Reflecting the Moderating Role of Perceived Value on the 'Attitudes-Sustainable Behavior' Gap in the Emerging Country Context

Le Bao Han [1], Chieh-Yu Lin [2], Cheng-Kun Wang [2], Nguyen Cong Hoang [3]

[1] *Business Administration Faculty, Industrial University of Ho Chi Minh City, Ho Chi Minh City, Vietnam*
[2] *College of Management, Chang Jung Christian University, Tainan, Taiwan*
[3] *Faculty of Business Administration, East Asia University of Technology, Hanoi City, Vietnam*

Abstract **– This study explores the factors influencing consumer behavior in purchasing sustainable products in Vietnam, an emerging market, to address the 'attitudes-sustainable behavior' gap and enhance understanding of the sustainable development goals (SDGs). A survey involving 518 respondents familiar with sustainable products was conducted. A structural equation modeling approach was employed to assess relationships among research constructs. The study reveals that perceived value, attitude, perceived behavior control, and education significantly influence consumer intentions and behavior towards sustainable products. Uniquely, it augments the revised theory of planned behavior model by introducing perceived value as a reflective and moderating factor, thereby bridging the 'attitudes-behavior' gap. Contrary to expectations in Vietnam's cultural context, subjective norms did not significantly influence sustainable purchasing behavior. This study uniquely contributes to the existing literature on sustainable consumption and the sustainable development goals. The findings offer practical insights for government authorities and marketers to enhance consumer perceptions and develop strategies for sustainable products. Emphasizing reliable branding and reputation can significantly influence consumer investment decisions.**

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Corresponding author: Le Bao Han,
Business Administration Faculty, Industrial University of Ho Chi Minh City, Ho Chi Minh City, Vietnam
Email: lebaohan@iuh.edu.vn

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1. Introduction

A substantial portion of scholarly literature addressing the influence of diverse factors on sustainable consumption behavior consistently presents a predominant consensus, which positions the environmental dimension as a primary determinant [1]. Relatively scant consideration, however, is given to the economic and social dimensions, which pertain to customers' internal evaluation of the values they attain through sustainable consumption [2]. Notwithstanding the theory of planned behavior (TPB) being recognized as a dependable prognosticator of behavior, its prognostic proficiency is subject to contextual influences, thereby engendering recurring suggestions to encompass supplementary factors and broaden the scope of TPB variables for the exploration of ensuing variations and the augmentation of the model's predictive capacity, particularly within the purview of sustainability [3]. This research endeavors to amalgamate the TPB [4] with the notion of perceived value (PV) [5], to increase prognostic precision regarding sustainable consumption behavior (SCB) among consumers in Vietnam.

Vietnam is one of the 193 countries that adopted the 2030 Agenda for Sustainable Development, which was endorsed by world leaders at the United Nations Sustainable Development Summit on September 25, 2015 [6]. While determining the relative importance of each sustainable development goal (SDG) may be subjective, Goal 12, "Responsible Consumption and Production," is often considered crucial due to its wide-ranging impact across various aspects of sustainable development.

The localized version adoption of Goal 12 in Vietnam's "Ensure Sustainable Production and Consumption", which emphasizes responsible consumption and production, resonates with several critical sustainability challenges facing Vietnamese businesses to enhance competitiveness by adopting sustainable practices in production and consumption. Consumer engagement is paramount in driving sustainable production, as it relies heavily on their resolute commitment to sustainable consumption; nevertheless, in Vietnam, there is a notable disparity, as supportive policies and resources predominantly prioritize production rather than consumption [7]. Although eco-label certification programs and various product green labels have been introduced, consumer awareness remains low [8].

The study's primary purpose is to fill a gap in previous research on the unblurred relationship between attitude and SCB, highlighting PV's moderating role. Furthermore, this research in an emerging nation provides significant evidence regarding sustainable consumption. It facilitates comprehension regarding a tenuous correlation between customer attitudes and their subsequent behavioral outcomes [9]. Third, an achievement of the study involves incorporating PV into the TPB model, followed by evaluating this modified model's effectiveness in predicting SCB within the context of Vietnam. Ultimately, this investigation presents a viable agenda for future research in the SCB field, grounded in updated findings.

2. Hypothesis Development

This section establishes the study's formal hypotheses by first identifying the theoretical framework governing the relationship between the variables.

2.1. Underpinning Theory

The TPB [4] encompasses three determinants, which are attitude toward the behavior (ATT), subjective norms (SN), and perceived behavioral control (PBC), that jointly shape an individual's intention to act. ATT reflects personal evaluation of the behavior, SN captures perceived social pressures, and PBC denotes perceived ease or difficulty of performing the behavior. Together, these factors predict intention and directly influence actual behavior, making TPB a widely applied model for understanding decision-making processes. Moreover, [10] claim that TPB is open to integrating external predictors and its fundamental variables if appropriate evidence of capturing a significant variance in the behavioral intention or behavior is supplied.

