived value has a positive effect on attitudes towards green products.*

2.4 Attitude Towards Green Products

The marketing field has extensively studied the role of attitude when examining customer behaviour (Costa et al., 2021). Attitude is the outward expression of an individual's evaluation or judgment of a particular object, action or circumstance (Ajzen, 1991). Previous studies have confirmed that attitude plays a crucial role in shaping pro-environmental behaviour related to green consumption. A strong correlation also

exists between attitudes and green purchasing behaviour (GPB), or the purchasing of environmentally friendly products (Amoako et al., 2020; Yadav & Pathak, 2017). Thus, we put forth the following hypothesis:

H3: Attitude towards green products has a positive effect on green purchasing behaviour.

2.5 Mediation

The importance of attitude as a mediator between ENC and sustainable consumption has been highlighted in several studies (Duong et al., 2022; Saleki et al., 2019). According to Mostafa (2007), environmental values and psychological factors significantly influence the formation of pro-ecological attitudes and the likelihood of making green purchases. Woo and Kim (2019) provided evidence suggesting that consumers' perceptions of the value they derive from green products have a notable impact on their attitudes toward GPB. Amoako et al. (2020) similarly showed that GPV serves as a mediator in the association between ATT and GPB. ENC and GPV play a critical role in shaping the ATT of individuals, which subsequently influences their behaviours through the mechanism of attitudes (Ogiemwonyi et al., 2023; Roh et al., 2022). ENC and GPV indirectly affect GPB through the mediating role of attitude, leading to the following hypothesis:

H4. Attitude mediates the relationship between green purchasing behaviour and (a) environmental concern and (b) green perceived value.

2.6 Moderated Effect

Price consciousness (PC) refers to the importance that purchasers attach to the price of a product when deciding whether or not to make a purchase (Hansen, 2013). Individuals with heightened price consciousness place greater emphasis on price than other factors. PC reduces the likelihood that consumers choose green products, which often carry price premiums compared to their conventional counterparts (Sun & Wang, 2020). For price-sensitive customers, the high price of eco-friendly products might outweigh favourable environmental benefits during decision-making (Aschemann-Witzel & Zielke, 2017).

Empirical studies have supported the notion that PC impairs the translation of green intentions into actual purchasing behaviour. Hsu et al. (2017) found that increased price consciousness reduces the influence of positive attitudes on long-term purchase intentions for skincare items. Among individuals with positive attitudes towards organic products, those with higher price sensitivity show a weaker association between purchase intentions and actual purchases of organic over conventional green items (Saleki et al., 2019; Sun & Wang, 2020). We thus propose the following hypothesis:

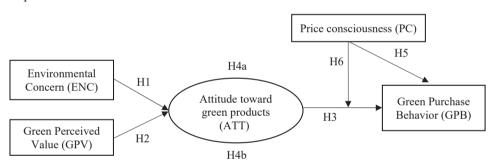
H5: Price consciousness has a negative effect on green purchasing behaviour.

Prior studies have indicated that many consumers are willing to pay a higher price for green products that express their commitment to environmentally friendly values or are of higher quality (Thøgersen & Ölander, 2006; Tse & Yim, 2002). However, the higher costs of green products may reduce the likelihood that an individual purchases them, particularly among price-conscious customers who strongly consider pricing when making selections (Bezawada & Pauwels, 2013; Van Doorn & Verhoef, 2015). The often higher pricing of green products may make it difficult for price-sensitive customers to choose them over cheaper conventional items, even when they have pro-environmental sentiments (Bezawada & Pauwels, 2013). Therefore, we hypothesise that price consciousness reduces the favourable link between the ATT and GPB.

H6: Price consciousness moderates the relationship between attitude and green purchasing behaviour

Based on previous research, the conceptual model for this study is presented in Figure 1.

Figure 1Proposed Research Model



3. Research Methodology

3.1 Research Context

Vietnam, an emerging economy characterised by a young and growing population, is undergoing a surge in the embrace of sustainable lifestyles, especially among the middle class and those experiencing socio-economic mobility (De Koning et al., 2015). Vietnam's Generation Z cohort encompasses more than 15 million individuals, constituting 19% of the working-age populace in 2021 (Nguyen & Vo, 2023). Projections suggest that by 2025, this generation will account for approximately 30% of the total workforce. Improvements in living standards are expected to boost Generation Z's purchasing power and significantly affect their and their families' spending habits (Flurry & Swimberghe, 2016). In this study, we focus on Generation Z consumers born

between 1997 and 2012 in three strategically selected cities representing northern, central and southern Vietnam.

