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Holistic Antecedent Analysis of Behavioral Intention among Green Consumers in the Philippines: A Sustainability Theory of the Planned Behavior Approach

Shiela Mae C. Ilagan [1], Ardvin Kester S. Ong [1,2,*], Josephine D. German [1], Ma. Janice J. Gumasing [3] and Kyla Marie P. Pabalan [1]

[1] School of Industrial Engineering and Engineering Management, Mapúa University, 658 Muralla St., Intramuros, Manila 1002, Philippines
[2] E.T. Yuchengo School of Business, Mapúa University, 1191 Pablo Ocampo Sr. Ext., Makati 1204, Philippines
[3] Department of Industrial and Systems Engineering, Gokongwei College of Engineering, De La Salle University, 2401 Taft Ave., Manila 1007, Philippines
* Correspondence: aksong@mapua.edu.ph; Tel.: +63-(2)8247-5000 (ext. 6202)

Abstract: Concerns over sustainability have recently drawn more attention in a post-COVID-19 environment, particularly from developing countries. This heightened global awareness of sustainability highlights the importance of comprehending consumer behavior in purchasing green products. This study utilized an extended theory of planned behavior (TPB) called the sustainability theory of planned behavior (STPB) to holistically assess the behavioral intention among green consumers in a particular developing country: the Philippines. Convenience sampling was used with 500 participants, and 54 modified questions were distributed online. Different factors, such as perceived environmental concern, perceived economic concern, perceived authority support, subjective norm, attitude, perceived behavioral control, customer perceived value, and purchasing intention, were assessed concurrently through the structural equation modeling (SEM) approach. Through this, it was discovered that all the STPB predictors were significant drivers affecting the consumers' purchasing intention, with customer perceived value having the highest direct effect. Moreover, it was found that the relationship between perceived economic concern on subjective norms and perceived behavioral control was insignificant. Further implications and comparisons were made based on the results of the study. The study's findings can be utilized to help policymakers and marketers devise strategies that will effectively encourage sustainability through targeted interventions and increased product awareness. The study has validated the integration of new constructs into the TPB, enhancing the predictive power of the proposed model for assessing the behavioral intention to purchase green products. Thus, the model construct can be applied and utilized to investigate other topics regarding sustainability.

Keywords: sustainability; consumer behavior; sustainability theory of planned behavior; structural equation modeling

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1. Introduction

Environmental pollution is an escalating issue that jeopardizes human welfare and the planet. It has become a critical issue, causing adverse environmental impacts, including climate change, biodiversity loss, water scarcity, and air pollution. These environmental issues are more prevalent in developing countries, where many industries and businesses operate with fewer regulations [1]. One of the leading causes of pollution is the excessive use of plastic.

The problem of plastic pollution has gained substantial attention, particularly in developing countries where waste management systems are not adequately developed [2]. Single-use plastics have become a norm in many industries, from packaging to retail,

resulting in increased plastic waste in landfills or oceans [3]. The transportation sector is also a significant contributor to pollution, specifically the combustion of fossil fuels in cars, buses, and other vehicles. This has led to increased levels of air pollution, severely impacting human health, particularly in urban areas [4].

Industries that rely on fossil fuels, such as energy production and manufacturing, are also significant contributors to pollution [5]. Furthermore, agricultural practices, such as using pesticides and fertilizers, have also contributed to environmental pollution. These chemicals adversely affect soil and water quality, affecting human and animal health [6]. Given the negative impacts of pollution, promoting sustainable behavior among consumers is essential. Green consumers, in particular, play a vital role in promoting sustainable behavior, as they are more conscious of the environmental impacts of their actions [7]. Understanding the antecedents of behavioral intention among green consumers in developing countries is crucial for promoting sustainable behavior and mitigating the negative impacts of pollution.

The Philippines is the third biggest source of ocean pollution due to its yearly contribution of 0.75 million metric tons of plastic garbage. This has sparked increased awareness about the necessity of managing plastic waste and heightened concerns about plastic pollution among consumers [8]. Regarding industrial waste, data show a significant increase in waste generated by the industrial sector in recent years. According to the Philippine Statistics Authority, industrial waste generated in the country increased 36.2% from 2014 to 2018. The industrial sector was one of the country's top garbage generators in 2018, generating 5.5 million tons of solid waste. This rise is particularly concerning given the need for proper waste management practices in many parts of the country. Without effective management strategies, this waste can contaminate soil and water sources, harm human health, and contribute to air pollution. Additionally, the growth of the industrial sector is likely to continue, leading to a projected further rise in the quantity of waste produced.

Customer awareness has seen a substantial rise and manufacturers' and retailers' interest in delivering more sustainable supply chains and products [9]. As consumers become more aware of the value of purchasing sustainable goods, they prioritize making environmentally friendly choices. According to trends in purchase behavior, consumers appear to be increasingly worried about the environment despite supply constraints and general panic-induced spending during the COVID-19 pandemic [10].

People became more conscious of global issues, and the pandemic prompted consumers to have a larger perspective on local resources and individual behaviors, notably the environmental impact. According to Zadjafar and Gholamian [11], consumer awareness of sustainability and environmental protection has increased globally, and this has caused it to become the subject of most studies, particularly concerning global supply chains. Even with the increasing consideration of sustainable practices by different industries, the supply chain industry still needs to work on incorporating sustainability aspects into their processes, primarily due to the environmental, social, and economic aspects that pose challenges in reducing carbon emissions. Despite the supply chain industry's desire to switch to sustainable practices, several challenges hinder this transition.

One of the challenges is the need for more understanding of consumer behavior. To effectively implement sustainable practices, it is crucial to grasp consumer sentiments and behaviors toward sustainable products and techniques. According to a study by Khan et al. [12], sustainable practices encounter multiple obstacles within supply chains, including issues such as limited awareness, inadequate resources, complex regulatory requirements, and poor stakeholder collaboration. Another study by Zhu et al. [13] identified challenges related to the high cost of implementing sustainable practices, the insufficiency of standardization in sustainable practices, and the need for innovation in sustainable technologies. Moreover, Agu et al. [14] revealed that one of the primary obstacles to the adoption of sustainable practices is the need for more consumer demand for sustainable products. The study found that consumers prioritize product quality, price, and conve-

nience over sustainability. Therefore, it is necessary to enhance consumer awareness and education about sustainable products and practices.