In the proposed extension of this study, the TPB model was used as the conceptual model with the theory of perceived value (TPV) to analyze sustainable consumption behaviors [11]. Today's marketing approach emphasizes consumer needs. The association between long-term profit retention and customers is used to implement this trend in contemporary businesses [12]. Customers' perceived value (PV) has diverse synonyms and definitions. [13] and [14] provide different definitions of PV; however, they have a few commonalities. Indeed, PV typically involves a trade-off between what consumers receive and what they pay to obtain a product or service; it is a subjective rather than an objective perception.

Consumers purchase objects based on thoseobjects' perceived worth, which varies depending on a customer's demands and circumstances [11]. Additionally, due to diverse needs, the PV of the customer experience is constantly changing [15]. Customers' subjective perceptions of value when engaging in experience consumption are known as PV, which differs from person to person [16]. Indeed, businesses that follow the trend of sustainable development must raise their PV by giving customers highly desirable benefits in exchange for their appreciation of sustainable consumption practices.

The original TPV [11] uses several values to explain consumers' buying rationales. In [17] and [18] studies, products are considered sustainable under the following conditions: (1) Manufactured using recycled or biodegradable ingredients; (2) No animal testing; (3) Support charitable donations; and (4) Fair trade conditions. Including environmental and social responsibility features in sustainable brands expands the scope of value beyond functional aspects to encompass social value components [19]. A sustainable brand also incorporates supplementary aspects, such as refraining from animal testing and supporting charitable donations [17], [18]. This commitment is believed to evoke customer affection for the brand. Therefore, [20] suggest that a multidimensional conceptualization is needed to adequately capture the presence of emotional factors in value.

Even though measuring value has received substantial attention over the years, consumers' functional, emotional, and social values are typically given the most consideration [21]. According to [5], the various value dimensions may not be autonomous, as they depend on the nature of goods or services. Contemporary literature investigating the influence of PV on sustainable consumption behavior overwhelmingly employs different consumer-perceived values encompassing social, emotional, and functional dimensions in specific ways, such as green cosmetics [22], education [23], and health [24].

The functional value (FV) proposal as a market offering is derived from its anticipated performance and perceived quality, which collectively determine its utility [25]. In particular, the FV of sustainable products is more focused on minimizing environmental harm [26]. Social value (SV) is generated through the product's performance in enhancing customers' social perception of their image concept [11]. SV for green products is the perceived utility derived from their consumption, which is driven by social pressure and environmental prestige [2]. Emotional value (EV) is the inherent utility generated by an offering through its ability to evoke and stimulate a range of emotional responses or affective states in individuals [27]. EV possesses a significant capacity to moderate and motivate customers, enabling them to reassess and establish intricate associations among functional value, social value, and the decision to choose green products [28].

2.2. Research Hypotheses

According to [4], ATT involves an individual's cognitive and affective evaluation, representing their favorable or unfavorable orientation towards a specific behavior. A positive ATT toward sustainable products acts as a catalyst for fostering sustainable consumption [29]. A meta-analysis explained that a positive ATT toward environmental and green attributes of a product motivates customers' green purchase intention [30]. Moreover, [31] report that peer pressure exerts a mediating influence on the attitudes and intentions of individuals, potentially leading to the indirect weakening of positive attitudes and alterations in intended behavior.

As a result, the following hypothesis is presented:

H1: *ATT is positively associated with intention for sustainable consumption (ISC).*

In some instances, attitudes can prompt impulsive or automatic actions [32]. It has been found that attitudes promptly affect such behavior, particularly for products that require minimal consideration during purchase and for items with a high frequency of repeat behavior [33]. The impact is directly observed on the behavior itself, rather than solely mediated by intentions as proposed in the theoretical TPB, in addition to the fact that the link between ATT and behavior may be the most tenuous aspect in some model testing [30]. The ongoing discourse remains inconclusive; however, a prevailing consensus is emerging, highlighting the influential role of attitudes in shaping real-life behavior, particularly under optimal influencing factors and conducive conditions [35].

Based on this knowledge, the following hypothesis is presented:

H2: *ATT is positively associated with SCB.*

SN is described as social pressure to do or refrain from doing things [4]. It is conceivable that customers who face external social pressures to exhibit green customer citizenship behaviors may align their actions with these expectations to conform and meet the social norms associated with sustainability [36]. Studies reported that social identification and social influence play a consequential role as predictors of consumer intentions [37], [38], as individuals who identify themselves with the cohort of organic consumers demonstrate an enhanced proclivity to procure merchandise that purports to possess ethical merits and promote environmental sustainability [38].

Therefore, the following hypothesis is given:

H3: *SN is positively associated with ISC.*

PCB refers to "the individual's perception of the extent to which performance of a behavior is easy or difficult" [39]. According to TPB, people's behavioral control is influenced by their general attitude, which is mediated by control beliefs. The relationship between PBC and intentions has been extensively investigated within various domains [40], [41]. Consumers' PCB is significantly and positively related to the behavioral intention of green consumption, according to [29]. By conducting a comprehensive review of 97 empirical research papers on green purchase behavior published between 2015 and 2020, [42] concluded that PCB is identified as a cognitive factor that influences the purchase intention of a broad spectrum of sustainable products. The research of [43] departed from conventional literature by finding that the influence of attitude on consumers' purchase intention for green furniture was insignificant. In contrast, PBC emerged as the most influential factor in shaping consumers' purchase intention.

