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Perceived Greenwashing and Sustainable Consumer Behavior: Evidence from Generation Z in Vietnam

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KEYWORDS

Brand trust, Generation Z, greenwashing, sustainable purchase intention, attitude.

ABSTRACT

This study investigates the influence of perceived greenwashing (PG) on sustainable consumer behaviour among Generation Z in Vietnam, focusing on the mediating roles of brand trust (BT), attitude toward green products (ATT), and sustainable purchase intention (SPI). The objective is to clarify how deceptive environmental claims affect both psychological and behavioural outcomes in sustainable consumption. Data were collected through a structured questionnaire survey distributed online and offline using purposive sampling, targeting consumers familiar with eco-friendly products. A total of 302 valid responses were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS 3. The results reveal that PG has significant negative effects on BT and ATT, while BT and ATT positively influence SPI, which in turn drives sustainable purchase behaviour (SPB). Moreover, BT and ATT mediate the indirect effects of PG on SPI and SPB, highlighting the critical role of trust and attitudes in converting environmental perceptions into action. The study contributes theoretically by drawing on the attitude of the Theory of Planned Behavior and integrating perceived greenwashing and brand trust to explain sustainable purchase intention and behavior. Practically, it provides guidance for enhancing transparency, credibility, and consumer trust in sustainability communication.

1. Introduction

The increasing urgency of addressing climate change, environmental degradation, and resource depletion has intensified global attention on sustainable consumption practices. Businesses have responded by adopting green marketing strategies to appeal to environmentally conscious consumers, particularly younger generations such as Generation Z, who are often portrayed as values-driven, socially aware, and motivated to make sustainable purchase decisions. However, the proliferation of greenwashing, misleading or unsubstantiated claims about the environmental benefits of products or corporate practices has emerged as a critical challenge. Greenwashing not only risks eroding consumer trust but also threatens the credibility of legitimate sustainability efforts, creating barriers between environmental awareness and actual sustainable purchasing behaviour (Nyilasy et al., 2014; Di Pillo et al., 2025).

Existing literature has provided substantial evidence on the adverse effects of greenwashing on

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consumer perceptions, trust, and purchase intentions, particularly among younger consumers who are highly responsive to sustainability discourse. For instance, Chang and Yoo (2025) explored how greenwashing influences green word-of-mouth intention and green trust, while Shi and Omar (2024) expanded this line of inquiry by introducing the construct of perceived betrayal to explain consumers' emotional responses to deceptive environmental claims. Similarly, Sun and Shi (2022) demonstrated that environmental responsibility mediates the relationship between greenwashing perceptions and green purchase intention. Despite these valuable contributions, limited research has investigated how greenwashing shapes the progression from sustainable consumption awareness to actual purchasing behaviour - an important gap, especially in emerging markets such as Vietnam, where the green economy remains in its formative stage. More specifically, few empirical studies have systematically examined the psychological mechanisms through which greenwashing influences sustainable purchase intention using robust analytical techniques like Structural Equation Modelling (SEM). Addressing this gap is crucial, as SEM enables simultaneous testing of complex causal pathways among latent constructs such as perceived greenwashing, brand trust, attitude toward green products, and purchase intentions, thereby offering more nuanced insights into the drivers of sustainable consumption.

The present study aims to address this gap by developing and empirically testing a conceptual model that examines the influence of perceived greenwashing on sustainable purchase intention among Vietnamese Gen Z consumers. Specifically, the study investigates how greenwashing affects brand trust and attitudes toward green products, and how these factors mediate the relationship between environmental awareness and sustainable purchase intention. Data collection was conducted through a large-scale consumer survey, and the proposed relationships were be analyzed using PLS-SEM to ensure methodological rigor and robustness. In general, this research aims to solve the following research question (RQ):

RQ: How does perceived greenwashing influence the sustainable purchase intention and behaviour of Generation Z consumers in Vietnam through the mediating roles of brand trust and attitude toward green products?

The findings of this research are expected to contribute to the theoretical understanding of the role of greenwashing in sustainable consumption behaviour, particularly in transitional markets. By clarifying the psychological mechanisms that connect consumers' perceptions of greenwashing to their sustainable purchase intentions, this study makes both theoretical and practical contributions. Theoretically, it extends the Theory of Planned Behavior (Ajzen, 1991) by integrating perceived greenwashing as an external antecedent that shapes attitudes and trust—two key psychological determinants of intention and behaviour. This integration provides a more comprehensive understanding of how deceptive or ambiguous sustainability claims disrupt the attitudinal and trust-building processes that underlie pro-environmental decision-making. Moreover, the study advances the literature on green consumer psychology by empirically validating the mediating roles of brand trust and attitude toward green products in explaining how perceptions of authenticity influence sustainable purchasing pathways. Practically, these insights offer valuable guidance for marketers and policymakers seeking to design communication strategies and regulatory frameworks that foster transparency, protect consumer trust, and strengthen genuine sustainability engagement. For businesses, the results will inform the design of transparent, credible green marketing strategies that strengthen consumer trust and encourage sustainable purchasing behaviour. For policymakers, the findings can guide the development of stricter regulations and certification systems to curb greenwashing practices, thereby fostering a more transparent and trustworthy green market in Vietnam.

2. Literature review

2.1. Research background

Greenwashing, broadly defined as the dissemination of misleading or exaggerated environmental claims, has been increasingly scrutinized in the marketing and consumer behaviour literature. Nyilasy et al. (2014) conceptualize greenwashing as a communication strategy that often creates dissonance between a company's sustainability image and its actual environmental performance, thereby undermining consumer trust. When consumers perceive incongruence in green claims, they develop scepticism toward the brand, which negatively affects their evaluation and behavioural intentions.

