

# Towards sustainable development: Coupling green marketing strategies and consumer perceptions in addressing greenwashing

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## Abstract

To understand how consumers perceive greenwashing, this study examines the impact of green advertising receptivity (GAR), non-deception (ND), green brand image (GBI) and transparency (TR) on green brand trust (GBT) and subsequently the impact of GBT on consumers' purchasing intentions (PI). We also consider the mediation role of GBT between the relationship of the independent variables (GAR, ND, GBI and TR) and the dependent variable (PI). At the same time, we examine the moderating impact of ND on the GAR and GBT and of TR on the GBI and GBT relationship. Using the Stimulus–Organism–Response (SOR) framework, we test a number of hypotheses. A survey-based questionnaire was utilized to gather the data from Vietnamese respondents ( $n = 262$ ). We analysed the data using the partial least squares (PLS) method, which is a structural equation modelling (SEM) technique, with the assistance of the SmartPLS computer program 3.0. The data results show that GAR and GBI positively influence GBT, but the influence of ND and TR on GBT is insignificant. Again, the data show that GBT has a positive influence on PI, and as a mediator variable, it facilitates GAR, GBI and PI, but not the link between ND, TR and PI. A significant interaction effect of ND demonstrates that it strengthens the GAR–GBT relationship. However, the TR has no impact on the GBI–GBT relationship. The findings of this study provide insights into the theory and the essential managerial implications for successfully managing the implementation of green marketing strategies.

## KEYWORDS

green advertising, green brand image, green brand trust, greenwashing, purchase intention

## 1 | INTRODUCTION AND BACKGROUND

In recent years, in response to growing environmental challenges, companies have been required to show their good image and promise

more environmental benefits than they currently offer to environmentally conscious consumers (Sun et al., 2020). However, while most companies have started aligning their business models with sustainability, some are unable to fulfil these promises and 'greenwashing' is

**LIST OF ABBREVIATIONS/ACRONYMS:** AVE, average variance extracted; CR, composite reliability; GAR, green advertising receptivity; GBI, green brand image; GBT, green brand trust; HTMT, heterotrait–monotrait; IMF, International Monetary Fund; ND, non-deception; PI, purchase intention; PLS, partial least squares; PLS-SEM, partial least squares structural model; SEM, structural equation modelling; SOR, Stimulus–Organism–Response; SRMR, standardized root mean square residual; TR, transparency; VIF, variance inflation factor.

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prevalent (Bingaman et al., 2022; de Jong et al., 2020). Greenwashing is a company's marketing practice in order to look greener than it actually is, but in practice, its activities pollute the environment (TerraChoice, 2010). The greenwashing behaviour of businesses has not only resulted in negative outcomes, such as meddling with consumers' desire to consume sustainably, but has also created an adversarial relationship between businesses and consumers (Sun et al., 2020). Therefore, it is no surprise that companies are spending billions of dollars to find ways to build trust and maintain relationships with consumers. For example, the biggest oil companies BP, Chevron, ConocoPhillips, Exxon and Shell have together spent more than \$3.6 billion to build their reputation (Plant with Purpose, 2021). Numerous examples exist of companies that have been caught greenwashing, including fashion brands Zara, H&M and Uniqlo; the manufacturers of water bottles such as Spring, Evian and Deer Park; car manufacturers such as Volkswagen; and the manufacturers of FMCGs such as Nestle and Coca-Cola (Earthisland, 2021).

With the upsurge in sustainable consumption, consumers are becoming increasingly aware of firms' greenwashing propensities. Research shows that almost 90% of consumers consider brand transparency an important factor when making a purchase decision (Forbes, 2019). Similarly, consumers are witnessing a great deception from the companies responsible for the catastrophic heating of the planet. This means that consumers are sceptical about businesses that take advantage of environmental trends (Wang et al., 2020). Increased consumer confusion about the credibility of companies' environmental claims has eroded consumer confidence, preventing them from making an informed buying decision (Topal et al., 2020; Thøgersen, 2021). As a result, increased consumer mistrust has cast doubt on the legitimacy of companies' eco-marketing practices (Szabo & Webster, 2021).