Supply chains can implement various strategies to address these challenges, such as improving transparency and communication among stakeholders, collaborating with suppliers and customers, investing in sustainable technologies, and creating incentives for sustainable practices [12]. Understanding and influencing consumer behavior through marketing and education campaigns can also help promote the demand for sustainable products and practices [14]. While some research suggests developing countries are slowly adapting to sustainable behaviors (e.g., imitating the consumption patterns and behaviors of those in developed countries) [15], most studies focus on a general perspective rather than people's behavioral intention in purchasing green products [16]. A comprehensive examination of pro-environmental or sustainable practices concerning human behavior is yet to be fully explored. Therefore, there needs to be more research to understand the behavioral analysis of green consumers in developing countries. Especially in recent times, where people have considered adopting sustainable behavior, a reassessment of the intention for green product purchases is needed.

The theory of planned behavior (TPB), developed initially three decades ago, is still one of the most popular frameworks for examining individual behaviors. In fact, according to a Google Scholar search, this theory has been referenced about 17,000 times as of 2022. However, TPB has received several critiques due to its requirement for additional variables to comprehensively elucidate the factors that drive individuals to partake in a specific behavior within situations [17]. Thus, some researchers have made changes or improved the theory by extending it and introducing new elements to the original TPB model, mainly when there are factors that they want to consider to strengthen its predictive power [17–19].

This study considered the five domains of sustainability, namely human (attitude in the TPB model), social (social norm), productivity (perceived behavioral control), economic (perceived economic concern), and environmental (perceived environmental concern). Since individuals have limited control over their actions given the government's policies and regulations, as perceived authority support is an additional factor if there are positive outcomes between the government and its citizens for sustainability practices, and the customer's perceived value in determining people's purchasing intention of green products. With that, the study proposes a new framework, called the sustainability theory of planned behavior (STPB). The framework will provide a deeper insight into individuals' behavioral aspects toward purchasing green products, which will help industries and supply chains develop strategies to overcome the challenges they face in their transition to sustainability.

According to several studies, people are on the verge of considering eco-friendly practices, deciphering people's pro-environmental behavior to practice sustainability. Holison [20] discovered that when people believe their actions have a greater environmental effect, they are more likely to consider sustainable goods. According to the research, raising consumer awareness of the impact of everyday activities can encourage them to consider sustainability practices. Huang [21] discovered that when consumers believe a product's sustainability claims are trustworthy and supported by evidence, they are more likely to consider purchasing it. According to him, businesses that invest in credible sustainability practices and provide evidence to back up their claims can increase consumer trust and loyalty. Lastly, Frostenson and Johnstone [22] recognized that a person is more probable to participate in sustainable practices, and there is a feeling of accountability toward the environment.

Multiple aspects of sustainability have evolved due to in-depth discussions with scientists and a literature review. The five domains that comprise these dimensions are productivity, economic factors, the environment, the human condition, and social aspects [23]. Productivity involves examining the ability to produce goods and services efficiently and effectively. This domain is critical because increasing productivity can help to reduce waste, optimize resource usage, and improve the overall performance of individuals and organizations [24].

Economic factors pertain to financial systems and structures that support economic growth and development [25]. In behavioral studies, economic sustainability involves examining sustainable financial decisions, reducing debt, and investing in socially responsible ways [26]. The environment relates to natural resources and ecosystems that sustain life on Earth [27]. Environmental sustainability involves examining how individuals and organizations can reduce their ecological footprint, conserve resources, and promote sustainable practices that protect the environment.

The human condition encompasses factors contributing to human well-being, such as health, education, and social justice. In behavioral studies, human sustainability involves examining how individuals and organizations can create inclusive and sustainable communities [28]. Lastly, the social domain pertains to social structures and relationships contributing to cohesion and stability. Social sustainability involves examining how individuals and organizations can foster positive social relationships and support sustainable social structures that ensure social harmony [29]. These domains are essential because they provide a framework for understanding people's behavior toward sustainability.

Many studies on environmental behavior, particularly those that seek to search the connection between intentions to buy sustainable products and actual behaviors, have also employed and extended the TPB [30–33]. This study opted to consider integrating the TPB, a model that determines and measures the behavioral aspects of individuals holistically with the sustainability domains, which has not yet been established. In addition, the novelty lies not only on the assessment of Filipino behavioral intention but the establishment of a more holistic theoretical model for sustainability assessment. This study contributes more on the research gap found in related studies. That is, a separate assessment of significant behavioral domains, sustainability factors, and the overall perception of value has yet to be established in the Philippine context.

Findings among related studies suggested that emphasizing personal responsibility in sustainability campaigns can be an effective method to encourage sustainable behaviors. This study intends to investigate the predisposing variables among green consumers in a developing nation. Specifically, the factors or latent variables considered in the STPB model will be assessed simultaneously using SEM, thus providing practical and managerial implications for marketers in producing and promoting green products.

Understanding the elements impacting the behavioral intentions of green consumers in developing nations, such as the Philippines, based on the findings can help policymakers and marketers formulate efficient approaches to foster environmentally sustainable products and behaviors. This could also be related and employed in other countries. By identifying the barriers and motivations for green consumption, interventions can be designed to encourage individuals to switch to a sustainable lifestyle and benefit developing countries with a more sustainable economy, which this study provided. Enhancing consumers' comprehension of the eco-friendly products they purchase and fostering a favorable perception of them will also help business owners publicize the green products and their ecological advantages.

2. Theoretical Framework and Research Hypotheses

The STPB model is a newly developed framework through the extension of the TPB integrated with sustainability domains [34] to predict the purchasing intention of green consumers. The model includes eight factors: perceived environmental concern (PENC), perceived economic concern (PECC), perceived authority support (PAS), subjective norm (SN), attitude (AT), perceived behavioral control (PBC), customer perceived value (CPV), and purchasing intention (PI). Figure 1 represents the theoretical framework developed for this study.

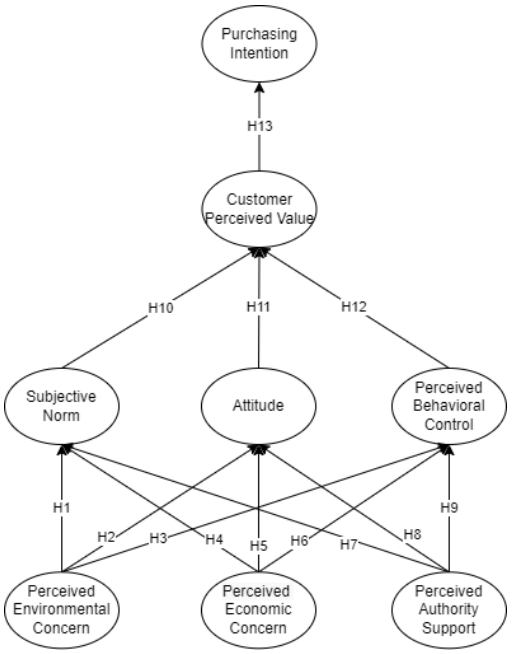

Figure 1. Sustainability Theory of Planned Behavior Framework.