Building on this, Di Pillo et al. (2025) emphasize that greenwashing is particularly relevant to Generation Z consumers, who display both heightened environmental awareness and sensitivity to deceptive marketing practices. Their findings indicate that perceived greenwashing significantly weakens the psychological mechanisms that drive sustainable purchase intention, particularly through its adverse effects on brand trust and consumer attitudes toward green products. Trust, as identified by Nyilasy et al. (2014), serves as a critical mediator between marketing communications and consumer behaviour, while attitude is central in shaping the intention-behaviour link within the Theory of Planned Behavior framework. It is important to distinguish between greenwashing, which refers to firms' strategic

communication practices, and perceived greenwashing, which captures consumers' subjective evaluations of the credibility and sincerity of those environmental claims (Di Pillo et al., 2025).

The cumulative insights from these studies suggest a conceptual model in which perceived greenwashing has both direct and indirect effects on sustainable purchase intention. Specifically, it erodes brand trust and weakens positive attitudes toward green products, both of which are key antecedents of sustainable consumption behaviours.

2.2. Theoretical background

The hypotheses proposed in this study are informed by two complementary theoretical perspectives: the Theory of Planned Behavior (TPB) and a trust-based perspective in green marketing communication. TPB, as articulated by Ajzen (1991), explains behaviour as a function of behavioural intention, with attitudes representing a core psychological antecedent of intention. Rather than adopting the full TPB framework, this study draws specifically on its attitudinal pathway, which has been widely recognized as a primary driver of purchase intention in sustainable consumption contexts. In this regard, attitudes toward green products capture consumers' overall evaluations of environmentally friendly offerings, while sustainable purchase intention serves as the most proximal predictor of actual purchase behaviour.

Building on this foundation, recent research has emphasized the importance of contextual and perceptual factors that can disrupt this attitudinal–intentional process. Di Pillo et al. (2025), for example, demonstrate that perceived greenwashing functions as an external antecedent that undermines consumers' positive evaluations of green products by eroding trust and increasing scepticism. When environmental claims are perceived as misleading, consumers are less likely to develop favourable attitudes, which subsequently weakens their purchase intentions and sustainable behaviours. Accordingly, TPB provides a useful theoretical baseline for explaining the sequential relationships among attitudes, purchase intention, and behaviour, while the integration of perceived greenwashing and brand trust allows the model to more accurately capture the psychological mechanisms shaping sustainable consumption decisions in contemporary green markets.

In addition to TPB, the current research draws on the trust-based perspective in green advertising and communication credibility theory, as articulated by Nyilasy et al. (2014). According to this view, brand trust is a central mechanism linking marketing communications to consumer evaluations and behavioural responses. Nyilasy et al. (2014) show that when consumers encounter misleading or exaggerated environmental claims, they experience heightened scepticism, which erodes brand trust and reduces their likelihood of engaging in positive behavioural outcomes, such as purchasing green products. This aligns with relationship marketing theory, which underscores trust as a key determinant of consumer loyalty and purchase intention (Shi & Omar, 2024). Accordingly, perceived greenwashing is expected to negatively affect brand trust, while brand trust itself is predicted to exert positive effects on both attitudes toward green products and sustainable purchase intentions (Hameed et al., 2021).

By integrating these two perspectives, this study conceptualizes a model (Figure 1) in which perceived greenwashing exerts both direct and indirect effects on sustainable purchase intention and behaviour. Perceived greenwashing undermines brand trust and weakens positive consumer attitudes, thereby disrupting the attitudinal and intentional pathways proposed by TPB. At the same time, trust functions as a mediating mechanism that channels the effects of greenwashing on subsequent evaluations and behaviours. This dual-theoretical foundation provides a robust rationale for the hypotheses of this study, which posit that perceived greenwashing reduces brand trust and positive attitudes, while brand trust and attitudes serve as key enablers of sustainable purchase intention and behaviour (Nyilasy et al., 2014; Di Pillo et al., 2025).

2.3. Hypothesis development

2.3.1. Brand Trust

Brand trust reflects consumers' willingness to rely on a company's claims and commitments (Chen, 2010). In sustainability contexts, this trust is fragile because environmental claims are often unverifiable by consumers. Greenwashing—defined as deceptive or exaggerated communication about environmental practices—erodes trust by creating perceptions of dishonesty (Nyilasy et al., 2014). When consumers suspect that environmental claims are insincere, they interpret the firm as opportunistic, which diminishes credibility and loyalty (Tarabieh, 2021). This is especially evident among Generation Z, who are sensitive to corporate authenticity in sustainability communication (Di Pillo et al., 2025). Once trust is damaged, it becomes difficult for companies to rebuild consumer confidence in their brand promises. Therefore, we propose:

H1: Perceived greenwashing negatively influences brand trust.

2.3.2. Attitudes Toward Green Products

Consumer attitudes toward green products depend heavily on perceptions of claim validity. If consumers

perceive greenwashing, they may feel deceived and develop negative attitudes toward not only the firm but also toward green products (Tarabieh, 2021). This scepticism can reduce their willingness to support sustainable consumption (Nyilasy et al., 2014). Empirical findings by Di Pillo et al. (2025) show that misleading claims dilute positive perceptions of green products, particularly among Gen Z consumers. Similarly, Leonidou and Skarmeas (2017) emphasize that green scepticism arising from deceptive claims leads to unfavourable evaluations of eco-friendly offerings. As a result, greenwashing undermines the psychological foundation upon which positive consumer attitudes are built. Thus, the following hypothesis is advanced:

H2: Perceived greenwashing negatively influences attitudes toward green products.