Researchers are continuously documenting and validating the importance of consumers' reactions towards brands that claim to be green (Ginder & Byun, 2022). Research shows that since companies lie about their environmental commitments, the level of consumers' trust in these companies' advertising claims and their image may play a key role in shaping consumers' green purchase decisions (Chen, 2010; Lin & Zhou, 2022). Furthermore, research indicates that consumers' responses to the green initiatives and activities of firms need to be thoroughly understood (Rausch & Kopplin, 2021; Seelig, 2022; Sun et al., 2020). Research further suggests that firms can productively invest their resources in green communication in order to link green brand credibility with consumers' choice behaviour (Mansoor & Paul, 2022). Based on the extensive research review, this study identifies several research gaps that deserve investigation. First, previous research examined the antecedents (de Jong et al., 2020) and consequences of consumers' green trust (Bashir et al., 2020), but less attention has been paid to its role in strengthening green marketing strategies and purchase intention linkages (do Paço et al., 2019; Konuk, 2018; Lavuri et al., 2022). Second, research highlighted the importance of green marketing strategies such as green advertising and green brand image reflecting corporate environmental commitments to consumers; their results

are conditional and lack clear justification (Hwang & Lyu, 2020; Lin & Zhou, 2022). Against this background, this study suggests that factors such as green advertising receptivity (GAR), non-deception (ND), green brand image (GBI) and transparency (TR) may help shape consumers' green brand trust (GBT) and consequently influence their purchase intention (PI) (Tewari et al., 2022). Furthermore, this study posits that green brand trust may play a role as a mediator between GAR, ND, GBI, TR and the PI relationship (Lavuri et al., 2022; Szabo & Webster, 2021; Wang et al., 2020). Moreover, this study attempts to find the moderating impact of ND and of TR on the association between GAR and GBT and between GBI and GBT, respectively.

This study contributes to the theory and practice in the following ways: From a theoretical point of view, this study offers four contributions. First, this study qualifies as an informed response to the call of recent research to address the challenges marketers face in transitioning towards a circular society in the 21st century (Sheth & Parvatiyar, 2021; Shultz et al., 2022). Second, using the Stimulus–Organism–Response (SOR) model, this study provides empirical evidence regarding the mechanism of the trust factor as a precursor to outcome variables (Wasaya et al., 2021; Zhuang et al., 2021) and as a mediator between independent and dependent variables' relationships (Tarabieh, 2021; Tewari et al., 2022). Third, previous research indicates that since low green product purchases yield a substantial environmental impact, consumers look for the label sources and the environmental orientation of the firms. On the other hand, consumers look for more information and labels on high-involvement green products (Akturan, 2018). Accordingly, this study analyses to detect the effect of green advertising and brand image on the green brand trust of both low- and high-involvement products (Nagar, 2015; Suki, 2016). Fourth, this study examines the moderating role of ND and TR. Previous research has examined the direct effect of ND on the ethics of e-retailers in the e-commerce context (Roman, 2007; Roman & Cuestas, 2008) and in the sustainability research context (Cheung & To, 2021). In addition, some studies examined the direct effect of TR on the green brand image (Lee & Chen, 2019; Lin et al., 2021). However, after an in-depth literature review and to the authors' knowledge, the moderating role of these two variables has not been examined in the proposed relationships to date in existing green marketing research. The underlying rationale is that GAR and GBI initiatives of companies may enhance consumers' trust, but ND and TR will change the strength of the GAR–GBT and GBI–GBT relationships, respectively. It can help theorists and practitioners to understand the variations in consumers' trust in response to companies' green marketing practices. From a practitioner's perspective, the findings of this study relate to giving further insights on how to develop consumers' centred green marketing strategies reflecting firms' commitment to protecting the environment. For example, the pressure of globalization has raised concerns about protecting the environment, thus forcing companies to address legal and social obligations. Existing research finds that it is essential for managers to recognize a link between nature and their business, for instance, when a business has environmental goals and strategies