Based on this, the following hypothesis is proposed:

H4: *PCB is positively associated with ISC.*

Behavioral intention is the most immediate predictor of behavior concerning TPB [4]. A conceptual framework of organic food buying behaviour is proposed after analyzing a sample of 154,072 consumers reported in 91 research studies from 2001 to 2020, demonstrating a significant positive relationship between purchase intention and purchase behavior [44]. In the Western context, [45] shows that the ISC of a green product is significantly positive to SCB in Turkey.

Study by [46] attributed a supported result when testing a hypothesis between the ISC for sustainable clothes and actual purchase behavior in Germany. In the Asian context, ISC and consumer buying behaviors are positively associated, including the sharing economy and solar adoption in India [29]. The willingness to consume green products positively affected actual green consumption in Malaysia [47].

As a result, the following hypothesis is presented:

H5: *ISC is positively associated with SCB.*

2.2.1. PV and ATT, ISC, and SCB

The positive path from PV to customers' attitudes has been identified empirically across a wide range of countries, including Germany [48], Pakistan [49], and China [50]. In addition, customers' PV for certain kinds of sustainable products, such as green energy and organic food, was determined to increase their attitude gratification. To consumers, sustainable-labeled products contemporaneously accrue desirable benefits from their unique backstory [51]. Research by [52] highlights that because eco-friendly products are unique, buyers may develop a distinct attitude toward them. Based on this logic, the following hypothesis is proposed:

H6: *PV is positively associated with ATT.*

In sustainable behavior research, PV has been sparsely used to predict intention, while value has been demonstrated to be an important factor in consumer behavior and purchases [53]. The research by [54] also stated that a product should have a message that buyers will find beneficial. Furthermore, they found that consumers' perceptions of value affected their behavioral intentions toward sustainable products. Specifically, if the green product or service is thought to aid or boost PV, purchase intention rises [2], [54], [55]. Therefore, the following hypothesis is presented:

H7: *PV is positively associated with ISC.*

More remarkably, PV predicts behavioral intentions better than satisfaction [56] and is the ultimate foundation of actual behavior [28].

For initial purchases, quality emerged as the most salient predictor of repurchase intentions, whereas among repeat customers, PV exhibited the highest predictive efficacy [57]. Consequently, the appraisal of customer value assumes a pivotal role in shaping consumer choice, thereby underscoring the indispensable significance of value as a principal constituent within the domain of relationship marketing [58].

Leveraging the prior knowledge, the present study posits the following hypothesis:

H8: *PV is positively associated with SCB.*

Many novel factors have been incorporated through extensive empirical investigations to enhance the TPB model's predictive ability. Interestingly, however, an inadequate level of scholarly attention is dedicated to the comprehensive examination of mediating and moderating variables in sustainable consumption [35]. Customers profess positive, sustainable beliefs about their purchasing behavior, yet they struggle to put them into practice due to a range of internal and external factors. Customers are willing to sacrifice convenience, tolerate lower levels of performance, and/or pay higher prices for sustainable products, based on considering their own trade-offs [30], [59]. The study by [60] showed that, when a millennial's PV of a "green restaurant" is appreciated, consumers are more likely to overcome suspicious attitudes and intend to revisit that restaurant. In terms of internal moderators, this empirical research examines PV's moderating influence to provide a more comprehensive explanation of the disparity between attitudes and real-life behavior in the realm of sustainable consumption.

Based on this argument, the following hypothesis is proposed:

H9: *PV moderates the relationship between attitude and SCB.*

The study's research framework is shown in Figure 1.