H3: Perceived greenwashing negatively influences sustainable purchase intention.

2.3.3. Brand Trust and Attitudes Toward Green Products

Brand trust serves as a cognitive shortcut, reducing uncertainty in markets where product features are complex or unverifiable (Chen, 2010). When consumers trust a brand's environmental commitments, they are more likely to view its products positively (Tarabieh, 2021). Empirical studies confirm that green trust strengthens consumer attitudes toward sustainable offerings by enhancing perceptions of authenticity and reliability (Di Pillo et al., 2025). Papista and Krystallis (2013) further argue that consumer perceptions of green value are translated into favourable attitudes through trust mechanisms. Therefore, building trust not only protects firms from accusations of opportunism but also positively shapes consumer attitudes toward green products. Accordingly:

H4: Brand trust positively influences attitudes toward green products.

2.3.4. Brand Trust and Sustainable Purchase Intention

Trust is a central determinant of behavioural intentions in sustainability research. When consumers perceive a brand as trustworthy, they are more willing to act upon their positive evaluations by forming intentions to buy (Rahbar & Wahid, 2011). Green trust reduces perceived risks, thereby increasing the likelihood of committing to sustainable purchases. Di Pillo et al. (2025) emphasize that Gen Z's purchase intentions are strongly linked to their assessment of brand credibility and transparency. Tarabieh (2021) also demonstrated that trust functions as a mediator that translates corporate credibility into stronger purchase intentions. In short, trust serves as the bridge between consumer beliefs about brand honesty and their motivation to act on these beliefs. Therefore:

H5: Brand trust positively influences sustainable purchase intention.

2.3.5. Attitudes Toward Green Products and Sustainable Purchase Intention

According to the theory of planned behaviour, positive attitudes toward products are strong predictors of intentions (Ajzen, 1991, as cited in Tarabieh, 2021). In the green marketing context, consumers who believe that eco-friendly products are beneficial to the environment and align with their values are more likely to express purchase intentions. Di Pillo et al. (2025) confirm that Gen Z consumers' positive attitudes significantly enhance their willingness to buy sustainable products. Similarly, Papista and Krystallis (2013) argue that positive evaluations of product value directly translate into higher green purchase intentions. Thus, attitudes function as a motivational force that channels positive evaluations into future-oriented intentions. Hence:

H6: Attitudes toward green products positively influence sustainable purchase intention.

2.3.6. Sustainable Purchase Intention and Sustainable Purchase Behavior

Sustainable purchase intention (SPI) refers to consumers' willingness or likelihood to buy environmentally friendly and socially responsible products, often viewed as the most immediate predictor of behaviour within the Theory of Planned Behavior (Ajzen, 1991). Prior studies demonstrate that SPI is strongly shaped by brand trust, authenticity, and positive attitudes toward green products (Di Pillo et al., 2025; Papista & Krystallis, 2013). For example, eco-labels and credible marketing cues have been shown to enhance SPI by signalling product reliability (Rahbar & Wahid, 2011), while misleading claims or greenwashing practices can weaken it by fostering confusion and scepticism (Tarabieh, 2021). Sustainable purchase behaviour (SPB), on the other hand, represents the actual act of buying green products, such as choosing biodegradable items or supporting firms with sustainable supply chains. Although researchers note the intention–behaviour gap (Carrington et al., 2010), empirical evidence confirms that SPI remains a strong predictor of SPB when situational barriers (e.g., price, availability) are minimized (Rahbar & Wahid, 2011). For younger consumers, particularly Gen Z, stated willingness to adopt green products often translates into actual purchasing, provided that trust and credibility are present (Di Pillo et al., 2025). Together, SPI and SPB capture the motivational and behavioural dimensions of sustainable consumption, linking psychological readiness with real-world

environmental action. Therefore, the following hypothesis was proposed:

H7: Sustainable purchase intention positively influences sustainable purchase behaviour.

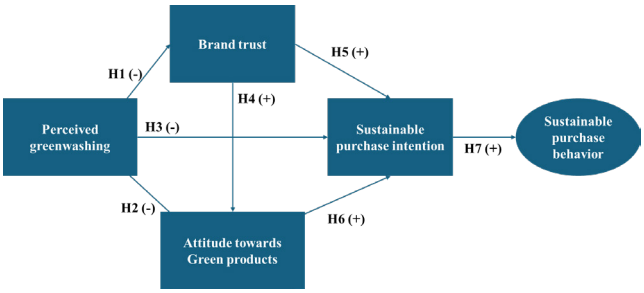

Figure 1. Research model

3. Methodology

This study adopts a quantitative research design to empirically examine the relationships among perceived greenwashing, brand trust, attitude toward green products, sustainable purchase intention, and sustainable purchase behaviour. A structured questionnaire survey was employed to collect primary data from Generation Z consumers in Vietnam. The study utilizes PLS-SEM to test the proposed conceptual model, as this approach is well suited for analyzing complex relationships among latent constructs and does not require strict assumptions about data normality. The following subsections describe the measurement scales, sampling strategy, data collection procedure, and data analysis techniques in detail.