and when it targets environmentally conscious customer markets (Krause et al., 2021). Conversely, the increased competition in global markets has pressed firms to disclose information about their environmental footprints (Testa et al., 2018). However, mounting research points out that the lack of rules and regulations in developing countries is the main reason behind greenwashing by firms (Nekmahmud & Fekete-Farkas, 2020; Suki & Suki, 2019; Yang et al., 2020). Research reports that, while green companies continue to grow and expand into new geographic regions, the sustainability boom has led to the emergence of greenwashing, thus impeding sustainable development goals (Huang et al., 2020). At the same time, consumers' expectations in developing countries are continuously increasing and changing. Consumers in developing countries are becoming more sensitive to the green product's contribution to sustainable development (Mezger et al., 2020); therefore, they purchase from transparent companies that uphold sustainable and ethical practices (Papadopoulou et al., 2021). Given the above research backdrop, this study provides managerial implications for a better understanding of consumers' purchasing decisions related to green products in emerging markets where companies ignore their responsibilities and do not fully report the negative effects of their practices on the environment (Sheth & Parvatiyar, 2021; White et al., 2019). Likewise, the findings of this study may help practitioners formulate green marketing strategies from the consumers' perspective to create business value without compromising consumer trust (Huang et al., 2020).

The rest of this paper is structured as follows. The next section presents the theoretical framework and literature on the hypotheses. The third section presents the methodology, and the fourth section presents the data analysis and results. Section 5 comprises a discussion and conclusion. The last section looks at the research's implications, future research and limitations.

## 2 | LITERATURE REVIEW

### 2.1 | Theoretical framework

The proposed conceptual framework of this study is based on the stimulus-organism-response (S-O-R) theory (Jacoby, 2002). The SOR framework was able to explain behavioural differences resulting from various marketing stimuli and cognitive factors (Sultan et al., 2021). Previous studies in green consumption have used the SOR theory to explain how external factors influence consumers' cognitive and affective evaluations, which in turn determine their behavioural intentions (Gil & Jacob, 2018; Nguyen-Viet, 2022; Sun et al., 2020). The SOR theory postulates that the internal judgement procedure of an organism is initiated by a stimulus that influences its cognitive and affective assessments and, consequently, influences its response (Jacoby, 2002). In this study, green advertising receptivity (GAR), non-deception (ND), green brand image (GBI) and transparency (TR) are the stimulating factors. Moreover, the green brand trust (GBT) is conceptualized as an organism element, and the purchase intention (PI) variable is considered the response element of the SOR framework (See Figure 1).

## 3 | DEVELOPMENT OF THE HYPOTHESES

### 3.1 | Green advertising receptivity and green brand trust

To decrease consumer confusion, businesses need to reduce their greenwash behaviour and allow consumers to obtain enough information so as enable them to make better purchasing decisions (Chen & Chang, 2013). A green advertisement is an advertisement