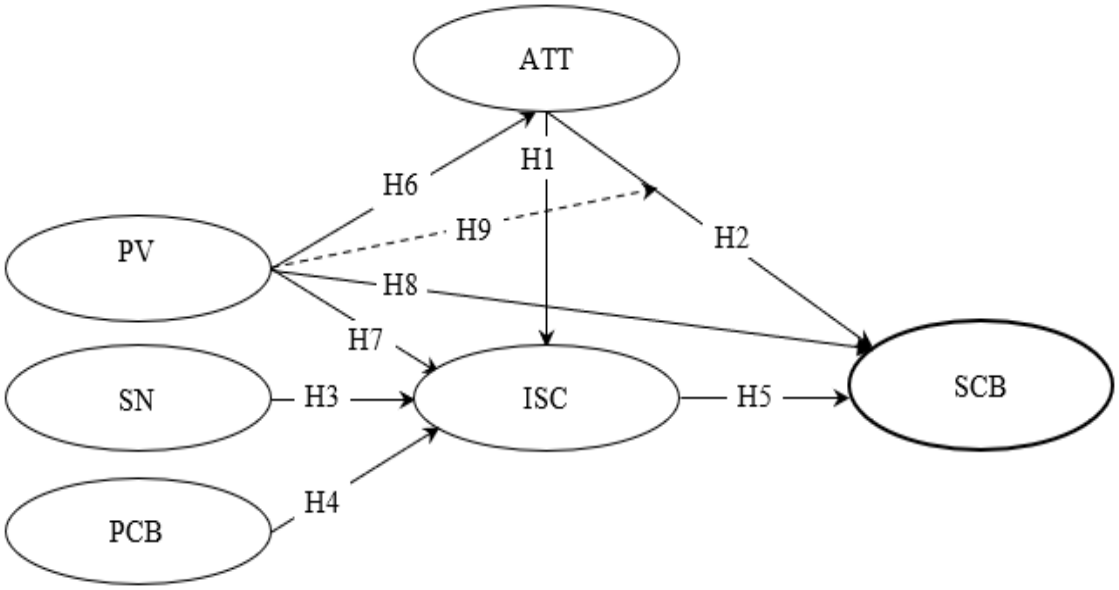

Figure 1. Proposed model

Note: ATT = Attitude toward the behavior; ISC = Intention for Sustainable Consumption; PBC = Perceived Behavioral Control; PV = Perceived Value; SCB = Sustainable Consumption Behavior; SN = Subjective Norms.

3. Methodology

This study uses the term "sustainable products" in the experiment, which is commonly labelled among Vietnamese consumers as "recycle", "organic", "Vietnam green", "energy", "eco-friendly", "carbon neutral", "no animal testing", "sustainable tourism", etc. These terms can be beneficial in connecting with and enticing consumers to engage in sustainable consumption [61]. A filter question is used to select customers with a sustainable consumption experience. For those without such experience, this research stops the interview and inquires about their unawareness of sustainable products.

Prior to the official data collection, a pilot was conducted with 79 respondents. Then, using convenient sampling with a hybrid survey of both online and offline questionnaires, the data collection received 724 responses from March to May 2023 in Vietnam (Table 1). The rate of unawareness of sustainable labels was approximately 16% across 122 questionnaires, of which 84 were excluded from this study. As a result, 518 valid answers were obtained. Statistical results show that most respondents' education level is college (73.9%), and they are mostly students (63.7%) and office staff (18.5%), with a concentration in the 18 to 24 age group. Respondents were geographically distributed across Vietnam, from the North to the South. There was also a large proportion of non-religious people (370, or 71.4%), followed by Buddhists and Catholics (20.8% and 4.8%, respectively).

Table 1. Sample descriptive data

Factor	Category	Number (N=518)	Ratio (%)
Gender	Female	359	69.3
	Male	154	29.7
	Other	5	1.0
Education	Post-graduate	70	13.5
	College	383	73.9
	High school	60	11.6
	Below high school	5	1.0
Age	Under 18	33	6.4
	18 - 24	332	64.1
	25 - 35	78	15.1
	36 - 45	59	11.4
	45 - 55	12	2.3
	over 55	4	0.8
Job	Office staff	96	18.5
	Student	330	63.7
	Worker	8	1.5
	Expert/Specialist	49	9.5
	Business owner	20	3.9
	Other	15	2.9
Income	Under 5m VND	312	60.2
	5 -10m VND	103	19.9
	10 -15m VND	40	7.7
	15 - 20m VND	33	6.4
	Over 20mVND	30	5.8
Areas	North	237	45.8
	Middle	57	11.0
	South	224	43.2
Religion	Non-religious	370	71.4
	Buddhist	108	20.8
	Catholic	25	4.8
	Christian	6	1.2
	Other	9	1.7

This study measures the following six constructs: ATT, SN, PBC, ISC, SCB, and PV. ATT was designed with six observed items measured based on a study [62]. Five observed items represented SN according to [62]. PBC was measured by five items selected from [62]. Six items representing ISC were taken from [2]; for SCB, original scales were adapted from [63]. Finally, PV was measured according to [5] with 17 items. A five-point Likert scale was used to evaluate all constructs, as detailed in Appendix A.

Sustainable consumption practices and strategies vary among countries based on their demographic characteristics [64]. In studies concerning sustainable consumption, gender and education level emerge as frequently investigated variables, including age, marital status, gender, number of children, education level, and socio-economic status [65]. Regarding occupation status, [66] demonstrated its significant effect on consumers' purchase intentions. Research by [67] found that religions provide specific norms and moral arguments related to green consumption behaviors. This study considers gender, age, income level, education level, religion, and profession as control variables on SCB.

In this paper, Smart PLS version 3.2.9 is used to evaluate the prediction of the structural model, encompassing: (1) Assessment of the outer model to determine the reliability and validity of PV's reflective construct; and (2) Assessment of the inner model. The proposed hypotheses and all path coefficients for the six factors in this research framework are also evaluated.

4. Results

This section presents the study's empirical findings, beginning with an evaluation of the research instrument's reliability and validity.

4.1. Assessment of the Measurement Model

To ensure comprehensive coverage of this research model, PV is treated as a latent construct that is analyzed reflectively [68]. It is also necessary to include two supplementary measurement models that align with the corresponding evaluation criteria [69]; (1) The measurement models of the lower-order PV dimensions (FV, SV, EV) are interrelated and reflected by manifest indicators; and (2) The measurement model of the final construct, involving the higher-order component PV and five other factors, is assessed within the model framework.

In the initial step, the standard model is used to estimate and assess the measurement model of the lower-order components of PV, establishing direct relationships with the constructs. In the subsequent step, the PV model is constructed and estimated.