3.1. Measurement

All constructs were measured using multi-item scales adapted from established studies in green marketing and consumer behaviour research to ensure validity and reliability (see Table 1). Each item was measured on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The reliability assessment results indicate that all constructs demonstrate strong internal consistency and convergent validity. As shown in Table 1, the Cronbach's alpha (α) values range from 0.811 to 0.876, exceeding the acceptable threshold of 0.70 (Hair et al., 2017). Similarly, the composite reliability (CR) values, which range between 0.876 and 0.910, confirm high construct reliability. The rho_A coefficients also fall within acceptable levels, supporting internal consistency across measurement items. Furthermore, the average variance extracted (AVE) values for all constructs are above 0.50, ranging from 0.586 to 0.669, indicating that more than 50% of the variance in the indicators is explained by the latent variables. These results collectively confirm that all constructs—PG, BT, ATT, SPI, and SPB—meet the reliability and convergent validity requirements for inclusion in the structural model.

3.2. Sampling and sample size

The study employed a non-probability purposive sampling strategy, targeting consumers with prior experience or interest in environmentally friendly products. This approach was chosen because the research objectives focus specifically on perceptions of greenwashing, trust, and sustainable consumption, which are most relevant to individuals who are at least familiar with green products (Di Pillo et al., 2025; Tarabieh, 2021). Unlike probability sampling, where every member of the population has a known chance of selection, purposive sampling allows researchers to deliberately select participants who meet predefined criteria (Hair et al., 2017). In this case, the study focused on consumers who have prior experience with, or at least awareness of, environmentally friendly products. This criterion was essential because perceptions of greenwashing, trust, and sustainable consumption can only be meaningfully assessed among respondents familiar with sustainability-related claims and products (Di Pillo et al., 2025).

Purposive sampling has been widely used in green marketing and greenwashing studies where access to a complete sampling frame is difficult, and the research requires respondents with specific knowledge or behaviours (Tarabieh, 2021). For example, participants in this study were screened with a filter question to ensure they had either purchased or considered purchasing green products in the past six months. This ensured that responses reflected the perspectives of consumers who could evaluate the constructs under investigation, thereby improving the relevance and accuracy of the findings.

Data were collected through both online and offline surveys. Online surveys were distributed via social media platforms and email invitations, while offline surveys were administered at universities, shopping centers, and community events to capture a diverse sample of potential green consumers. Respondents were screened with an initial filter question asking whether they had purchased or considered purchasing environmentally friendly products in the past six months. This ensured relevance and alignment with the study's constructs.

A total of 327 responses were gathered, and after data cleaning (removing incomplete or inconsistent cases), 302 valid responses remained for analysis. The sample size exceeded the recommended thresholds for PLS-SEM, following the "10-times rule" and power analysis recommendations (Hair et al., 2017). The final sample consisted primarily of Gen Z consumers, reflecting the demographic most actively engaged with sustainability issues (Di Pillo et al., 2025).

Table 1. Measurement model

Construct	Measurement Items	Manifest variable	Outer loadings	Cronbach's alpha (α)	rho_A	CR value	AVE
Perceived greenwashing	The environmental features are misrepresented through misleading wording.	PG1	0.786	0.824	0.831	0.876	0.586
	The environmental features are distorted through visuals or graphics.	PG2	0.753				
	The green claim is ambiguous or lacks proper verification.	PG3	0.794				
	The environmental functionalities are overstated or inaccurately described.	PG4	0.748				
	Important information about environmental features is omitted or hidden, making the claim sound better than it actually is.	PG5	0.746				
Brand trust	The environmental commitments are, I believe, reasonably reliable.	BT1	0.793	0.876	0.877	0.910	0.669
	The environmental performance is usually dependable, in my view.	BT2	0.833				
	I assume that the environmental claims are typically trustworthy.	BT3	0.814				
	The environmental concern expressed meets my expectations.	BT4	0.833				
	The environmental protection promises and obligations are fulfilled.	BT5	0.817				
Attitude towards green products	I have a favorable attitude toward purchasing green versions of products.	ATT1	0.804	0.847	0.848	0.891	0.620
	I am willing to buy products that are made from recycled or reused materials.	ATT2	0.806				
	I am willing to purchase biodegradable products, even from less well-known companies.	ATT3	0.774				
	I believe that choosing environmentally friendly products is a positive and worthwhile action.	ATT4	0.764				
	I feel good about supporting companies that produce sustainable or eco-friendly products.	ATT5	0.787				
Sustainable purchase intention	I intend to choose green products because they are expected to be less harmful to the environment in the future.	SPI1	0.802	0.833	0.834	0.889	0.667
	I am willing to switch to eco-friendly products for health and safety reasons.	SPI2	0.803				
	I plan to purchase environmentally friendly products in the near future.	SPI3	0.829				
	I would also consider buying green products as gifts or for other people.	SPI4	0.832				
Sustainable purchase behaviour	I regularly purchase products that are certified as environmentally friendly or sustainable.	SPB2	0.746	0.811	0.816	0.876	0.638
	I actively choose products with eco-friendly packaging or minimal packaging.	SPB3	0.824				
	I often replace conventional products with green alternatives when available.	SPB4	0.810				
	I make an effort to support companies that demonstrate environmental responsibility through my purchases.	SPB5	0.777				

3.3. Data analysis techniques

The data were analyzed using PLS-SEM with the software SmartPLS 3. The analytical procedure consisted of two main stages. First, the measurement model was evaluated to assess reliability (Cronbach's Alpha, Composite Reliability), convergent validity (Average Variance Extracted – AVE, outer loadings), and discriminant validity (Fornell–Larcker criterion). Second, the structural model was estimated to test the proposed hypotheses, analyze direct and indirect effects among constructs, and determine the explanatory power (R^2) of the endogenous variables. In addition, supplementary indices such as path coefficients, effect sizes (f^2), and predictive relevance (Q^2) were examined to provide a comprehensive evaluation of the model.