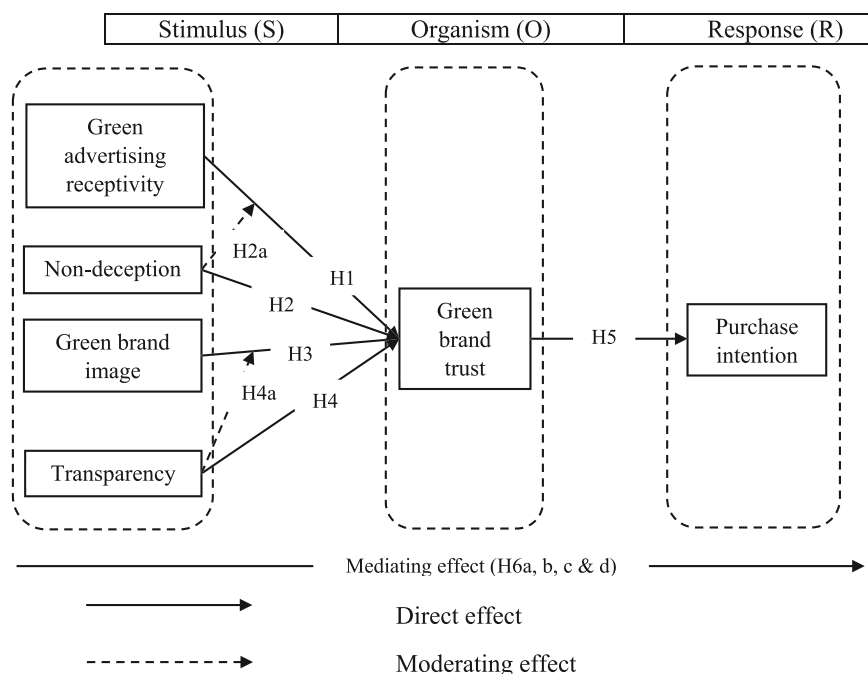


FIGURE 1 Hypothesized framework

that meets at least one of the following criteria. These include addressing the interaction between product and environment, promoting an eco-friendly lifestyle with or without highlighting a product or creating a company image of environmental responsibility (Banerjee et al., 1995; Yoon & Kim, 2016). According to Bailey et al. (2016), receptivity to green advertising is the extent to which consumers pay attention to and are favourably disposed and responsive to advertising that uses green messages in the marketing of products or a company itself. Green advertising receptivity can reduce promotion uncertainty and better influence consumer's purchase decision (Dangelico & Vocalelli, 2017; Sun et al., 2020). Research has revealed the importance of accurate and honest messaging through advertising, which contributes to building trust and credibility in the brand (Nguyen Viet & Nguyen Anh, 2021; Nguyen-Viet, 2022). When exposed to advertising, consumers form feelings (affect) and judgments (cognition) that influence their beliefs about the brand (Nagar, 2015). Advertisements in a green context provide information about the environmental impact of business practices, which are primarily concerned with raw materials, manufacturing and logistic processes and after-use activities (Leonidou et al., 2011). Green advertising receptivity strengthens the relationship between green appeal and brand trust and positively influences consumers' trust in the green brand (Bailey et al., 2016; Nguyen-Viet, 2022; Sun et al., 2020). Based on this, we hypothesize that:

**H1.** Green advertising receptivity positively influences green brand trust.

### 3.2 | Green advertising receptivity, non-deception and green brand trust relationship

Greenwashing has been attributed to a variety of factors, one of which is the consumer perceptions related to the irresponsible behaviour of the firms (Mansoor & Paul, 2022; White et al., 2019). Non-deception refers to a consumer's belief that a retailer does not engage in deceptive or manipulative selling practices (Roman, 2007). Specifically, the consumer believes that a retailer will not engage in deceptive practices to persuade him or her to buy something he or she has no intention of buying (Cheung & To, 2021; Roy et al., 2022). Although, previous research has explored the role of deception, very few studies have considered non-deception in green marketing research (Kangun et al., 1991; Schmuck et al., 2018). Recent research shows that non-deception play an important role in consumers' perceptions of green retailers' ethics (Cheung & To, 2021). Furthermore, recent studies found that, in non-deceptive related circumstances, consumer trust in green companies increases (Rahman et al., 2015; Szabo & Webster, 2021). Previous research has highlighted the deceptive potential of green advertising and shows that advertising can be perceived as unreliable out of the fears of misleading and deception (Johnston, 2008). Studies have shown that deceptive claims deceive consumers and result in incorrect consumer inferences about

the advertised products (Chaouachi & Rached, 2012; Schmuck et al., 2018). Based on the preceding literature, this study hypothesizes that:

**H2a.** Non-deception positively influences green brand trust.

**H2b.** Non-deception moderates the green advertising receptivity and green brand trust relationship.

### 3.3 | Green brand image and green brand trust

Brand image can be defined as the mental image of a brand in the consumers' mind, which relates to an offer (Cretu & Brodie, 2007). Consumers believing that a company has a better brand are more likely to purchase their products (Chen et al., 2020). In a green context, a green brand image is defined as a set of consumer brand perceptions linked to environmental commitments and concerns (Chen, 2010; Martínez, 2015). A green brand image is essential for companies, especially in light of consumer awareness of the environment and strict international regulations to protect the environment (Delafruz & Goli, 2015). Green brand image satisfies the environmental desires of consumers and reduces the resulting problems (Khandelwal et al., 2019). In this way, a green brand image positively influences consumer trust because it can reduce perceived risk (Chen, 2010). Previous research has examined the relationship between green brand image and trust (Bashir et al., 2020; Bekk et al., 2015). Accordingly, we hypothesize that:

**H3.** Green brand image positively influences green brand trust.

### 3.4 | Green brand image, transparency and green brand trust relationship

Transparency, in the context of the environment, refers to how green brands provide clear and relevant information about their environmental policies. Transparency is an open acceptance of how the manufacturing process of businesses affects the environment (Lin et al., 2017). Transparent green brands do not only focus on the long-term positive impact of their products on the environment but also on their ability to communicate business practices (Bhaduri & Ha-Brookshire, 2011; Ha-Brookshire & Hodges, 2009). Transparency is a fundamental requirement for companies to establish a positive relationship with consumers (Kang & Hustvedt, 2014). Recent research found that green transparency produces a green brand image and green trust (Deng & Yang, 2022). According to Chun et al. (2021), transparency positively influences consumer trust in green brands. On the other hand, research has shown that, when consumers have a high level of knowledge about the environmental impact of products, they tend to have positive evaluations of brands in terms of perceived

value and benefit. This creates a strong relationship between consumers and brands (Copeland & Bhaduri, 2020). Likewise, transparency facilitates the relationship between green brand trust and green brand image (Lee & Chen, 2019). According to Busser and Shulga (2019), consumers' belief in the transparency and authenticity of brands enhances their trust in those brands. Therefore, it is hypothesized that:

**H4a.** Transparency positively influences green brand trust.

**H4b.** Transparency moderates the green brand image and green brand trust relationship.

### 3.5 | Green brand trust and purchase intention

Trusting a brand means there is a high likelihood of an expectation among its consumers that the brand will receive positive feedback (Chen, 2010). Trust in the brand is based on the consumer's belief that the brand is coherent, competent, honest and accountable (Doney & Cannon, 1997). In the green context, trust is the willingness of consumers to rely on a brand based on the belief or expectation that it is believable, caring and capable of environmental performance (Martínez, 2015). Hence, green trust can lead to stronger purchasing intentions (Kahraman & Kazançoğlu, 2019; Ng et al., 2018). Research shows that trust is one of the important determinants of consumers' green purchasing intention (Chen, 2010; Gil & Jacob, 2018; Konuk et al., 2015). Recent research supports these findings and shows that trust in green brands positively affects consumers' intention to purchase green products (Amin & Tarun, 2020; Nguyen-Viet, 2022). Based on these findings, it is hypothesized that:

**H5.** There is a positive effect of green brand trust on green purchase intention.

### 3.6 | Mediating role of green brand trust

Consumers' trust in affective signals from companies as a reference to evaluate quality makes emotional aspects of trust important (Martínez, 2015). To communicate the dependability, usefulness and competence of their green products and strengthen consumer trust, green firms take advantage of their image, advertising and trust-building strategies (Cheung & To, 2021; Lavuri et al., 2022; Wang et al., 2020). According to Wang (2011), consumers' trust depends on the firm's good intentions and behaviour; therefore, consumers create a positive intention to patronize firms' products. Trust is one of the key drivers for consumers to buy an environmentally friendly product and to believe in its effectiveness in solving environmental problems (Chen, 2010). According to Chen and Chang (2012), green brand trust mediates the connection between

the antecedents of green purchase goals and buying intention. Similarly, research shows that trust in firms' transparency efforts strengthens the relationship between their attitudes and buying intention (Bhaduri & Ha-Brookshire, 2011). Recent research suggests examining the mediation of trust in consumers' perceptions of environmentally friendly retailers' non-deceptive practices and their response to them (Cheung & To, 2021). Moreover, research has revealed that green brand trust positively strengthens the relationship between green advertising receptivity and green brand image with purchase intention (Lavuri et al., 2022). Accordingly, it is hypothesized that:

**H6.** Green trust plays a role of a mediator between (6a) green advertising receptivity, (6b) green brand image, (6c) non-deception and (6d) transparency and purchase intention relationship.