As shown in Table 2, the value of both Cronbach's alpha and composite reliability for the final constructs in this research is well above the threshold of 0.7 [70]. The average variance extracted is all greater than 0.5, which remains adequate [70].

Table 2. Reliability and validity of constructs

Constructs	Loading	CA	CR	AVE
ATT		0.883	0.911	0.632
ATT1	0.815			
ATT2	0.795			
ATT3	0.764			
ATT4	0.819			
ATT5	0.786			
ATT6	0.788			
SN		0.879	0.912	0.674
SN1	0.796			
SN2	0.782			
SN3	0.857			
SN4	0.816			
SN5	0.850			
PBC		0.875	0.909	0.667
PCB1	0.825			
PCB2	0.791			
PCB3	0.857			
PCB4	0.808			
PCB5	0.802			
ISC		0.869	0.910	0.718
ISC1	0.848			
ISC3	0.867			
ISC4	0.841			
ISC5	0.832			
PV		0.904	0.940	0.839
FV	0.912			
EV	0.930			
SV	0.906			
SCB		0.871	0.912	0.721
SCB1	0.849			
SCB2	0.861			
SCB3	0.846			
SCB4	0.840			

Note: CA = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted; ATT = Attitude toward the behavior; ISC = Intention for Sustainable Consumption; PBC = Perceived Behavioral Control; FV = Functional Value; EV = Emotional Value; SV = Social Value; SCB = Sustainable Consumption Behavior; SN = Subjective Norms.

Comparing the values shown in Table 3, it is found that the square root of the AVE is larger than the correlation between the structures. This means that the construct of this study satisfies the discriminant requirement based on the Fornell-Larcker criterion [70].

Table 3. Fornell-Larcker criterion

	ATT	ISC	PCB	PV	SCB	SN
ATT	0.795					
ISC	0.734	0.847				
PCB	0.749	0.752	0.817			
PV	0.767	0.835	0.796	0.916		
SCB	0.737	0.809	0.716	0.859	0.849	
SN	0.682	0.698	0.676	0.792	0.715	0.821

Notes: ATT = Attitude toward the behavior; ISC = Intention for Sustainable Consumption; PBC = Perceived Behavioral Control; PV = Perceived Value; SCB = Sustainable Consumption Behavior; SN = Subjective Norms.

4.2. Structural Model Assessment and Hypothesis Testing

This study uses PLS-SEM to analyze the data and construct the final model, including all standardized path coefficients, significance levels, and explanatory levels for the dependent and control variables (Table 4). The explanation of the structural model for the dependent variable (SCB) through the value of R^2 = 0.782 (78.2%) is described as substantial and significant in terms of marketing issues [71].

Among the four factors that directly affect ISC, PV shows the strongest significant positive effect on ISC (β = 0.539, p-value < 0.001) compared with PCB (β = 0.173, p-value < 0.05) and ATT (β = 0.161, p-value < 0.001); thus, these results support H1, H4, and H7. Meanwhile, this research finds that the p-value for SN is greater than 0.05 (β = 0.173, p-value = 0.438), which is not significant and does not support H3.

Moreover, PV similarly prevails over ATT, with a positive association with SCB, with β and p-value in the following order: 0.531 (p-value < 0.001) and 0.144 (p-value < 0.001). Notwithstanding this study's contention, PV is positively associated with ATT (β = 0.767, p-value < 0.001). As a result, hypotheses H2, H6, and H8 are supported. Finally, ISC has a significant effect on SCB, with β = 0.278 and p-value < 0.001, confirming H5. Table 4 presents the details of all hypothesis testing results.

Table 4. Path coefficient and hypothesis testing

Hypothesis	Relationship	β
H1	**ATT -> ISC**	0.161***
H2	**ATT -> SCB**	0.163***
H3	**SN -> ISC**	0.044^{ns}
H4	**PCB -> ISC**	0.173*
H5	**ISC -> SCB**	0.278***
H6	**PV -> ATT**	0.767***
H7	**PV -> ISC**	0.539***
H8	**PV -> SCB**	0.531***
H9	**PV*ATT -> SCB**	0.021*
Control variables		
	AGE -> SCB	0.034^{ns}
	EDUCATION -> SCB	0.094***
	GENDER -> SCB	-0.008^{ns}
	INCOME -> SCB	0.010^{ns}
	JOB -> SCB	0.036^{ns}
	REGION -> SCB	-0.010^{ns}
	RELIGIOUS -> SCB	-0.006^{ns}

*Note: ***** = p < 0.001; * = p < 0.05; ns = Not Supported;** ATT = Attitude toward the behavior; ISC = Intention for Sustainable Consumption; PBC = Perceived Behavioral Control; PV = Perceived Value; SCB = Sustainable Consumption Behavior; SN = Subjective Norms.*

The p-value for the relationship between PV*ATT and SCB is 0.014 < 0.05, indicating that PV*ATT has an impact on SCB. Therefore, H9 is supported. Moreover, the regression coefficient β = 0.021 indicates that PV's involvement is associated with the positive association between ATT and SCB. Additionally, among the six demographic variables, education level was found to be associated with SCB in the Vietnamese context (β = 0.094, $p < 0.001$).