PENC stands for the level of emotional engagement in environmental matters [35], and the awareness of these issues will encourage people to act as environmentally friendly [36]. Some studies evaluated how consumers' understanding of and willingness to invest in green products is developing, as those with a solid commitment are more inclined to buy sustainable products to express their concerns. In addition, PENC has positive and significant values to SNs [34,37] and PBC [37–39]. This is evident when Paul et al. [40] presented that environmentally concerned people could also impact other people's behavior through family and peer pressure by serving as "significant others" who approve or disapprove of other people's green purchasing habits. Moreover, when consumers become aware of eco-labels and certifications, they gain an in-depth knowledge of the products' functions and benefits, leading them to buy sustainable goods [30], including the likelihood to purchase if they perceive they have more significance. In another study, Tuncel and Bugday [41] stated that PENC directly affects AT, wherein individuals who prioritize environmental concerns are more prone to respond to ecological issues and take actions to address them. Hence, these hypotheses were constructed:

H1. *PENC directly influences SNs in purchasing green products.*

H2. *PENC directly influences AT in purchasing green products.*

H3. *PENC directly influences PBC in purchasing green products.*

PECC measures a person's emotional involvement in economic issues that motivate them to act sustainably. A study in Malaysia shows that consumers have tendencies to invest more in organic food products as they become more concerned about their health and adopt a "green" mindset [42]. Fauzi et al. [43] uncovered that Malaysian tourists are ready to pay an extra premium for green hotels. This demonstrates that consumers hold a favorable attitude toward green purchasing intention irrespective of the price level because doing so demonstrates personal concern for environmental preservation. However, due to their limited financial capabilities, middle-class consumers could only afford to purchase a brand at a premium price [44]. Therefore, it could be posited that economic concerns may be established as a factor affecting people's behavior, especially in developing countries. A study by Zwicker [45] stated that even though many consumers are willing

to pay extra and have positive attitudes toward bio-based plastic items, there needs to be more knowledge about these products, which may contribute to people's mixed or negative attitudes toward them. In the case of Generation Z consumers, they may spend more or less on green products depending on the current consumption trend due to their lower disposable income and greater price sensitivity [46]. Thus, the economic situation and financial resources consumers can access influence their purchase intents and choices. The high cost is the primary barrier to buying environmentally friendly goods [47]. Building upon the earlier findings, these hypotheses were formed:

H4. *PECC directly influences SNs in purchasing green products.*

H5. *PECC directly influences AT in purchasing green products.*

H6. *PECC directly influences PBC in purchasing green products.*

PAS can be viewed as one's perception of any actions, resources, regulations, or procedures made available to people that a legitimate company or the government could employ to carry out specific behaviors [34]. Government influence can promote the adoption of pro-environmental actions by creating regulations and practical protocols that make it easier to engage in such activities. The government is responsible for protecting the environment and continues to impact its citizens' environmental engagement significantly, even if it is a distant factor influencing environmental motivation [48]. In the Philippines, the government has developed the Philippine Action Plan for SCP (PAP4SCP), which functions as a blueprint for directing and shaping sustainable behaviors and operations in various industries and governmental levels. This will be achieved by implementing organized policy reforms and a range of measures spanning short-, medium-, and long-term objectives [49]. Environmental Impact Assessment (EIA) pro-environmental research by Nadlifatin et al. [50] showed that the government's support certainly influences PBC, SNs, and AT, indicating the cruciality of the government on its citizens' eco-label product consumption behavior. Thus, this study hypothesized the following:

H7. *PAS directly influences SNs in purchasing green products.*

H8. *PAS directly influences AT in purchasing green products.*

H9. *PAS directly influences PBC in purchasing green products.*

As indicated in the TPB [51], AT, SNs, and PBC have a crucial function in determining intentions and influencing behaviors. Attitude describes how positively or negatively other people see the action or conduct. It requires considering how the conduct will affect the results. The subjective norm, however, pertains to how others perceive the action or behavior, positively or negatively. PBC concerns individuals' assessments of the simplicity or complexity of executing the intended behavior across different situations and activities. Consequently, one's perception of behavioral control differs based on the circumstance [17]. Several studies have revealed a significant correlation between consumer attitudes and intentions to make green purchases in various cultures, countries, and product categories (e.g., sustainable clothing, hybrid cars, and organic food) [7,52–54]. According to Roh et al. [55], customers' green perceived value can have an impact on their attitudes toward consuming organic food. In the Algerian context, a study found a positive effect on one's attitude to their willingness to purchase organic food when environmental concern exists [56]. The findings of Hasan [57] and German et al. [58] also recommended that SNs and PBC strongly influence consumers' perceived value in green buying intentions and have positive impacts on them. Hence, the following hypotheses were established:

H10. *SNs directly influences CPV in purchasing green products.*

H11. *AT directly influences CPV in purchasing green products.*

H12. *PBC directly influences CPV in purchasing green products.*

CPV is the overall judgement of a product's usefulness, attributes, and performance as determined by their perceptions before, during, and after the purchase experience [34,59]. Consumer purchase intentions are based on perceived value, which is determined by carefully balancing perceived gains or advantages against perceived losses or risks [60]. Several studies have found that customer perceived value significantly affects purchasing intention. Liu et al. [59] recognized that consumers who think there is value in the product are more likely to experience satisfaction and express an intention to purchase. Kim et al. [61] stated that people's readiness to buy electric vehicles is affected by their perception of value. In green consumption behavior, Park and Kwon [62] found that consumers' perception of the value of energy-efficient actions has a favorable effect on their intention to act accordingly. Likewise, a reduced perception of the value of products can significantly diminish their intent to buy them. Li et al. [63] recommended that consumer views on the environmental advantages of green housing significantly impact their purchasing decisions. As a result, more extensive benefits from a product result in higher perceived value, which encourages a greater likelihood of purchase intention. With these, the following were constructed:

H13. *CPV directly influences the PI of green products.*

3. Methodology

3.1. Participants

The study encompassed 500 respondents between 18 and 65 years old who are interested in utilizing green products and who voluntarily participated in a self-administered questionnaire containing 54 modified questions (comprising 38 indicators and 7 latent variables), distributed over social media. Researchers frequently employ this data collection method when investigating purchasing intention [64–66]. The survey was publicly accessible on Facebook and several Facebook groups to achieve the desired number of respondents using an online survey, Google Forms.