3.2 Methodology

We conducted a survey of 376 participants from three major cities in Vietnam—Hanoi, Danang and Ho Chi Minh City—using convenience sampling between June and August 2023. The questionnaires contained initial screening questions to ensure that respondents met the eligibility requirements to participate. To assess important psychological characteristics predicted to impact green purchase behaviour, we used a multi-item measure validated in prior studies. The variables measured included ENC (4 items; Hamzah & Tanwir, 2021), GPV (5 items; Yadav & Pathak, 2017), ATT (4 items; Varah et al., 2021), PC (4 items; Sun & Wang, 2020) and GPB (3 items; Yadav & Pathak, 2017). We also collected and analysed the demographic information from individuals. Kline (2011) recommended a minimum of 10 samples per item; as our questionnaire contained 20 items, the final sample size (376 customers) met the predetermined criteria. We used Google Forms for data collection online via Zalo (a Vietnamese social network) and email. A pre-test involving 100 respondents helped to refine any ambiguous phrasing prior to deploying the survey.

We used partial least squares structural equation modelling (PLS-SEM) to investigate the associations between latent variables associated with green purchases within the Generation Z cohort. We performed all statistical analyses using SmartPLS 3.0 software.

4. Results and Discussion

4.1 Descriptive Statistics

In total, 376 participants responded to the survey. After excluding individuals who had not made frequent purchases of green products during the past 6 months or were not members of Generation Z, we acquired a total number of 283 valid responses, corresponding to a response rate of 75.2%.

In our sample, 59.7% of participants were women and 40.3% men. The most typical educational level was a bachelor's degree (59%), followed by college graduation (22.6%), post-graduate (12.0%) and high school graduation (6.4%). Officer (33.2%), student (23.7%) and sales/household worker (13.1%) were the most prevalent occupations, while worker (8.5%) and manager (6.4%) were the least common. Nearly 40% of participants earned less than US\$420.52 per month, followed by US\$420.52–841.03 (29%), US\$841.04–1261.56 USD (21.8%), and more than US\$1261.56 (11%).

Table 1 Demographic Data of the Research Sample (n = 283)

Characteristics	Number	Frequency %	
Gender			
Male	114	40.3	
Female	169	59.7	
Education			
High School	18	6.4	
College	64	22.6	
Bachelor	167	59.0	
Postgraduate	34	12.0	
Occupation			
Officer	94	33.2	
Sales/Household	37	13.1	
Student	67	23.7	
Worker	24	8.5	
Manager	18	6.4	
Others	43	15.1	
Income per month			
Under 420.52 USD	108	38.2	
From 420.52–under 841.04 USD	82	29.0	
From 841.04–under 1261.56 USD	62	21.8	
Over 1261.56 USD	31	11.0	
Location of residence			
The North of Vietnam (Hanoi)	38	13.4	
The Middle of Vietnam (Danang)	27	9.6	
The South of Vietnam (Ho Chi Minh City)	218	77.0	
Total	283	100%	

Note. 1 USD = 23.780 VND (Exchange rate on June 30, 2023).

4.2 Reliability and Validity Assessment

The initial analysis of the measurement scales included evaluations of the outer loadings, CR and AVE, for the five latent constructs (Table 2). All elements exhibited satisfactory loadings above the recommended 0.7 threshold (Hair et al., 2019). High outer loadings indicate that each remaining scale item strongly captures the variance of its assigned construct versus overlapping with other constructs. Furthermore, an AVE of 0.5 and CR of 0.7 imply adequate internal consistency and convergent validity of the

measurement scales, respectively (Hair et al., 2019). The square root of each construct AVE exceeded its bivariate association with other constructs. The items exhibited a higher degree of loading on their respective constructs compared to other factors. The model is considered to be devoid of vertical and lateral multicollinearity if the VIF is less than 3.3 (Kock, 2015). In our investigation, we used PLS-SEM with a bootstrapping method of k=5000. We consider hypothesis testing to be valid if the findings align with the anticipated direction of the hypothesis and satisfy the statistical significance requirements.