Figure 2 shows the moderating influence of PV, with linear trends based on low and high values. Consistent with expectations, when PV was moderate to high, ATT was positively associated with SCB, and vice versa. This discovery holds significant implications for this research, as it adds PV as a potential factor contributing to the mismatch between customer attitudes and their practical actions in sustainable consumption practices. These findings also support the position that relatively high levels of PV are necessary to influence the relationship of ATT to SCB.

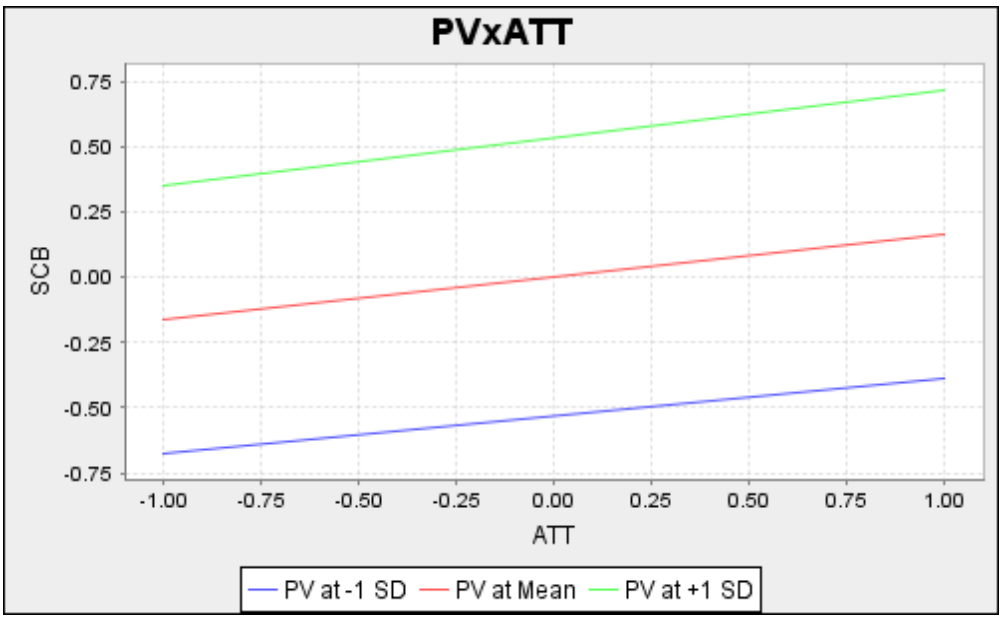

Figure 2. The moderating effect of PV on the relationship between ATT and SCB
Note: ATT = Attitude toward the behavior; SCB = Sustainable Consumption Behavior.

5. Discussion

PV emerged as the most influential predictor across multiple relationships, exerting strong, significant effects on ISC, ATT, and SCB. This aligns with TPV's premise that consumer choice is shaped by a subjective trade-off between perceived benefits and sacrifices [11], [13]. The significant path from PV to ATT reinforces prior findings that value perceptions enhance favorable orientations toward sustainable products [48], [50] and supports the multidimensional view of value, functional, emotional, and social, highlighted in prior research [5], [20]. Specifically, the functional dimension in minimizing environmental harm [26], the social prestige benefits [2], [54], and the emotional appeal [28] together explain why PV strongly influences ATT.

The direct influence of PV on both ISC and SCB underscores its central role in shaping sustainable practices, consistent with [56] and [28]. This aligns with [55] argument that products delivering perceived personal benefits drive stronger behavioral intentions and [58] view of PV as a core element in relationship marketing. Embedding environmental and social responsibility features, such as avoiding animal testing, supporting charitable causes, and adopting fair trade practices [17], [18], can enhance PV and, consequently, both attitudinal and behavioral engagement.

Consistent with TPB, ATT and PBC significantly predicted ISC, while ATT also directly influenced SCB. This dual pathway supports studies showing that ATT can bypass ISC and directly shape SCB, especially for products with high repeat purchase frequency or low cognitive effort [32], [33], [35].

The ISC–SCB link remains robust, aligning with [4] proposition and supported in contexts such as organic food [45], sustainable clothing [46], and solar adoption [29].

SN did not significantly predict ISC, diverging from findings in collectivist contexts where social pressure often drives sustainable behavior [36], [38]. This may indicate a shift in urban Vietnam toward individualized decision-making, in which personal evaluations and PV outweigh normative influences. While social identification can promote ethical consumption [38], such effects appear weaker when PV is low. This aligns [72] but it is contrary to several past investigations that report the significant impact of SN [50], [73].

The significant moderating effect of PV on the ATT-SCB relationship suggests that higher PV strengthens the translation of positive attitudes into actual sustainable actions. This aligns with [60], who found that perceived benefits amplify the ATT-SCB link, helping bridge the well-documented attitude-behavior gap in sustainable consumption [30]. Consumers perceiving high PV are more willing to overcome barriers such as performance concerns, price premiums, or convenience sacrifices [30], [38], leading to greater alignment between ATT and SCB.

Among demographics, only education significantly influenced SCB, supporting evidence that higher education correlates with environmental awareness and pro-sustainability engagement [31]. Other demographics, including gender, age, income, job type, region, and religion, were not significant, suggesting that behavioral differences in Vietnam are strongly driven by PV and ATT rather than by socio-demographic segmentation.