3.2. Questionnaire

The questionnaire comprised two (2) components: the demographic profile of the respondents and the STPB model, which is the formulated theoretical framework in the study. The demographics section included gender, age, status, area of residence, education level, employment, total monthly household income, and the frequency of considering a sustainable product for use. Section two represented the latent variables of the STPB model [67–80], which are PI and PAS with (4) constructs each, CPV, SNs, AT, PBC, PENC, and PECC with (5) constructs each, to which all were taken from different studies shown in Table 1. The survey utilized 5 point-type Likert Scale (5 = strongly agree, 1 = strongly disagree) to evaluate the different constructs.

Table 1. Demographic profiles of the respondents (N = 500).

Category		N	%
Gender	Male	237	47.40%
	Female	263	52.60%
Gender	18–25	332	66.40%
	26–35	105	21%
	36–45	34	6.80%
	46–55	25	5%
	56–65	4	0.80%

Table 1. Cont.

Category		N	%
Status	Single	410	82%
	Married	84	16.80%
	Separated	6	1.20%
Area of Residence	Rural	122	24.40%
	Urban	378	75.60%
Employment	Unemployed	15	3%
	Student	300	60%
	Employed	172	34.40%
	Self-employed/Business Owner	13	2.60%
Education Level	Finished college or graduate degree	193	38.60%
	Attended college	260	52%
	Attended high school/Senior high school	47	9.40%
Total Monthly Net Income/Allowance	Less than 20,000	281	56.20%
	Less than 20,001–30,000	80	16%
	Less than 30,001–40,000	89	17.80%
	Less than 40,001–50,000	25	5%
	Above 50,000	25	5%
Frequency of considering a sustainable product for use	Never	10	2%
	Rarely	46	9.20%
	Sometimes	183	36.60%
	Often	178	35.60%
	Always	83	16.60%

3.3. Statistical Analysis

This examined the gathered data through the structural equation modeling (SEM), particularly the covariance-based SEM (CB-SEM) utilizing the AMOS (analysis of moment structure) application version 26 to check the correlations empirically and simultaneously among the variables of the established framework [79]. SEM, as a multivariate analysis technique, enables the researcher to statistically assess whether a proposed model is dependable with the collected data to validate the newly developed theory [18]. It is a widely employed analytical approach often utilized to test models in various social and behavioral science domains, as it determines the causal effect of latent variables simultaneously [17]. It has been used in several studies to evaluate the causal relationship between the extended TPB constructs towards purchasing sustainable products [80–82].

4. Results

4.1. Data Analysis

This study integrated the STPB framework to holistically assess the variables influencing consumers' behavioral intent to buy sustainable products in developing nations, with a particular focus on the Philippines. Five hundred respondents voluntarily took part in the survey via Google Forms. Table 1 outlines the descriptive statistical outcomes.

From this, it can be noted that 47.4% represent males while 52.6% represent females. In terms of age distribution, 66.4% of the respondents fall within the 18 to 25 age range, followed by 21% for 26 to 35 year olds, 6.8% for 36 to 45 year olds, 5% for 46 to 55 year olds, and 0.8% for 56 to 65 year olds. In terms of civil status, most of the respondents are single (82%), followed by married (16.8%), and only 1.2% were separated. In addition, 75.6% of the respondents reside in urban areas, while 24.4% live in rural areas. Regarding employment status, 3% are unemployed, 60% are students, 34.4% are employed, and 2.6% are self-employed or business owners. As for the education level, 52% attended college, 38.6% already finished college or a graduate degree, and the rest attended high school or senior high school, accounting for 9.4%. Regarding their total monthly net income or allowance, 56.2% of the respondents make less than 20,000 pesos, followed by those earning

20,001 to 30,000 pesos with 16%. Moreover, 17.8% fall within the 30,001 to 40,000 pesos income range, and 5% earn 40,001 to 50,000 pesos and above 50,000 pesos monthly. Lastly, 36.6% of the respondents consider a sustainable product for use sometimes, 35.6% often, 16.6% always, 9.2% rarely, and 2% never.

4.2. Structural Equation Model

The SEM approach was applied to identify meaningful associations that impact purchasing intention among green consumers in developing countries. The initial SEM model, comprising 8 latent variables and 38 indicators, is depicted in Figure 2 and ran with AMOS 25 [79]. As seen on the results, PECC had no significant effect on SNs (Hypothesis 4; *p*-value > 0.05) and PBC (Hypothesis 6; *p*-value > 0.05), which are represented by the broken lines. Thus, a revised model was established by eliminating the mentioned insignificant hypotheses.

Figure 2. Initial Model to Assess Green Behavioral Intention Among Filipinos.

Figure 3 displays the final SEM analysis for examining the behavioral intention among green consumers in developing countries. The beta (β) coefficient quantifies the values between two latent variables and demonstrates the relationship of the direct effect; the greater the value, the stronger the effect's influence on the entire model [83]. With this, it could be observed that CPV had the greatest direct significance on PI (β = 0.852; *p*-value < 0.05), followed by AT on CPV (β = 0.631; *p*-value < 0.05), PENC on AT (β = 0.625; *p*-value < 0.05), PENC on PBC (β = 0.586; *p*-value < 0.05), PAS on PBC (β = 0.510; *p*-value < 0.05), PAS on SNs (β = 0.477; *p*-value < 0.05), PECC on AT (β = 0.472; *p*-value < 0.05), PENC on SNs (β = 0.321; *p*-value < 0.05), PAS on AT (β = 0.300; *p*-value < 0.05), PBC on CPV (β = 0.211; *p*-value < 0.05), and SNs on CPV (β = 0.200; *p*-value < 0.05). This shows the sequential direct impact influencing consumers to purchase green products.