### 3.7 | Research context

While green companies continue to grow and expand into new geographic regions, the sustainability boom in emerging countries has led to the emergence of greenwashing and hampering sustainable development goals (Huang et al., 2020). Multinationals immediately engage in greenwashing in emerging economies characterized by competitive pressures, restricted regulations and the search for clear markets; therefore, the greenwashing of firms in these countries is significantly different from that in developing countries (Yang et al., 2020). de Freitas Netto et al. (2020) find that, because of the lack of regulations and effective measures, there is a potential for greenwashing by firms in developing countries. Extant research indicates that, in developing countries such as Pakistan, consumers lack awareness of the greenwashing practices of the firms (Hameed et al., 2021). Likewise, Lin et al. (2017) find that Chinese consumers continue to consume products without discovering the negative outcomes of those products. Viera et al. (2020) find that false claims of biodegradability in plastic are becoming frequent in Brazil, which is a major environmental concern for Brazilian consumers. Given the ever-increasing deterioration of the environment in emerging countries, Vietnam is also vulnerable to climate change and is the most hazard-prone country in the world (The Conservation, 2021). According to the International Monetary Fund (IMF), climate change could affect over 12% of the Vietnamese population and reduce the country's growth by 10% (IMF, 2018). In the process of transitioning to a greener economy, the Vietnamese government has acknowledged climate challenges and is working to prepare for the impact of those challenges. One of Vietnam's climate challenges is the rise of carbon emissions in the country. Research shows that Vietnamese consumers know about environmental issues and are willing to pay more for sustainability-certified products (Nguyen & Dekhili, 2019; Vuong et al., 2021). However, most businesses in the country spend more time pretending to be environmentally friendly and polluting the environment at the same time. Therefore, it is

necessary to address greenwashing perceptions of the Vietnamese consumers (Nguyen et al., 2019).

## 4 | METHODOLOGY

### 4.1 | Sample and data collection procedure

A field study was conducted using an online and offline survey to test the proposed hypotheses. The questionnaire was translated into the Vietnamese language. In addition, a back-translation method was followed to accurately depict the exact meaning of the questionnaire in the target language (Tyupa, 2011). To minimize response bias and help respondents understand the statements, a native speaker distributed the final version of the survey to the respondents. To increase the probability of completing the questionnaire, respondents had the option of completing the questionnaire online or in paper format, whichever method they preferred. A non-probabilistic purposive sampling technique was employed, which is considered useful in research on green product purchasing experience (Suki, 2016). Respondents have a green product buying experience, such as buying and consuming a sustainable product at least once during the past 6 months (Tewari et al., 2022) (see Table 1). Respondents were asked to complete the questionnaire remembering their selected brand purchase and think about the image and the claims and advertising of that brand. The respondents were informed about the data's objectives and confidentiality to counteract non-response bias. Before the distribution of the final survey, a preliminary test was carried out among 50 respondents to ensure the structure and validity of the survey instrument. The survey instrument was developed through Google forms and a link to the questionnaire was generated. Of the 500 respondents,  $n = 262$  (52.4%) responded in a manner that would be useful for data analysis. The sample size is above 200, which is reasonable for structural equation modelling (SEM) analysis (Bagozzi & Yi, 2012; Hair et al., 2010).

### 4.2 | Measures

The first section of the questionnaire contained questions about variables, and demographic information was requested from respondents at the end section of the questionnaire. The green advertising receptivity variable was measured using four scale items adapted from the study of Tewari et al. (2022). The scale items of the non-deception variable were operationalized based on the Cheung and To (2021) study. The green brand image was operationalized using four scale items from the study of Lin and Zhou (2022). Four green brand trust measures and three measures of purchase intention variable are adapted from the study of Konuk et al. (2015). The scale items for transparency are adapted from the study by Lin et al. (2021). All scale elements of the questionnaire were measured using the Likert 5-point scale ranging from (Akturan, 2018) *strongly disagree* to (Banerjee et al., 1995) *strongly agree*.