The choice of PLS-SEM is justified by its

advantages over covariance-based SEM (CB-SEM). Specifically, PLS-SEM is suitable for data that deviate from normal distribution, can be applied with small- to medium-sized samples, and is particularly effective for analyzing complex causal models with multiple latent constructs (Hair et al., 2017). These features make PLS-SEM the most appropriate method for testing the research model on greenwashing, brand trust, and sustainable consumer behaviour in this study.

4. Results and discussion

4.1. Discriminant validity

Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) ratio (Table 2). The results indicate that the majority of HTMT values are below the recommended threshold of 0.85, supporting adequate discriminant validity across most construct pairs. One HTMT value, observed between BT and SPI, slightly exceeds the threshold at 0.884.

Table 2. Heterotrait–Monotrait ratio

	ATT	BT	PG	SPB	SPI
ATT					
BT	0.769				
PG	0.319	0.134			
SPB	0.711	0.727	0.061		
SPI	0.748	0.884	0.130	0.675	

To provide complementary evidence, the Fornell–Larcker criterion was also examined (Table 3). The square roots of the AVE for all constructs exceed their corresponding inter-construct correlations, indicating that each construct captures more variance from its own indicators than from other constructs. This finding provides additional support for the discriminant validity of the measurement model. Taken together, the HTMT and Fornell–Larcker results suggest that discriminant validity is acceptable for subsequent structural model analysis.

Table 3. Fornell-Larcker Criterion

	ATT	BT	PG	SPB	SPI
ATT	0.787				
BT	0.665	0.818			
PG	-0.271	-0.116	0.766		
SPB	0.59	0.616	0.025	0.799	
SPI	0.631	0.757	-0.107	0.558	0.817

4.2. Common method bias (CMB)

To evaluate the potential influence of common method bias, Harman's single-factor approach was applied using an unrotated principal component analysis that included all observed items (Table 4). The results indicate that the largest component explains 37.754% of the total variance, which falls well below the 50% benchmark commonly used to signal problematic common method variance (Hair et al., 2017). In addition, the emergence of several components with eigenvalues exceeding one suggests that the variance in the data is distributed across multiple latent dimensions rather than concentrated in a single factor. Taken together, these results provide reasonable confidence that common method bias is unlikely to materially affect the study's findings.

4.3. Path model

The results in Table 5 and Figure 2 reveal several significant relationships that support most of the proposed hypotheses. Among the direct effects, BT demonstrates a strong positive influence on ATT ($\beta = 0.643$, $p < 0.001$) and on SPI ($\beta = 0.603$, $p < 0.001$). These findings indicate that consumers who trust environmentally responsible brands tend to develop more favourable attitudes toward green products and are more likely to form purchase intentions aligned

Table 4. Harman's single factor test result for CMB diagnostics

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.061	37.754	37.754	9.061	37.754	37.754
2	3.066	12.775	50.529			
3	1.414	5.891	56.420			
4	1.032	4.300	60.720			
5	.849	3.540	64.260			
Extraction Method: Principal Component Analysis.						

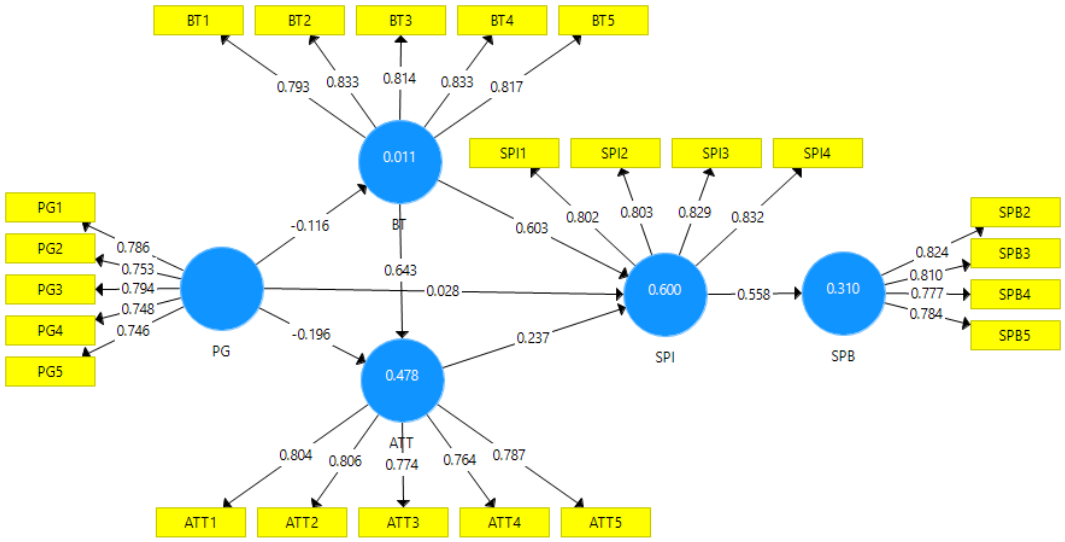

Figure 2. Path diagram (PLS algorithm diagram)

Table 5. Hypothesis testing

Hypothesis	Paths	Coefficients		Standard Deviation	T Statistics	P Values
		Original sample	Sample mean			
	Direct effects					
H1	PG -> BT	-0.116	-0.121	0.053	2.176	0.030
H2	PG -> ATT	-0.196	-0.2	0.037	5.225	0.000
H3	PG -> SPI	0.028	0.029	0.034	0.822	0.411
H4	BT -> ATT	0.643	0.644	0.032	19.843	0.000
H5	BT -> SPI	0.603	0.607	0.052	11.69	0.000
H6	ATT -> SPI	0.237	0.233	0.052	4.569	0.000
H7	SPI -> SPB	0.558	0.56	0.035	16.098	0.000
	Indirect effects					
	PG -> ATT	-0.075	-0.078	0.034	2.22	0.027
	PG -> SPB	-0.059	-0.061	0.028	2.113	0.035
	PG -> SPI	-0.134	-0.139	0.042	3.172	0.002
	BT -> SPB	0.421	0.424	0.035	12.018	0.000
	BT -> SPI	0.152	0.15	0.033	4.577	0.000

with sustainability principles. Additionally, Attitude Toward Green Products significantly enhances Sustainable Purchase Intention ($\beta = 0.237$, $p < 0.001$), confirming that positive consumer evaluations of green offerings are essential precursors to sustainable decision-making.