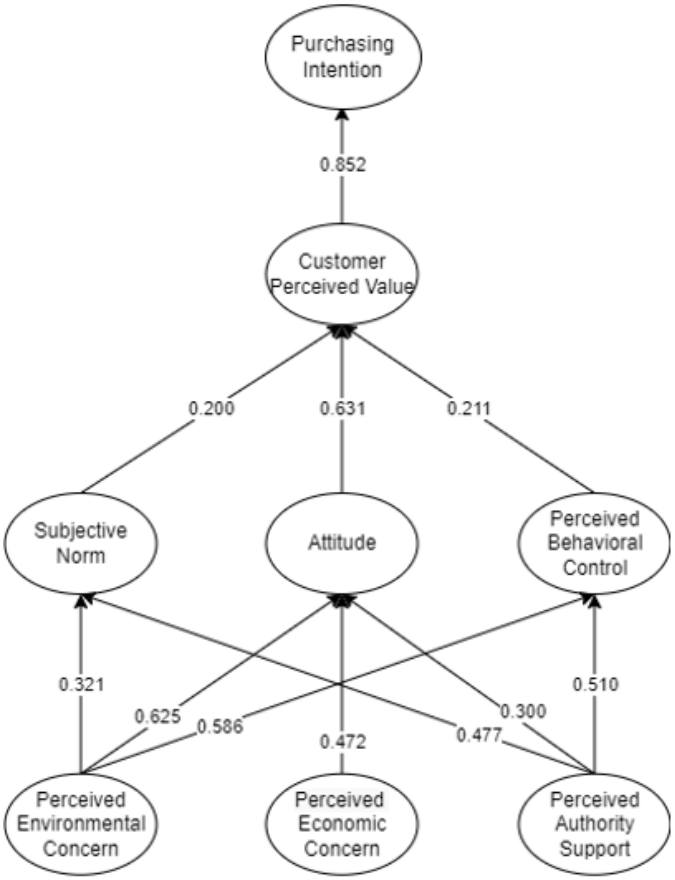

Figure 3. Final Model to Assess Green Behavioral Intention Among Filipinos.

As shown in Table 2, the descriptive statistic results of the various constructs employed in this study are presented. It is evident that all factor loadings were within or exceeded the 0.50 threshold set by Hair [84]; hence, no latent variables were removed in developing the final SEM model.

Hair [84] advised assessing the constructs' validity and reliability by computing the average variance extracted (AVE), Cronbach's alpha, and composite reliability (CR). The minimal level of validity necessary for the CR value and Cronbach's value is 0.7, whereas an ideal value should be higher than 0.4 when evaluating its validity using the AVE [79]. The study met the criteria, thus confirming the validity and acceptability of each construct in this model, as shown in Table 3.

The compliance of the model was evaluated using a variety of fit indices. The study by Gefen et al. [85] and Steiger [86] indicated that parameter estimates higher than the minimum cutoff of 0.80 for IFI, TLI, CFI, GFI, and AGFI are considered a good model fit. Based on Table 4, every model fit passed the cut-off, and RMSEA showed a value of 0.054, which is less than 0.07, proving that the theoretical model accurately represented the data.

Lastly, Table 5 presents the various path analyses examined from the final SEM. This study's causative relationship of each latent variable is displayed, inferring that all the relationships were significant, as seen from the results of the direct effect, indirect effect, and total effects having a *p*-value less than 0.05. This substantiates the acceptance of all stated hypotheses within the study. Moreover, it is evident that the connection with the most significant direct impact was the customer perceived value towards purchasing intention among the behavioral domains. In contrast, for the indirect effect, perceived environmental concern to customer perceived value had the highest value.

Table 2. Indicator Statistical Analysis.

Variable	Item	Mean	StD	Factor Loading	
				Initial	Final
Purchasing Intentions	PI1	4.0782	0.90454	0.842	0.843
	PI2	4.1240	0.88577	0.800	0.857
	PI3	4.1105	0.96208	0.797	0.823
	PI4	4.1402	0.93968	0.847	0.848
Customer Perceived Value	CPV1	3.8706	0.94123	0.726	0.727
	CPV2	4.0243	0.94552	0.789	0.791
	CPV3	4.1105	0.94507	0.800	0.807
	CPV4	3.9434	0.91506	0.797	0.799
	CPV5	4.1024	0.93304	0.777	0.779
Subjective Norm	SN1	3.4420	1.06986	0.749	0.748
	SN2	3.6819	1.06094	0.809	0.809
	SN3	3.7332	1.05598	0.858	0.858
	SN4	3.3423	1.16425	0.746	0.745
	SN5	3.3235	1.16617	0.768	0.768
Attitude	A1	3.9003	0.97995	0.595	0.595
	A2	4.0943	0.86945	0.820	0.820
	A3	4.2237	0.89205	0.833	0.807
	A4	4.1617	0.87657	0.850	0.850
	A5	4.0674	0.93189	0.772	0.772
Perceived Behavioral Control	PBC1	4.1132	0.89631	0.714	0.724
	PBC2	3.6550	1.00517	0.685	0.710
	PBC3	3.9704	0.88022	0.798	0.807
	PBC4	3.7951	0.94215	0.726	0.751
	PBC5	3.5121	1.10612	0.853	0.861
Perceived Environmental Concern	PENC1	4.2480	0.92880	0.845	0.846
	PENC2	4.0458	0.92447	0.895	0.895
	PENC3	4.2210	0.87900	0.924	0.924
	PENC4	4.1159	0.93000	0.915	0.915
	PENC5	3.9380	1.00212	0.754	0.754
Perceived Economic Concern	PECC1	4.1914	0.91447	0.870	0.871
	PECC2	4.1321	0.91611	0.895	0.895
	PECC3	4.0755	0.90328	0.841	0.842
	PECC4	4.1698	0.88882	0.916	0.916
	PECC5	4.0755	0.95844	0.840	0.840
Perceived Authority Support	PAS1	4.2776	0.93636	0.772	0.772
	PAS2	4.0323	0.89686	0.891	0.891
	PAS3	4.0782	0.89251	0.897	0.897
	PAS4	3.9434	0.95834	0.836	0.836

Table 3. Composite Reliability.

Factor	Cronbach's α	Average Variance Extracted (AVE)	Composite Reliability (CR)
Purchasing Intentions	0.938	0.710	0.907
Customer Perceived Value	0.934	0.610	0.886
Subjective Norm	0.909	0.619	0.890
Attitude	0.930	0.599	0.880
Perceived Behavioral Control	0.884	0.597	0.880
Perceived Environmental Concern	0.936	0.755	0.939
Perceived Economic Concern	0.941	0.763	0.941
Perceived Authority Support	0.910	0.723	0.921

Table 4. Model Fit Indices.