 Table 2

 Reliability and Validity Assessment

Constructs	Items	Outer loading	Cronbach's Alpha	CR	AVE	VIF
Environ- mental Concern (Hamzah & Tanwir, 2021)	ENC1 "I am concerned about the environment".	0.892	_	0.920	0.742	2.827
	ENC2 "The condition of the environment affects the quality of my health".	0.790				1.724
	ENC3 "I am willing to make sacrifices to protect the environment".	0.889	0.883			2.770
	ENC4 "I think individuals have a responsibility to protect the environment".	0.871				2.461
Green perceived value (Yadav & Pathak, 2017)	GPV1 "The green product's environmental functions provide good value to me".	0.892			0.755	2.859
	GPV2 "The green product's environmental performance meets my expectations".	0.833	_			2.612
	GPV3 "I purchase green products because they have more environmental concerns than non-green products".	0.881	0.920	0.939		2.825
	GPV4 "I purchase green products because they are environmentally friendly".	0.874	_			2.924
	GPV5 "I purchase green products because they have more environmental benefits than non-green products".	0.865	-			2.893

Constructs	Items	Outer loading	Cronbach's Alpha	CR	AVE	VIF
Attitude to- ward green products (Varah et al., 2021)	ATT1 "Purchasing a green product is a good idea".	0.896	_			2.863
	ATT2 "Green products are good for the environment".	0.854	_	0.934	0.781	2.417
	ATT3 "I possess a desirable attitude about green products".	0.895	0.907			2.714
	ATT4 "I feel good about myself when I use green products".	0.890				2.903
Green Purchase Behavior (Yadav & Pathak, 2017)	GPB1 "I have been pur- chasing green products regularly".	0.916				2.228
	GPB2 "I have green purchasing behavior for my daily needs".	0.921	0.894	0.933	0.824	3.088
	GPB3 "I have had green purchasing behavior in the past six months".	0.919				3.219
Price Consciousness (Sun & Wang, 2020)	PC1 "For me, the price is the deciding factor when I buy products".	0.907			0.806	2.938
	PC2 "Price is important to me when I decide to buy products".	0.849	0.020	0.943		2.720
	PC3 "I usually try to buy products at the lowest price".	0.901	- 0.920			3.192
	PC4 "I have to pay attention to the price when I buy products".	0.912	_			3.289

Note. Results from Smart PLS 3.

Henseler et al. (2016) used the HTMT approach, which assesses each pair of variables. As indicated in Table 3, the HTMT values are below the threshold of 0.90.

Table 3The HTMT Value

	АТТ	АТГ*РС	ENC	GPB	GPV
ATT*PC	0.277				
ENC	0.575	0.205			
GPB	0.369	0.019	0.316		
GPV	0.386	0.076	0.487	0.214	_
PC	0.241	0.213	0.182	0.340	0.045

Note. Results from Smart PLS 3.

4.3 Results and Discussion

We conducted a collinearity test to determine whether there were any serious issues with common method bias and multicollinearity. Cohen (1988) defines f^2 values of 0.35, 0.15 and 0.02 as indicating high, medium and small impact sizes, respectively. In our study, all f^2 values were less than 0.02. According to the R^2 values obtained from the estimate of the structural model, independent variables account for 19.3% of the variation in GPB and 28.5% in ATT. R^2 values greater than 26% indicate a significant influence, 2%–12% and 13%–25% indicate moderate impacts (Cohen, 1988). This shows that the constructions under consideration have sufficient explanatory power. Q^2 values exceeded the suggested threshold of 0 for all variables, including values of 0.221 for ATT and 0.154 for GPB. The fit of the model was evaluated using SRMR = 0.062 < 0.08, suggesting a satisfactory fit (Henseler et al., 2016). These findings, combined, suggest that the model is an adequate and suitable representation for the framework suggested.

Table 4The Results of PLS-SEM

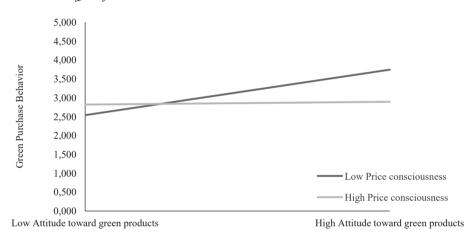
<i>J</i>						
Relationships	Н	Coef.	SD	t-statistics	P-value	Result
ENC->ATT	H1	0.444	0.064	6.948	0.000	Accepted
GPV->ATT	H2	0.165	0.064	2.588	0.010	Accepted
ATT->GPB	Н3	0.320	0.051	6.256	0.000	Accepted
ENC->ATT->GPB	H4a	0.142	0.031	4.534	0.000	Accepted
GPV->ATT->GPB	H4b	0.053	0.023	2.272	0.023	Accepted
PC->GPB	H5	-0.283	0.053	5.323	0.000	Accepted
Moderating ATT*PC->GPB	Н6	-0.142	0.044	3.231	0.001	Accepted

Note. Result of the research at p-value=5%.