5.1. Theoretical Implications

This study establishes PV toward sustainable products as a higher-order reflective construct comprising functional, emotional, and social dimensions, consistent with the Theory of Consumption Value [5]. By positioning PV as an antecedent to ATT, the research extends the scope of the traditional TPB, demonstrating that value perceptions substantially shape attitudinal orientations toward sustainable consumption. The findings further reveal that PV exerts a unidirectional moderating effect on the ATT-SCB relationship, strengthening or weakening the translation of attitudes into actual behavior depending on perceived value levels. These results reinforce prior theoretical perspectives on sustainable consumption, which argue that the attitude–behavior link is contingent upon individual and contextual factors. By integrating PV into the TPB framework, the study addresses recognized limitations of the original model in predicting SCB [30], [34], [74] and offers an enriched predictive structure. Unlike most previous extensions, which primarily introduce additional predictors, this research explores the endogenous regulatory role of PV within the model, aligning with but distinct from earlier efforts such as [75], who identified consumer effectiveness as a mediator. Overall, the modified framework provides a more comprehensive explanation of SCB, highlighting PV as both a direct driver and a behavioral enabler. This contributes to the sustainable consumption literature by offering a theoretically grounded and empirically supported approach to narrowing the attitude–behavior gap, thereby informing both scholarly inquiry and practical interventions.

5.2. Practical Implications

Past literature indicates that ATT toward a product often fails to translate into consistent behavior, especially in the context of sustainable consumption [46]. This study contributes to resolving this misalignment by demonstrating that PV provides a more comprehensive explanation of SCB than ATT alone. Even among consumers with strong environmental awareness, purchasing decisions are shaped by their evaluation of product characteristics [76]. PV offers a structured framework for this evaluation, encompassing functional, emotional, and social considerations, and grounding decision-making in deliberate assessments rather than solely in affective responses. Behaviors driven by PV tend to be more enduring and impactful because they stem from reflective judgments based on experience rather than transient attitudes.

Once PV is properly understood, businesses can take targeted steps to reduce the "sustainable attitude–behavior gap." An important contribution of this research is the evidence that PV moderates the relationship between ATT and SCB. This finding suggests that marketers can bridge the gap between attitudes and behaviors by enhancing the perceived value customers derive from sustainable products. Practical strategies include improving FV by ensuring product quality and environmental performance, elevating EV by creating positive emotional associations with sustainability, and increasing SV by linking products to social prestige and collective well-being. The PV-integrated TPB model developed in this study improves the explanatory and predictive capacity for SCB, offering a stronger theoretical basis for addressing inconsistencies between ATT and SCB. Future research in markets with socio-cultural contexts similar to Vietnam's can adapt and test this model to further refine sustainable consumption strategies. This study also found that SN did not significantly influence ISC. This may be due to consumer skepticism toward sustainability claims [77] or the influence of individualistic tendencies, where personal benefits outweigh conformity to group norms [78]. In such contexts, shaping collective awareness is more challenging than tailoring solutions to individual needs. Consequently, rather than focusing predominantly on reference groups or opinion leaders, businesses should prioritize understanding customers' unique preferences and incorporating those traits into product attributes [62]. Education was also identified as a factor influencing SCB, with higher education linked to stronger sustainable behaviors. This supports the argument that education equips individuals to better understand complex sustainability issues, leading to greater engagement in sustainable practices. However, sustainable consumption remains an unfamiliar concept for a substantial portion of the Vietnamese population [79]. This underscores the need for coordinated efforts between government and industry to promote environmental knowledge through formal education and public campaigns, while marketing initiatives should emphasize relatable and actionable sustainability messages to raise awareness and foster positive attitudes toward SCB. Furthermore, the integration of SCB into digital platforms and the advancement of digital entrepreneurial processes are strongly supported by government policies [80], family foundations [81] and educational programs [41].

6. Conclusion

This study integrated TPB and TPV to investigate the determinants of ISC and SCB in the Vietnamese context, providing empirical evidence for the theoretical and practical importance of value-based predictors in sustainable consumption. The model demonstrated substantial explanatory power, with PV emerging as the most influential driver, exerting strong direct and indirect effects on both ISC and SCB, and moderating the ATT-SCB relationship. These results confirm the centrality of PV in bridging the attitude–behavior gap and underscore the need to enhance perceptions of functional, social, and emotional value to encourage sustainable practices. Consistent with TPB, ATT and PBC significantly influenced ISC, and ATT also directly shaped SCB, indicating that favorable attitudes can, under certain conditions, bypass intention to influence behavior. The strong ISC-SCB link further reinforces the view that intention is a critical antecedent of sustainable actions. Conversely, SN did not significantly influence ISC, suggesting that personal value perceptions may outweigh normative pressures in shaping sustainability decisions in Vietnam's evolving consumer landscape. From a theoretical perspective, this research extends TPB by incorporating PV as both a direct predictor and a moderator, thereby providing a more comprehensive explanation of the determinants of sustainable consumption. From a practical standpoint, the findings highlight the importance of marketers, policymakers, and sustainability advocates designing strategies that elevate PV through quality assurance, emotional engagement, and visible social responsibility commitments.