Goodness of Fit Measures	Parameter Estimates	Minimum Cutoff	Suggested by
Incremental Fit Index (IFI)	0.958	>0.80	Gefen et al. [85]
Tucker Lewis Index (TLI)	0.947	>0.80	Gefen et al. [85]
Comparative Fit Index (CFI)	0.957	>0.80	Gefen et al. [85]
Goodness of Fit Index (GFI)	0.869	>0.80	Gefen et al. [85]
Adjusted Goodness of Fit Index (AGFI)	0.825	>0.80	Gefen et al. [85]
Root Mean Square Error of Approximation (RMSEA)	0.054	<0.07	Steiger [86]

Table 5. Direct, Indirect, and Total Effects.

No	Variable	Direct Effect	*p*-Value	Indirect Effect	*p*-Value	Total Effect	*p*-Value
1	PAS→SN	0.510	0.009	-	-	0.510	0.009
2	PAS→AT	0.300	0.016	-	-	0.300	0.016
3	PAS→PBC	0.477	0.007	-	-	0.477	0.007
4	PENC→SN	0.586	0.016	-	-	0.586	0.016
5	PENC→AT	0.625	0.003	-	-	0.625	0.003
6	PENC→PBC	0.321	0.012	-	-	0.321	0.012
7	PECC→AT	0.472	0.008	-	-	0.472	0.008
8	PBC→CPV	0.211	0.012	-	-	0.211	0.012
9	AT→CPV	0.631	0.005	-	-	0.631	0.005
10	SN→CPV	0.200	0.019	-	-	0.200	0.019
11	CPV→PI	0.852	0.009	-	-	0.852	0.009
12	PAS→CPV	-	-	0.392	0.013	0.392	0.013
13	PAS→PI	-	-	0.334	0.014	0.334	0.014
14	PECC→CPV	-	-	0.298	0.004	0.298	0.004
15	PECC→PI	-	-	0.254	0.005	0.254	0.005
16	PENC→CPV	-	-	0.582	0.008	0.582	0.008
17	PENC→PI	-	-	0.496	0.005	0.496	0.005
18	PBC→ PI	-	-	0.180	0.013	0.180	0.013
19	AT→PI	-	-	0.538	0.006	0.538	0.006
20	SN→PI	-	-	0.171	0.018	0.171	0.018

5. Discussion

The global ramifications of the COVID-19 pandemic have exerted substantial impacts on sustainability, underlining the need for a comprehensive analysis of consumer behavioral intentions, particularly in developing nations. While research in developed countries predominates, it is crucial to recognize that the pandemic has posed more formidable challenges to sustainable development in developing countries. Therefore, it is vital to understand how people perceive and intend to engage in sustainable behaviors, as this understanding is critical for fostering sustainable practices in these regions. This study utilized an extended TPB with the sustainability domains called the sustainability theory of planned behavior aimed to holistically analyze the behavioral intention among green consumers in a developing country, specifically in the Philippines.

From the results, perceived economic concern was seen to be insignificant on subjective norms and perceived behavioral concern (both $p > 0.05$). This implies that concerns about economic factors, such as cost, had no impact on what people believed other people expected them to do or on their confidence in their ability to act in line with their intention to make green purchases. The findings are accurate with the study by Yang and Ahn [87] stating that economic value's influence on shaping subjective norms appears to be structurally constrained, suggesting that factors beyond financial considerations play a more significant role in determining social and personal perceptions related to sustainability. This suggests that individuals may draw on a range of motivations, beliefs, and social influences beyond economic considerations when making choices regarding sustainable purchases, emphasizing a complex interplay of factors in the realm of sustainable consumer behavior.

Moreover, subjective norms are impacted by growing environmental awareness, leading to a decrease in the perceived challenges related to the amount or cost [40]. Compared to countries such as that from Yue et al. [88], from China, people are concerned for their economic appraisals—price sensitive. However, positive effects were seen on behavior among Canadians in the study of Walker et al. [89]. This was because people were more sensitive on the value the sustainable products offered rather than its price and economic impact among individuals.

According to the results presented in Table 5, the customer's perceived value was identified as the construct with the most substantial direct influence on purchasing intention (β: 0.852, *p*-value = 0.009) because green products give consumers extra value, they are more sustainable than non-green alternatives, they are more concerned with the environment, its environmental performance satisfies their expectations, and they find its environmental benefits to be quite valuable. Consumers show stronger purchasing intention for products with higher perceived values [90], resulting in greater consumer trust in the items they have bought, serving as an indicator for their future buying decisions [91]. In terms of green products, consumers evaluate the environmental attributes and value associated with green brands, influencing their intention to purchase sustainably [92]. Furthermore, the perception of a brand's environmental friendliness positively impacts purchase intention, implying that a more robust perception of a brand's green value increases the likelihood of purchase—highlighting an interrelationship between perceived environmental value and the intention to make a green purchase [93]. Highlighted by the study of Valentin and Hechanova [94], the overall perspective of Filipinos in the current generation has shifted to these values, and environmental impacts are not the sole basis for green behavior. This is an interesting finding, as Filipinos have been typically associated to have more promotion of only environmental concerns.

It could also be observed that attitude was a direct significant factor affecting customer perceived value (β: 0.631, *p*-value = 0.005) and an indirect factor on purchasing intention (β: 0.538; *p*-value = 0.006). Forasmuch as consumers perceive sustainability as vital and hold a positive environmental attitude, they believe that green products are valuable, express interest in sustainable living, and find being a green consumer enjoyable, all collectively influencing purchasing intent. Fiandari et al. [95] indicate that attitudes are shaped by how people perceive the value of a product. As an illustration, consumers display a more positive outlook when considering the acquisition of energy-efficient appliances when they recognize a greater value in these products for conserving energy in the study of Zhang et al. [96]. This positive attitude is closely linked to perceived advantages, reinforcing the idea that consumers are inclined to purchase a product when they recognize its value in meeting their needs or preferences. Moreover, a positive correlation has been identified between consumers' attitudes and perceived value towards the product, thereby positively influencing the intention to buy organic food in Pakistani [55,97] and Brazilian consumers [98]. This justifies the indirect effect of this variable on purchasing intention.