Table 4 indicates that all hypotheses should be accepted at the 5% significance level, consistent with the findings of previous research. ENC has a positive impact on ATT (H1; β = 0.444; p < .005), in line with the findings of Hamzah and Tanwir (2021)

and Duong et al. (2022). Similarly, support for the beneficial effect of GPV on ATT ($\beta=0.165;~p<.005$) confirms H2, which is consistent with previous research by Arora and Manchanda (2022). The results also indicate a direct relationship between ATT and GPB (H3; $\beta=0.320;~p<.005)$, which aligns with the results stated by Amoako et al. (2020). Furthermore, ATT was found to act as a mediator between ENC and GPB ($\beta=0.142;~p<0.005)$, as well as between GPV and GPB ($\beta=0.053;~p<.005)$, confirming H4a and H4b. The findings of Ogiemwonyi et al. (2023) and Roh et al. (2022) support this result. PC has a negative correlation with GPB ($\beta=-0.283;~p<.005)$, confirming H5 and indicating that consumers care more about price than other potential green product benefits (Alford & Biswas, 2002).

Figure 2 *The Moderated Effect of Price Consciousness*



The estimation evidence also confirms H6, finding that PC plays a moderating role in the relationship between ATT and GPB (β = -0.142; p < .005). More precisely, increased expenses associated with green items might decrease the purchase probability for customers who prioritise or are sensitive to pricing (Bezawada & Pauwels, 2013; Van Doorn & Verhoef, 2015). This finding confirms prior studies that have demonstrated price is an important factor in customer decision-making (Van Doorn & Verhoef, 2015; Yadav & Pathak, 2017). Figure 2 shows that PC significantly modulates the relationship between ATT and GPB. The regression line displays a more pronounced negative association between ATT and GPB when the PC increases. In other words, environmentally committed individuals in Generation Z with low price consciousness can more effectively convert their attitudes into green purchasing decisions. Anticipated higher costs associated with green products may hinder customers who prioritise their budget (Bezawada & Pauwels, 2013); price consciousness appears to limit Generation Z's willingness to pay for expensive green options when affordable competing products are available.

5. Implications

5.1 Theoretical Implications

This study contributes valuable theoretical insights by exploring the impact of personal values and price consciousness on green purchasing attitudes and actual purchasing behaviours.

Firstly, the study uses the VAB framework, which is seldom used for analysing green consumption in the Vietnamese context. The limited amount of research on the VAB framework in emerging markets, specifically about environmentally friendly products, represents a theoretical deficiency in the existing literature (Kautish et al., 2023). This study enhances the VAB framework by thoroughly analysing the trade-offs that arise from opposing personal factors (e.g., customers who prioritize environmental concerns but are unwilling to pay extra for environmentally friendly products due to their high cost).

Secondly, previous studies that have used the VAB framework (Homer & Kahle, 1988) mostly looked at marketing issues, not taking into account the importance of both environmental concerns (Leary et al., 2014) and perceived values (Biswas & Roy, 2015). The present study adds to the existing knowledge by looking at how ENC and GPV affect behaviour and attitudes in a developing market. Analysing customers' perceptions of green products, as well as their actual buying behaviours, allows us to better understand the disparities between attitude and behaviour. The results emphasise that a stronger sense of ENC and GPV can encourage positive attitudes toward green products (Hamzah & Tanwir, 2021; Woo & Kim, 2019) and behaviours (Newton et al., 2015; Roh et al., 2022). However, to convert this positive mindset into actual purchases, the affordability problem must be tackled, especially for customers in developing countries with limited budgets.

Lastly, the approach improves our understanding of the role attitudes play in the complex connections between environmental and product-related concerns and actual action. Moderation analysis highlights that price consciousness negatively impacts the consumers' likelihood of buying environmentally friendly products (Sun & Wang, 2020), while personal values have a positive attitude towards eco-friendliness. This study greatly improves our understanding of the various factors that drive or hinder sustainable consumption from several perspectives.