Despite this research's efforts to mitigate potential adverse influences on the research outcomes, this study inevitably faces certain subjective and objective limitations, as outlined below. The sample size in this study is sufficient for making statistical conclusions. Still, it may result in slight discrepancies due to specific characteristics of the sample being more prominent than in the overall population: 73.9% of respondents have a college education; the student-to-faculty ratio is 63.7%; and 69.3% of participants are female. This study found that the latent variable PV moderates the association between ATT and SCB; however, the specific weights of FV, EV, and SV in this moderating relationship have not been explicitly elucidated. Subsequent investigations can provide a more comprehensive understanding of this moderating relationship by conducting a detailed analysis of the role of PV components as a lower construct. Furthermore, this study's findings have limitations in generalizing the buying behavior of sustainable products.

The implications derived from this research center on the broader context of products labeled as sustainable and, therefore, cannot be directly applied to the specific context of purchasing behavior for a particular product type. Future research endeavors can address this by examining buying behavior within specific product categories, thus offering more detailed and insightful business recommendations. Finally, the result of hypothesis testing fails to support the positive influence of SN on ISC. Additional research is needed to explore this area of contention and offer a more comprehensive explanation for this issue. Additionally, future research may also build on contextual opportunities in Vietnam. E-commerce, social commerce, and digital platform entrepreneurship, together, create a fertile environment for digital business growth. Embedding sustainable products and practices into these platform ecosystems would harmonize institutional supports with consumer behavior, potentially enhancing ATT toward sustainable options, reinforcing SN through family and community influence, and improving PBC via educational and policy-driven facilitation. Such integration is likely to increase ISC and translate intentions into actual SCB, thereby aligning entrepreneurial innovation with sustainable consumption and production goals in Vietnam.

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Appendix A. Measurement Items

Statement
Attitude (ATT). *Adapted from Paul et al. (2016).* 1. I have a favorable attitude toward purchasing sustainable-labeled products. 2. I have a positive view of sustainable-labeled products. 3. I am attracted to sustainable-labeled products. 4. I love sustainable-labeled products. 5. I support increased use of sustainable-labeled products. 6. I am willing to participate in programs that promote sustainable consumption.
Subjective norms (SN). *Adapted from Paul et al. (2016).* 1. My family members think I should purchase sustainable-labeled products. 2. My idols encourage me to purchase sustainable-labeled products. 3. My friends, colleagues, and neighbors encourage me to purchase sustainable-labeled products. 4. When I see media, I feel the need to use sustainable-labeled products. 5. Society and community advocate sustainable lifestyles.
Perceived behavioral control (PBC). *Adapted from Paul et al. (2016).* 1. I have the resources, time, and willingness to purchase sustainable-labeled products. 2. Sustainable-labeled products are generally available in the stores where I usually do my shopping. 3. There are likely to be plenty of opportunities for me to purchase sustainable-labeled products. 4. I have enough ability and knowledge for sustainable consumption. 5. I can easily control sustainable consumption behavior.
Perceived Value (PV). *Adapted from Sweeney and Soutar (2001).* ***Functional value*** **(FV)** 1. Sustainable-labeled products have consistent quality. 2. Sustainable-labeled products have an acceptable standard of quality. 3. Sustainable-labeled products offer value for money. 4. Sustainable-labeled products are economical. 5. Sustainable-labeled products are safer than general products. 6. Sustainable-labeled products contribute to improving overall health and well-being more than general products. 7. Sustainable-labeled product production does not pollute the environment. ***Emotional value*** **(EV)** 1. I enjoy sustainable-labeled products. 2. I feel comfortable with using sustainable-labeled products. 3. Using sustainable-labeled products makes me feel pleasure. 4. Using sustainable-labeled products makes me feel relaxed. 5. Using sustainable-labeled products makes me feel happy. ***Social value*** **(SV)** 1. Purchase of sustainable-labeled products will help me gain social approval. 2. Purchase of sustainable-labeled products will make a positive impression on peer groups. 3. Consumption of sustainable-labeled products will improve the way I am perceived. 4. Consumption of sustainable-labeled products will help me feel socially acceptable. 5. Consuming products with sustainable labels will help me build an image of a savvy customer.
Intention for Sustainable Consumption (ISC). *Adapted from Biswas and Mousumi Roy (2015).* 1. I have the intention to purchase a product if I find it sustainably labeled. 2. Given that sustainable-labeled products are readily available, I predict that I will use them in the future. 3. To me, it is worthwhile to consume sustainable-labeled products despite their premium pricing. 4. I am willing to purchase sustainable-labeled products at a higher price for their environmental benefits. 5. I am willing to pay much higher taxes to buy sustainable-labeled products. 6. I am willing to recommend sustainable-labeled products to others.
Sustainable consumption behavior (SCB). *Adapted from Gao et al. (2017).* 1. I often buy sustainable-labeled products. 2. I have switched to purchasing sustainable-labeled products. 3. In the long term, I will accept cuts in my standard of living to purchase sustainable-labeled products. 4. I have avoided buying a product if it has not included sustainable-labels.