As expected, PG exerts a negative and statistically significant impact on both ATT ($\beta = –0.196$, $p < 0.001$) and BT ($\beta = –0.116$, $p = 0.030$). These results align with prior literature suggesting that misleading or exaggerated environmental claims undermine consumer confidence and weaken favourable attitudes toward sustainable products. However, the direct effect of PG on SPI is not significant ($p = 0.411$), suggesting that greenwashing influences intention indirectly through attitudinal and trust-related mechanisms rather than through a direct pathway. Finally, Sustainable Purchase Intention has a strong positive effect on Sustainable Purchase Behavior (SPB) ($\beta = 0.558$, $p < 0.001$), confirming that intention translates into real purchase actions when supported by trust and positive evaluations.

Regarding indirect effects, the mediating mechanisms within the model are also significant. BT

indirectly influences SPB (β = 0.421, p < 0.001) and SPI (β = 0.152, p < 0.001), underscoring its pivotal role in shaping downstream sustainable behaviours. Moreover, PG exerts several significant negative indirect effects—on ATT (β = –0.075, p = 0.027), SPI (β = –0.134, p = 0.002), and SPB (β = –0.059, p = 0.035)—illustrating that perceived corporate dishonesty in environmental communication undermines the entire green consumption process. Collectively, these findings demonstrate that consumer trust and attitudes serve as critical mediators that convert corporate environmental credibility into behavioural outcomes, while perceived greenwashing weakens this process through both direct and indirect pathways.

Collinearity diagnostics were examined to ensure that multicollinearity was not a concern in the structural model. As shown in Table 6, all Variance Inflation Factor (VIF) values fall well below the conservative threshold of 5.0 (Hair et al., 2017), with values ranging from 1.000 to 1.925. These results indicate that each predictor construct provides distinct explanatory information for its respective endogenous variable and that collinearity does not bias the path coefficient estimates. Therefore, the structural relationships among PG, BT, ATT, SPI and SPB can be interpreted with confidence.

Table 6. Variance inflation factor (VIF)

	ATT	BT	PG	SPB	SPI
ATT					1.925
BT	1.014				1.809
PG	1.014	1.000			1.088
SPB					
SPI				1.000	

The effect size results (Table 7) further clarify the relative importance of the hypothesized relationships. Consistent with the proposed hypotheses, BT exerts a large effect on SPI (f^2 = 0.506), and SPI shows a large effect on SPB (f^2 = 0.452), underscoring the pivotal roles of trust and intention in driving sustainable purchase behaviour. In contrast, ATT exhibits a small to moderate effect on SPI (f^2 = 0.073), suggesting a supportive but secondary role in intention formation. The effects of PG on ATT (f^2 = 0.073) and PG on BT (f^2 = 0.014) are small, while the direct effect of PG on SPI is negligible (f^2 = 0.002). This pattern supports the hypotheses that greenwashing primarily influences sustainable consumption through indirect pathways mediated by trust and attitude rather than through a direct effect on purchase intention.

Table 7. Effect size (f square) result

	ATT	BT	PG	SPB	SPI
ATT					0.073
BT	0.784				0.506
PG	0.073	0.014			0.002
SPB					
SPI				0.452	

4.4. Predictive and explanatory power

As summarized in Table 8, the model exhibits satisfactory explanatory and predictive capability based on the adjusted coefficients of determination and predictive relevance indicators. The adjusted R^2 values indicate that SPI (R^2_adj = 0.600) and ATT (R^2_adj = 0.478) are explained at moderate to substantial levels, while SPB (R^2_adj = 0.310) shows a moderate proportion of variance explained. In contrast, BT (R^2_adj = 0.011) displays limited explanatory power. The low adjusted R^2 value for BT indicates that PG alone explains only a small proportion of the variance in consumer trust. This result suggests that BT is a multifaceted construct influenced by a broader set of determinants beyond greenwashing perceptions.

In terms of predictive relevance, the Q^2 values are positive for all endogenous constructs, ranging from 0.008 to 0.396, thereby confirming that the model has acceptable out-of-sample predictive capability. Overall, these results indicate that the model performs well in explaining and predicting key outcome variables related to sustainable consumption, particularly sustainable purchase intention and behaviour (Hair et al., 2017).