Perceived environmental concern was discovered to exhibit a direct impact on subjective norms (β: 0.586; *p*-value = 0.016), attitude (β: 0.625; *p*-value = 0.003), and perceived behavioral control (β: 0.321; *p*-value = 0.012); however, it is an indirect factor affecting customer perceived value (β: 0.582; *p*-value = 0.008) and purchasing intention (β: 0.496; *p*-value = 0.005). This is attributed to consumers' willingness to buy environmentally friendly products, motivated by their environmental concerns, their heightened environmental consciousness shaping their purchasing decisions, and their strong emphasis on environmental preservation. Consequently, they would shift from purchasing products from companies that harm the environment and opting for green alternatives. This holds true, as explained by Ogiemwonyi et al. [99], that a consumer demonstrates increased environmental consciousness by refraining from products and services that could harm the environment significantly. Furthermore, environmental concern is highlighted as a significant factor influencing people's norms and attitudes, indirectly impacting individual green consumption behavior. Individuals assess their own capabilities and circumstances

concerning engaging in pro-environmental actions; hence, environmental concern can affect the intention toward sustainable consumption through perceived behavioral control [100]. Such findings are strengthened by prior research conducted by Paul et al. [40], Yadav and Pathak [101], Xu et al. [102], and Li et al. [63], revealing substantial and positive effects among these three factors on purchasing intention.

Perceived authority support has positively influenced subjective norms (β: 0.510; *p*-value = 0.009), attitude (β: 0.300; *p*-value = 0.016), and perceived behavioral control (β: 0.477; *p*-value = 0.007) and indirectly influenced customer perceived value (β: 0.392; *p*-value = 0.013) and purchasing intention (β: 0.334; *p*-value = 0.014). This is evident, as all the indicators substantially impact behavioral intention, with factor loadings exceeding 0.700; in particular, consumers believe that government agencies must act promptly and efficiently to combat climate change by promoting sustainable living. They have the choice of utilizing government-provided methods or exercising their freedom to participate in the environmental impact assessment (EIA), as allowed by laws that support citizens' involvement in the EIA process with government backing. A study by Wang et al. [103] indicates that residents' intentions to purchase were significantly influenced by external factors, particularly government laws and regulations promoting green consumption, purchase subsidies, preferential policies, and guidance from individuals in their social circles. In addition, Kaffashi and Shamsudin [104] highlighted that government influence can indirectly affect purchasing intention through perceived behavioral control. This is due to the regulations creating a situation that impacts an individual's sense of control. Since pro-environmental behavior is generally considered positive, the expectation is that government intervention should have a positive impact on PBC, as engaging in sustainable actions becomes easier when supported by regulations and infrastructure. Several studies back these conclusions regarding the significance of support from authoritative sources in boosting purchasing intentions [82,105,106]. Compared to other countries, the Philippines has been one among the last to practice sustainability.

Perceived economic concern has a direct effect towards attitude (β: 0.472; *p*-value = 0.008) and an indirect effect towards customer perceived value (β: 0.298; *p*-value = 0.004) and purchasing intention (β: 0.254; *p*-value = 0.005). The rationale is that they are inclined to embrace a sustainable way of life if green products are cheaper than conventional ones. They value fair pricing for green products while maintaining a satisfactory quality standard. Additionally, their consumption of green products would be influenced by an increase in income or higher earnings, and they would readily switch to purchasing green products if the cost is on par with their preferred brands, emphasizing their strong consideration for price when choosing sustainability. Joshi and Rahman's [107] review identified that significant obstacles to consumers adopting green purchase behavior included high pricing and inconveniences in the purchasing process. This is because customers typically prefer affordable eco-friendly products and prioritize price over green features, as they are not yet ready to prioritize the environment over their satisfaction and well-being [108]. Hence, if the product surpasses their price expectations, it will dilute the influence of their positive attitude and widen the affordability gap for green products. To explain, consumers might not translate their positive attitude into actual behaviors due to the perceived high cost associated with green consumption. Consumers are evidently price-sensitive and consider product pricing as a significant factor in purchasing intention [109].

Perceived behavioral control significantly influenced customer perceived value (β: 0.211; *p*-value = 0.012) and exerted an indirect influence on purchasing intention (β: 0.180; *p*-value = 0.013). Consumers possess the necessary resources, time, and opportunities to opt for sustainable products, reflecting their capability to make informed decisions aligned with their personal sustainability goals and influence sustainable living in their capacity, indicating a sense of empowerment in contributing to a more eco-conscious lifestyle. It was discussed by Johe and Bhullar [110] that when individuals experience a heightened sense of control, they are more inclined to invest additional effort to effectively engage in a specific behavior, such as making a purchase, especially when they perceive a more

excellent value in the product. Moreover, individuals with high PBC believe they possess greater resources and opportunities when making decisions, which is linked to a greater likelihood of intending to purchase sustainable products and services [111,112]. Contrarily, Witek and Kuzniar [113] stated that the restricted financial capabilities of buyers intensify the impact of elevated prices, whereas affluent consumers can comfortably accommodate higher expenses for these products. This proves that perceived behavioral control strongly influences purchasing intention, which is supported by various studies in organic food [114] and green skincare products [35].

Lastly, it could be observed that subjective norms have a direct significant effect on customer perceived value (β: 0.200, *p*-value = 0.019) and an indirect effect on purchasing intention (β: 0.171, *p*-value = 0.018). Consumers believe that the perceptions and attitudes of individuals important to them significantly influence their consideration of the environment when making decisions; the value placed on sustainability within their social circle strongly impacts their own beliefs and behaviors. They are aware of many people in their immediate environment who actively use sustainable products, and the viewpoints and anticipations of friends and family exert a significant influence, thus reinforcing their inclination towards purchasing green products, highlighting the substantial impact of social factors on their purchasing decisions related to sustainability. In essence, individuals are influenced by the viewpoints of their social circle, affecting how they assess the value and advantages of opting for sustainable products. This was evident in a study of Roh et al. [55], where an individual's purchase of a green product was a strong motivator for others within the same community to make similar purchases. Consumers are influenced by significant others (e.g., family, friends, colleagues) when making consumption choices [100], as they contribute information that leads to positive intention [115]. In organic food purchases, empirical research has shown that purchasing intentions are shaped within social networks and are influenced by social norms [116,117]. These establish the indirect link presented.

Overall, the current study showed that consumers have aimed to purchase sustainable products in the future if given the option, if it is available, and for ecological reasons. Joshi and Rahman [107] indicated that the availability of green products is essential for green purchases to occur. Consumers typically prefer readily accessible products and are averse to investing a significant amount of time searching for green options [118]. Smith and Brisman [119] explained that the generalized action being considered is yet to be evident in the current generation. Considering these findings, marketers should focus on developing practical advertising efforts highlighting green products' ecological advantages. Highlighting these products' positive impact on the environment can sway consumer preferences and solidify their intent to choose sustainability. Additionally, promoting accessibility and making green products available in the market can further encourage consumers to opt for sustainable alternatives actively.