5.2 Managerial Implications

In addition to theoretical implications, the empirical findings of this study also provide significant information and recommendations for professionals in the green industry.

First, our findings highlight that consumers who choose green products consider more than just environmental factors; they also appraise the product or service based on its alignment with their personal needs and preferences. It is important that green enterprises design and provide green solutions that deliver mindful personal advantages (Le et al., 2019). According to Bassiouni and Hackley (2014), marketing methods focused on the younger generation should prioritise promoting the climatic and environmental advantages connected with green products as a means of successfully activating their environmental consciousness.

Second, we demonstrate that ENC and GPV significantly influence individuals' attitudes and purchasing behaviours. Price factors remain relevant and influence search intentions beyond perceived value (Alford & Biswas, 2002). Green companies should invest in research and innovation to enhance the quality and efficiency of their products. Approaches that aim to reduce consumer price consciousness, such as emphasising long-term benefits and offering subsidies or instalment payment options, have the potential to produce positive results (Le et al., 2019). In addition, advertising that emphasises the social prestige and personal accomplishments associated with green products may appeal to environmentalist consumers.

Lastly, marketers must have a complete understanding of all components of the model to effectively manage personal values and the significant association between attitude and behaviour. Classifying consumers based on their ENC and GPV can help efficiently target customers and understand their green buying behaviour. Research and development projects and the formation of distribution partnerships are two strategies to support the improvement of easily available green solutions (Jamali et al., 2021; Sharma & Iyer, 2012). Policymakers should provide financial, technological and linkage assistance to firms involved in the manufacture of green products in order to lower costs and remove barriers to consumption. The promotion of competitively priced green manufacturing and accessibility demands a joint effort between governments and industry partners.

6. Limitations and Directions for Future Study

Although analysing consumer behaviours related to green products, in general, can provide useful information, it is important to recognise that reasons for purchase decisions can vary dramatically between individual product categories, such as green food, textiles and skincare items. Adopting a focused strategy and investigating consumer decision-making processes within specific green product categories could improve future research efforts. Additionally, the geographical concentration of the present study in major Vietnamese cities (Hanoi, Danang and Ho Chi Minh City) and the use of convenience sampling to specifically target Generation Z consumers may restrict the generalisability of its findings, though it does offer valuable initial observations on the subject. Further study using varied samples and methodologies is crucial to providing a more detailed description of green consumption. Subsequent studies should also investigate the psychological and social aspects linked to the phenomenon. The inclusion of evaluations of multidimensional perceived value and pro-environmental conduct

would improve the comprehension of the complex factors at play in this situation. Finally, a thorough analysis of various theoretical frameworks could help to explain the disparity between attitudes and actions reported in the present study.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior & Human Decision Processes*, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Akenji, L. (2014). Consumer scapegoatism and limits to green consumerism. *Journal of Cleaner Production*, 63, 13–23. https://doi.org/10.1016/j.jclepro.2013.05.022

Alford, B. L., & Biswas, A. (2002). The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal of Business Research*, 55(9), 775–783. https://doi.org/10.1016/S0148-2963(00)00214-9

Amoako, G. K., Dzogbenuku, R. K., & Abubakari, A. (2020). Do green knowledge and attitude influence the youth's green purchasing? Theory of planned behavior. *International Journal of Productivity and Performance Management*, 69(8), 1609–1626. https://doi.org/10.1108/IJPPM-12-2019-0595

Arora, N., & Manchanda, P. (2022). Green perceived value and intention to purchase sustainable apparel among Gen Z: The moderated mediation of attitudes. *Journal of Global Fashion Marketing*, 13(2), 168–185. https://doi.org/10.1007/s10668-020-00698-x

Aschemann-Witzel, J., & Zielke, S. (2017). Can't Buy Me Green? A Review of Consumer Perceptions of and Behavior Toward the Price of Organic Food. *Journal of Consumer Affairs*, 51(1), 211–251. https://doi.org/10.1111/joca.12092

Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, 23(1), 21-32. https://doi.org/10.1016/S0272-4944(02)00078-6

Bassiouni, D. H., & Hackley, C. (2014). 'Generation Z' children's adaptation to digital consumer culture: A critical literature review. *Journal of Customer Behaviour*, 13(2), 113–133. https://doi.org/10.1362/147539214X14024779483591