Table 8. Predictive and explanatory power

Endogenous Construct	Adjusted R^2	Q^2 (1–SSE/SSO)	Interpretation
ATT	0.478	0.293	Moderate explanatory and predictive power
BT	0.011	0.008	Weak explanatory and low predictive power
SPI	0.600	0.396	Substantial explanatory and high predictive power
SPB	0.310	0.195	Moderate explanatory and acceptable predictive power

4.5. Discussion

The findings of this study are consistent with prior research on the psychological mechanisms linking greenwashing, trust, and sustainable consumption. The strong positive effects of BT on both ATT and

SPI) align with the results of Chang and Yoo (2025), who demonstrated that consumer trust in a company's environmental claims enhances favourable evaluations and purchase intentions. Similarly, Di Pillo et al. (2025) confirmed that among Generation Z consumers, authentic corporate sustainability communication strengthens trust and subsequently drives intention to purchase green products. The positive and significant relationship between ATT and SPI also supports the Theory of Planned Behavior (Ajzen, 1991), suggesting that favourable attitudes are crucial antecedents of sustainable purchase intentions.

These findings are particularly relevant in the Vietnamese context, where the green market is still emerging and institutionalized sustainability standards remain uneven (Nguyen et al., 2023). In such settings, consumers—especially Gen Z—tend to rely heavily on subjective evaluations of credibility rather than objective verification of environmental claims (Nguyen et al., 2021). This context helps explain why BT emerges as a dominant driver of SPI in the present study, while perceived greenwashing primarily operates through indirect psychological pathways. Rather than immediately suppressing purchase intention, PG undermines trust and attitudes, which subsequently weaken sustainable consumption intentions.

The negative associations between PG and both BT and ATT are consistent with the observations of Tarabieh (2021) and Nyilasy et al. (2014), who found that deceptive or exaggerated environmental claims trigger consumer scepticism, reduce trust, and weaken attitudes toward green products. The lack of a significant direct relationship between PG and SPI further corroborates Leonidou and Skarmeas (2017), who argued that the impact of greenwashing on behavioural intention is primarily indirect, mediated through psychological constructs such as trust and attitude. Finally, the strong linkage between SPI and SPB echoes findings from Chan and Lau (2002) and Rahbar and Wahid (2011), both of whom demonstrated that intentions translate into actual sustainable behaviours when consumers perceive credibility and environmental value in their purchases. Collectively, these results reinforce the theoretical model that positions trust and attitude as essential conduits through which perceived corporate authenticity—or its absence—shapes sustainable consumption behaviour.

5. Conclusion

This study examined the relationships among PG, BT, ATT, SPI and SPB among Generation Z consumers in Vietnam. Using PLS-SEM analysis, the findings reveal that PG has significant negative effects on BT and ATT, confirming that deceptive or exaggerated environmental claims undermine consumer confidence and favourable product evaluations. BT and ATT both play essential roles in shaping SPI, while SPI strongly predicts SPB, demonstrating a clear behavioural pathway from perception to trust, intention, and actual sustainable action. The results further show that BT and ATT mediate the indirect effects of PG on SPI and SPB, indicating that trust and attitude are crucial psychological mechanisms in sustainable consumption.

5.1. Theoretical Contribution

The study advances the green marketing literature by integrating the concepts of greenwashing, brand trust, and sustainable behaviour into a unified model tested within the Gen Z context. By confirming the indirect influence of PG on SPI and SPB through BT and ATT, this research extends prior work (e.g., Di Pillo et al., 2025; Chang & Yoo, 2025; Shi & Omar, 2024; Sun & Shi, 2022) and demonstrates the applicability of the attitude–intention linkage emphasized in the Theory of Planned Behavior (Ajzen, 1991) within an emerging-market setting. Recent studies have begun to broaden the understanding of greenwashing effects: Chang and Yoo (2025) examined how perceived deception undermines green word-of-mouth intentions and trust, Shi and Omar (2024) introduced perceived betrayal as an emotional response explaining why consumers disengage from green brands, and Sun and Shi (2022) identified environmental responsibility as a mediating mechanism linking greenwashing perceptions to green purchase intentions. While these studies deepen insight into specific consumer reactions to greenwashing, they have primarily focused on attitudinal or intention-based outcomes. The present study expands this scope by integrating these psychological mechanisms within a single structural framework that connects trust, attitude, and both intention and behaviour. Conceptually, it advances understanding by empirically testing these relationships among Gen Z consumers in Vietnam—an emerging market where sustainability awareness is rising but purchasing behaviours remain in transition.

5.2. Practical Contribution

From a managerial perspective, the results highlight the necessity for firms to maintain transparency and authenticity in their environmental communication. Building and sustaining BT should be a strategic priority, as it significantly enhances ATT and SPI. Companies should adopt verifiable sustainability certifications, provide clear and measurable environmental claims, and communicate tangible evidence of their environmental performance. Policymakers and educators can also leverage these insights to design awareness campaigns that strengthen young consumers' ability to detect greenwashing and encourage responsible purchasing behaviours.

5.3. Recommendations

Managers should prioritize the development of transparent and credible sustainability management systems that go beyond symbolic communication. This includes publishing comprehensive sustainability reports with measurable indicators of environmental and social performance, verified through independent third-party audits. By doing so, firms can demonstrate accountability and reduce the risk of consumer scepticism arising from perceived greenwashing. The consistent use of standardized and independently certified eco-labels is particularly important for addressing information asymmetry between firms and consumers. Because companies typically possess more detailed knowledge about their environmental practices than consumers, uncertified or vague green claims create uncertainty and scepticism. Certified eco-labels function as credible third-party signals that reduce this information gap by providing transparent and verifiable environmental information. As a result, consumers are better able to evaluate the authenticity of sustainability claims, distinguish genuine efforts from greenwashing, and make more informed purchasing decisions.