5.1. Theoretical Implications

The TPB has long stood as a prominent framework for understanding individual behaviors, yet augmentation has allowed for greater potential to be realized. The necessity for new constructs to comprehensively explain motivational factors driving behaviors has led researchers to extend and enrich the TPB model. Thus, the study has developed a new theory called the STPB, which integrates the sustainability domains. The incorporation of perceived environmental concern, perceived economic concern, and perceived authority support into subjective norms, perceived behavioral control, and attitude, alongside the addition of customer perceived value and purchasing intention, enriches the theoretical foundation and offers a more nuanced understanding of behavioral intentions, particularly within the context of sustainability. Moreover, this study's theoretical implications underscore the validation of integrating these new constructs into the TPB, enhancing the model's predictive power in assessing behavioral intentions related to purchasing green products. The model's applicability allow for its potential use for broader applications in sustainability research. Researchers can also leverage this framework, incorporating and

modifying constructs such as cultural factors, technological advancements, and emotional appeals based on specific research objectives. This expansion is pivotal in ensuring that the theoretical framework continues to evolve and accurately capture the complexity and dynamics of human behavior within the sustainability spectrum.

5.2. Practical and Managerial Implications

The present research discovered that heightened customer perception of value in green products directly influences a greater intent to purchase. From a managerial perspective, companies can invest resources in research and development to consistently enhance the sustainability and value of their product offerings. This may encompass innovative approaches, such as eco-friendly packaging (e.g., biodegradable materials such as cornstarch-based packaging or compostable paper, recyclable materials, and other ways of reusable packaging), the exploration of sustainable materials that are cheaper and more readily available, and refining production methods to reduce environmental footprints. In Taiwan and Mongolia, companies incorporating eco-friendly innovations into production processes and products succeed in satisfying environmentally conscious customers, boosting marketing, as indicated by Moslehpour et al.'s [120] study showing an interrelationship between eco-innovation and green purchase intent.

In addition, green products should aim to deliver performance levels equivalent to or better than conventional alternatives. This can also be achieved by focusing on the product's functional attributes and durability, whereby businesses can ensure that their green offerings stand the test of time, providing lasting benefits and reducing the need for frequent replacements, thus appealing to customers seeking long-term value. By consistently demonstrating a commitment to sustainability and quality, companies can build a loyal customer base that sees high value in their green product offerings, thereby resulting in heightened sales and a meaningful contribution to a sustainable future. Furthermore, companies need to assess how various social media platforms can effectively promote green products and connect with their desired audience. A research study by Pop et al. [121] recommended that posts by celebrities and influencers, content shared by friends and family, and reviews are valuable tools for generating awareness and fostering favorable attitudes toward environmentally friendly brands.

In the Philippines, platforms such as Facebook, Instagram, and Twitter can be harnessed to raise awareness about green products. They can also leverage influencer partnerships to endorse green products and share personal experiences authentically. Additionally, engaging in meaningful conversations with users by responding to queries, sharing informative articles, and conducting eco-conscious campaigns can foster a sense of community and encourage environmentally responsible consumer behavior. Lastly, policymakers can advocate for sustainable lifestyles by enacting policies incentivizing eco-friendly behaviors. For instance, they can provide benefits such as tax incentives or subsidies to companies embracing sustainability and enforce guidelines compelling them to curtail their ecological footprint, such as setting emission standards and targets for waste reduction [122].

This responsibility compels businesses to take accountability for their ecological effects and encourages adopting sustainable practices. With this, government intervention can bolster the sales and advancement of green products [123]. Policymakers can also collaborate with diverse stakeholders (i.e., non-governmental organizations (NGOs) and private businesses), including environmental advocates, to formulate public policies and environmental goals to address critical environmental challenges, ensuring these policies' effectiveness and widespread acceptance.

5.3. Limitations

The findings from this study have offered valuable perspectives on comprehending consumer behavioral intentions in the Philippines toward green products. Nevertheless, it is important to acknowledge certain limitations. To begin with, the current study centered on a behavioral intention analysis among green consumers in the Philippines, which

may influence the findings and limit the generalizability to other developing countries with varying contexts, cultures, and economic conditions. Furthermore, the research only considered a specific set of sustainability domains within the STPB. Sustainability is a multidimensional concept, and it is essential to recognize that different topics regarding sustainability might require the inclusion of additional constructs. The last limitation concern is the reliance on structural equation modeling (SEM) as the sole analytical method. Even though SEM is a commonly employed multivariate analytical technique, particularly for human factors, it often results in latent variables that yield weak or insignificant latent variables due to potential indirect effects when measuring the dependent variable [124,125]. Future studies could consider employing machine learning or a combination of approaches for a more comprehensive and accurate analysis.

6. Conclusions

With the emergence of the COVID-19 pandemic, sustainability concerns have gained prominence, particularly in developing countries. This global awareness underscores the need to understand consumer behavior toward green products. While previous research has focused mainly on developed countries, the pandemic has posed significant sustainability challenges in developing nations. Therefore, it is essential to comprehend how people in these regions perceive undertaking and intend to undertake green behaviors. This study, conducted in the Philippines, utilized the STPB to assess behavioral intention among green consumers. The study employed convenience sampling, involving 500 participants who answered 54 adapted online survey questions. The research concurrently investigated various STPB constructs, including perceived environmental concern, perceived economic concern, perceived authority support, subjective norm, attitude, perceived behavioral control, customer perceived value, and purchasing intention, using structural equation modeling (SEM).

Customer perceived value emerged as the most influential factor directly impacting purchasing intent, while perceived economic concern showed no significant impact on SNs and PBC. Notably, the study validated integrating new constructs into the STPB, enhancing its predictive power. It provides future researchers with a valuable model for analyzing sustainability-related topics and can guide policymakers, marketers, and companies in promoting sustainable practices and products. Companies are encouraged to invest in research and development to upgrade the value of their goods, with a focus on durability and functional attributes and performance equivalent to or better than conventional alternatives. Policymakers can advocate for sustainable living through incentives and regulations encouraging eco-friendly practices, whereas marketers can explore social media platforms for effective green product promotion. By opting for sustainable products, reducing and stopping environmental problems is possible. When willing to endorse and embrace responsible consumption, consumers can make a substantial and conscientious contribution to the environment.

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