Bezawada, R., & Pauwels, K. (2013). What is Special about Marketing Organic Products? How Organic Asortment, Price, and Promotions Drive Retailer Performance. *Journal of Marketing*, 77(1), 31–51. https://doi.org/10.1509/jm.10.0229

Biswas, A., & Roy, M. (2015). Leveraging factors for sustained green consumption behavior based on consumption value perceptions: Testing the structural model. *Journal of Cleaner Production*, 95, 332–340. https://doi.org/10.1016/j.jclepro.2015.02.042

Campbell, B. M., Hansen, J., Rioux, J., Stirling, C. M., & Twomlow, S. (2018). Urgent action to combat climate change and its impacts (SDG 13): Transforming agriculture and food systems. *Current Opinion in Environmental Sustainability*, 34, 13–20. https://doi.org/10.1016/j.cosust.2018.06.005

Chaihanchai, P., & Anantachart, S. (2023). Encouraging green product purchase: Green value and environmental knowledge as moderators of attitude and behavior relationship. *Business Strategy and the Environment*, 32(1), 289–303. https://doi.org/10.1002/bse.3130

Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, 50(3), 502–520. https://doi.org/10.1108/00251741211216250

Cheung, M. F., & To, W. M. (2019). An extended model of value–attitude–behavior to explain Chinese consumers' green purchase behavior. *Journal of Retailing and Consumer Services*, 50, 145–153. https://doi.org/10.1016/j.jretconser.2019.04.006

Ching Biu Tse, A., & Hong Kit Yim, F. (2002). How do Consumers Perceive Clear and Transparent Products?. *International Journal of Commerce and Management*, 12(1), 68–78. https://doi.org/10.1108/eb047437

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Costa, C. S. R., da Costa, M. F., Maciel, R. G., Aguiar, E. C., & Wanderley, L. O. (2021). Consumer antecedents towards green product purchase intentions. *Journal of Cleaner Production*, 313, 127964. https://doi.org/10.1016/j.jclepro.2021.127964

De Groot, J., & Steg, L. (2007). General Beliefs and the Theory of Planned Behavior: The Role of Environmental Concerns in the TPB. *Journal of Applied Social Psychology*, 37(8), 1817–1836. https://doi.org/10.1111/j.1559-1816.2007.00239.x

De Koning, J. I. J. C., Crul, M. R. M., Wever, R., & Brezet, J. C. (2015). Sustainable consumption in Vietnam: An explorative study among the urban middle class. *International Journal of Consumer Studies*, 39(6), 608–618. https://doi.org/10.1111/ijcs.12235

Duong, C. D., Doan, X. H., Vu, D. M., Ha, N. T., & Dam, K. V. (2022). The Role of Perceived Environmental Responsibility and Environmental Concern on Shaping Green Purchase Intention. *Vision: The Journal of Business Perspective*, 09722629221092117. https://doi.org/10.1177/09722629221092117

Flurry, L. A., & Swimberghe, K. (2016). Consumer Ethics of Adolescents. *Journal of Marketing Theory and Practice*, 24(1), 91–108. https://doi.org/10.1080/10696679.2016.1089766

Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International Journal of Psychology*, 49(3), 141–157. https://doi.org/10.1002/ijop.12034

Govaerts, F., & Olsen, S. O. (2023). Consumers' values, attitudes and behaviours towards consuming seaweed food products: The effects of perceived naturalness, uniqueness, and behavioural control. *Food Research International*, 165, 112417. https://doi.org/10.1016/j.foodres.2022.112417

Gravelines, Ž., Banytė, J., Dovalienė, A., & Gadeikienė, A. (2022). The Role of Green Self-Identity and Self-Congruity in Sustainable Food Consumption Behaviour. *Organizations and Markets in Emerging Economies*, 13(2), 336–356. https://doi.org/10.15388/omee.2022.13.83

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hamzah, M. I., & Tanwir, N. S. (2021). Do pro-environmental factors lead to purchase intention of hybrid vehicles? The moderating effects of environmental knowledge. *Journal of Cleaner Production*, 279, 123643. https://doi.org/10.1016/j.jclepro.2020.123643

Hansen, H. (2013). Price Consciousness and Purchase Intentions for New Food Products: The Moderating Effect of Product Category Knowledge when Price is Unknown. *Journal of Food Products Marketing*, 19(4), 237–246. doi:10.1080/10454446.2013.724363

Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International Marketing Review*, 33(3), 405–431. https://doi.org/10.1108/IMR-09-2014-0304

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology*, 54(4), 638. https://doi.org/10.1037/0022-3514.54.4.638

Hsu, C. L., Chang, C. Y., & Yansritakul, C. (2017). Exploring purchase intention of green skincare products using the theory of planned behavior: Testing the moderating effects of country of origin and price sensitivity. *Journal of Retailing and Consumer Services*, 34, 145–152. https://doi.org/10.1016/j.jretconser.2016.10.006

Jamali, M. B., Gorji, M. A., & Iranpoor, M. (2021). Pricing policy on a dual competitive channel for a green product under fuzzy conditions. *Neural Computing and Applications*, 1–13. https://doi.org/10.1007/s00521-020-05567-2

Juliana, Djakasaputra, A., & Pramono, R. (2020). Green Perceived Risk, Green Viral Communication, Green Perceived Value Against Green Purchase Intention Through Green Satisfaction. *Journal of Industrial Engineering & Management Research*, 1(2), 124–139. https://doi.org/10.7777/jiemar.v1i2.46

Kautish, P., Khare, A., & Sharma, R. (2023). Terminal or instrumental? The impact of values on consumers' preference for organic food products. *Journal of Foodservice Business Research*, 26(6), 793–822. https://doi.org/10.1080/15378020.2022.2051402

Kline, R. B. (2023). *Principles and Practice of Structural Equation Modeling*. Guilford publications. Kock, N. (2015). Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. *International Journal of e-Collaboration (ijec)*, 11(4), 1–10.

Le, A. N. H., Tran, M. D., Nguyen, D. P., & Cheng, J. M. S. (2019). Heterogeneity in a dual personal values—dual purchase consequences—green consumption commitment framework. *Asia Pacific Journal of Marketing and Logistics*, 31(2), 480–498. https://doi.org/10.1108/APJML-12-2017-0303

Leary, R. B., Vann, R. J., Mittelstaedt, J. D., Murphy, P. E., & Sherry Jr, J. F. (2014). Changing the marketplace one behavior at a time: Perceived marketplace influence and sustainable consumption. *Journal of Business Research*, 67(9), 1953–1958. https://doi.org/10.1016/j.jbusres.2013.11.004

Milfont, T. L., & Gouveia, V. V. (2006). Time perspective and values: An exploratory study of their relations to environmental attitudes. *Journal of Environmental Psychology*, 26(1), 72–82. https://doi.org/10.1016/j.jenvp.2006.03.001

Mostafa, M. M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology & Marketing*, 24(5), 445–473. https://doi.org/10.1002/mar.20168

Newton, J. D., Tsarenko, Y., Ferraro, C., & Sands, S. (2015). Environmental concern and environmental purchase intentions: The mediating role of learning strategy. *Journal of Business Research*, 68(9), 1974–1981. https://doi.org/10.1016/j.jbusres.2015.01.007

Nguyen, P. M., & Vo, N. D. (2023). Exploring Organic Food Purchase Behaviors of Gen Z: An Application of TPB and MOA Model in a Transition Country. *Foundations of Management*, 15(1), 35–50. https://doi.org/10.2478/fman-2023-0003

Nguyen, X. H., Nguyen, T. T., Anh Dang, T. H., Dat Ngo, T., Nguyen, T. M., & Anh Vu, T. K. (2024). The influence of electronic word of mouth and perceived value on green purchase intention in Vietnam. *Cogent Business & Management*, 11(1), 2292797. https://doi.org/10.1080/23311975. 2023.2292797

Ogiemwonyi, O., Alam, M. N., Alshareef, R., Alsolamy, M., Azizan, N. A., & Mat, N. (2023). Environmental factors affecting green purchase behaviors of the consumers: Mediating role of environmental attitude. *Cleaner Environmental Systems*, 10, 100130. https://doi.org/10.1016/j.ce-sys.2023.100130

Pandey, M., & Yadav, P. S. (2023). Understanding the role of individual concerns, attitude, and perceived value in green apparel purchase intention; the mediating effect of consumer involvement and moderating role of generation Z&Y. *Cleaner and Responsible Consumption*, 9, 100120. https://doi.org/10.1016/j.clrc.2023.100120