Marketing strategies should integrate both functional and ethical value propositions with the explicit objective of strengthening BT. From a functional perspective, green products should emphasize tangible benefits such as durability, safety, and cost efficiency, which help reduce perceived risk and enhance confidence in product performance. From an ethical perspective, firms should transparently communicate their environmental and social commitments, supported by clear evidence rather than symbolic claims. Trust can be further reinforced through mechanisms such as transparent sustainability reporting, disclosure of measurable environmental performance indicators, supply-chain traceability, and independent third-party audits. These practices reduce information asymmetry and signal corporate accountability, thereby strengthening BT. Importantly, consistency between communicated sustainability messages and actual business practices remains critical, as any perceived inconsistency can rapidly undermine trust—particularly among Gen Z consumers, who are sensitive to authenticity and credibility.

Furthermore, public institutions and NGOs should work collaboratively with private enterprises to design national and community-level environmental education initiatives. These programs can enhance young consumers' ability to critically assess sustainability information, differentiate between genuine and deceptive claims, and make responsible consumption choices. Universities, social media campaigns, and public–private partnerships can serve as effective channels to disseminate sustainability knowledge and cultivate eco-conscious mindsets. Such collective efforts not only build consumer trust but also contribute to a broader culture of transparency and long-term commitment to sustainable consumption practices.

5.4. Limitations and Future Research Directions

Despite its contributions, the study has several limitations. The use of non-probability purposive sampling limits the generalizability of the findings to other demographic groups. The cross-sectional design also restricts causal inference between constructs. Future research should employ longitudinal or experimental designs to examine how perceptions of greenwashing evolve over time. Expanding the model to include variables such as environmental concern, perceived consumer effectiveness, or cultural dimensions could offer deeper insight into sustainable behaviour formation. Comparative studies across different generations or countries would further enrich understanding of how contextual factors shape responses to greenwashing.

Furthermore, the limited explanatory power for BT suggests that trust formation in sustainable consumption contexts is influenced by a broader set of factors not captured in the current model. Accordingly, this limitation should not be viewed as a shortcoming of the study, but rather as an opportunity for future research to expand the theoretical framework. Subsequent studies are encouraged to incorporate additional constructs to develop a more comprehensive understanding of the multidimensional processes underlying brand trust formation in green markets.

REFERENCES

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

Chang, Y. J., & Yoo, J. W. (2025). A Trick Called "Eco": An Analysis of the Antecedents of Eco-Friendly Behavior. *SAGE Open*, 15(2), DOI: https://doi.org/10.1177/21582440251336836.

Chen, Y. S. (2010). The drivers of green brand equity: green brand image, green satisfaction, and green trust. *Journal of Business Ethics,* 93(2), 307–319. DOI: https://doi.org/10.1007/s10551-009-0223-9.

Di Pillo, F., Scuotto, V., della Peruta, M. R., Sangiuliano, C., & Di Domenico, G. (2025). Does greenwashing wash away Gen Z's green purchase intention? *Business Strategy and the Environment,* 34(1), 1–17. DOI: https://doi.org/10.1002/bse.4058.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage Publications.

Hameed, I., Hyder, Z., Imran, M., & Shafiq, K. (2021). Greenwash and green purchase behavior: an environmentally sustainable perspective. *Environment, Development and Sustainability*, 23(9), 13113-13134. DOI: https://doi.org/10.1007/s10668-020-01202-1.

Leonidou, C. N., & Skarmeas, D. (2017). Gray shades of green: Causes and consequences of green skepticism. *Journal of Business Ethics,* 144(2), 401–415. DOI: https://doi.org/10.1007/s10551-015-2829-4.

Nguyen, L., Nguyen, T. H., Ngoc Nguyen, H., Dai Nguyen, L., Thi Thu Nguyen, D., & Duy LE, L. (2023). Determinants of green consumer behaviour: A case study from Vietnam. *Cogent Business & Management*, 10(1). DOI: https://doi.org/10.1080/23311975.2023.2197673.

Nguyen, N., Tran, T. T., Tran, H., Nguyen, L., & Pham, K. (2021). Factors affecting green consumer behavior of young consumers. *VNUHCM Journal of Economics - Law and Management*, 5(4), 1915-1928. DOI: https://doi.org/10.32508/stdjelm.v5i4.846.

Nyilasy, G., Gangadharbatla, H., & Paladino, A. (2014). Perceived greenwashing: The interactive effects of green advertising and corporate environmental performance on consumer reactions. *Journal of Business Ethics,* 125(4), 693–707. DOI: https://doi.org/10.1007/s10551-013-1944-3.

Papista, E., & Krystallis, A. (2013). Investigating the types of value and cost of green brands: Proposition of a conceptual framework. *Journal of Business Ethics,* 115(1), 75–92. DOI: https://doi.org/10.1007/s10551-012-1367-2.

Rahbar, E., & Wahid, N. A. (2011). Investigation of green marketing tools' effect on consumers' purchase behavior. *Business Strategy Series,* 12(2), 73–83. DOI: https://doi.org/10.1108/17515631111114877

Shi, J., & Omar, N. A. (2024). The effect of greenwashing on green purchase intention: Perceived betrayal as a mediator and brand loyalty as a moderator. *Journal of Infrastructure, Policy and Development*, 8(9). DOI: https://doi.org/10.24294/jipd.v8i9.7520

Sun, Y., & Shi, B. (2022). Impact of Greenwashing Perception on Consumers' Green Purchasing Intentions: A Moderated Mediation Model. *Sustainability*, 14(19). DOI: https://doi.org/10.3390/su141912119.

Tarabieh, S. M. Z. A. (2021). The impact of greenwash practices over green purchase intention: The mediating effects of green confusion, green perceived risk, and green trust. *Management Science Letters,* 11(2), 451–464. DOI: https://doi.org/10.5267/j.msl.2020.9.022.