Roh, T., Seok, J., & Kim, Y. (2022). Unveiling ways to reach organic purchase: Green perceived value, perceived knowledge, attitude, subjective norm, and trust. *Journal of Retailing and Consumer Services*, 67, 102988. https://doi.org/10.1016/j.jretconser.2022.102988

Saleki, R., Quoquab, F., & Mohammad, J. (2019). What drives Malaysian consumers' organic food purchase intention? The role of moral norm, self-identity, environmental concern and price consciousness. *Journal of Agribusiness in Developing and Emerging Economies*, 9(5), 584–603. https://doi.org/10.1108/JADEE-02-2019-0018

Schultz, P. W. (2001). The Structure of Environmental Concern: Concern for Self, Other People, and the Biosphere. *Journal of Environmental Psychology*, 21(4), 327–339. https://doi.org/10.1006/jevp.2001.0227

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*, 25, 1–65. https://doi.org/10.1016/S0065-2601(08)60281-6

Sharma, A., & Iyer, G. R. (2012). Resource-constrained product development: Implications for green marketing and green supply chains. *Industrial Marketing Management*, 41(4), 599–608. https://doi.org/10.1016/j.indmarman.2012.04.007

Solomon, M. R. (2020). Consumer Behavior: Buying, Having, and Being. Pearson.

Stern, P. C. (2000). New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, 56(3), 407–424. https://doi.org/10.1111/0022-4537.00175

Stern, P. C., & Dietz, T. (1994). The Value Basis of Environmental Concern. *Journal of Social Issues*, 50(3), 65–84. https://doi.org/10.1111/j.1540-4560.1994.tb02420.x

Suki, N. M., & Suki, N. M. (2019). Examination of peer influence as a moderator and predictor in explaining green purchase behaviour in a developing country. *Journal of Cleaner Production*, 228, 833–844. https://doi.org/10.1016/j.jclepro.2019.04.218

Sun, Y., & Wang, S. (2020). Understanding consumers' intentions to purchase green products in the social media marketing context. *Asia Pacific Journal of Marketing and Logistics*, 32(4), 860–878. https://doi.org/10.1108/APJML-03-2019-0178

Tanrikulu, C. (2021). Theory of consumption values in consumer behaviour research: A review and future research agenda. *International Journal of Consumer Studies*, 45(6), 1176–1197. https://doi.org/10.1111/ijcs.12687

Testa, F., Pretner, G., Iovino, R., Bianchi, G., Tessitore, S., & Iraldo, F. (2021). Drivers to green consumption: A systematic review. *Environment, Development and Sustainability*, 23, 4826–4880. https://doi.org/10.1007/s10668-020-00844-5

Thøgersen, J., & Ölander, F. (2006). To What Degree are Environmentally Beneficial Choices Reflective of a General Conservation Stance?. *Environment and Behavior*, 38(4), 550–569. https://doi.org/10.1177/0013916505283832

Van Doorn, J., & Verhoef, P. C. (2015). Drivers of and Barriers to Organic Purchase Behavior. *Journal of Retailing*, 91(3), 436–450. https://doi.org/10.1016/j.jretai.2015.02.003

Varah, F., Mahongnao, M., Pani, B., & Khamrang, S. (2021). Exploring young consumers' intention toward green products: Applying an extended theory of planned behavior. *Environment, Development and Sustainability*, 23, 9181–9195. https://doi.org/10.1007/s10668-020-01018-z

Wang, S., Lin, S., & Li, J. (2018). Exploring the effects of non-cognitive and emotional factors on household electricity saving behavior. *Energy Policy*, 115, 171–180. https://doi.org/10.1016/j.enpol.2018.01.012

Woo, E., & Kim, Y. G. (2019). Consumer attitudes and buying behavior for green food products: From the aspect of green perceived value (GPV). *British Food Journal*, 121(2), 320–332. https://doi.org/10.1108/BFJ-01-2018-0027

Yacout, O. M. (2023). Personal values, consumer identities, and attitudes toward electric cars among Egyptian consumers. *Business Ethics, the Environment & Responsibility*, 32(4), 1563–1574. https://doi.org/10.1111/beer.12571

Yadav, R., & Pathak, G. S. (2017). Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. *Ecological Economics*, 134, 114–122. https://doi.org/10.1016/j.ecolecon.2016.12.019

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2–22. https://doi.org/10.2307/1251446