TABLE 1 Experience with green product purchases

Variable	Frequency	Percentage
Type of green product purchased		
Beverages	2	0.76
Cosmetic	4	1.53
Organic dairy product	9	3.44
Reusable straw	20	7.63
Electric appliance	5	1.91
Electric motorcycle	1	0.38
Food/meal	24	9.16
Clothes	2	0.76
Furniture	1	0.38
Tapware	8	3.05
Organic vegetables and fruits	105	40.08
Handbag	9	3.44
Household item	1	0.38
Misc.	34	12.98
Shopping bag	19	7.25
Toiletry item	14	5.34
Do not remember	4	1.53
Purchase frequency		
1 to 5	139	53.05
11 to 15	15	5.73
16 to 20	7	2.67
6 to 10	55	20.99
Do not remember	4	1.53
Everyday	7	2.67
Monthly	1	0.38
More than 20 times	24	9.16
Usually	2	0.76
Weekly	8	3.05

### 4.3 | Statistical technique

To check the hypothesized relationships and fitness of the model, we used the SEM technique. To analyse the data, this study used the partial least squares (PLS) methodology with the assistance of the SmartPLS computer program 3.0. SmartPLS is a statistical software with a graphical user interface for variance-based SEM analysis using the PLS path modelling method. According to Hair et al. (2010), SEM analysis is appropriate in research with multiple constructs and represented by several variables that allow the relationships to be estimated altogether.

## 5 | RESULTS

### 5.1 | Demographic information

The demographic characteristics of the respondents indicated that 155 respondents were women. Most respondents were aged 18 to

35 (83.71%). Married participants accounted for 84 (31.82%). The majority of respondents 178 (67.42%) had income levels in Vietnamese dong between <15,000 and 35,000 while 50 (18.94%) respondents had income levels above 105,000, respectively. There was one doctoral graduate, 155 respondents had an undergraduate degree, and 24 respondents had a high school diploma (see Table 2).

**TABLE 2** Demographic information

Characteristic	Frequency	Percentage
Gender		
Male	109	41.29
Female	153	57.95
Marital status		
Married	82	31.06
Unmarried	175	66.29
Divorce	4	1.52
Widowed	1	0.38
Age		
18–20	114	43.18
21–25	29	10.98
26–30	46	17.42
31–35	30	11.36
36–40	14	5.30
41–45	10	3.79
46–50	9	3.41
51–55	5	1.89
56–60	5	1.89
Income		
<15,000	80	30.30
15,001–25,000	49	18.56
25,001–35,000	35	13.26
35,001–45,000	14	5.30
45,001–55,000	10	3.79
55,001–65,000	11	4.17
65,001–75,000	1	0.38
75,001–85,000	3	1.14
85,001–95,000	3	1.14
95,001–105,000	8	3.03
>105,000	50	18.94
Education		
Middle	2	0.76
Matric/high school	24	9.09
Intermediate	45	17.05
Bachelor's degree	155	58.71
Master's degree	35	13.26
PhD/doctoral degree	1	0.38

## 5.2 | SEM analysis

### 5.2.1 | Measurement model evaluation

Following the two-stage SEM technique, the data were analysed using the partial least squares structural model (PLS-SEM). All constructs were examined to find missing values, including checking outliers and avoiding normality issues. In order to see the interrelationship among the variables, the Pearson correlation test was used. To check the reliability and convergent validity of the data, we computed average variance extracted (AVE), Cronbach's alpha and composite reliability (CR). To achieve adequate discriminant validity the square root of AVEs exceeds the correlation coefficients between the pair of corresponding constructs (see Table 3). Loading of all factors demonstrated adequate convergent validity indicating internal consistency above the recommended threshold value of .50 (Fornell & Larcker, 1981). Further, to establish discriminant validity following the suggestion of Henseler et al. (2015), the heterotrait-monotrait (HTMT) ratios of the correlation were calculated and ranged from .128 to .878, below the cut-off value of .90 recommended by (Hair et al., 2022).

Since the data for the model came from a one-time survey and single country respondents, it was important to assess the common method variance. Consequently, to control the potential common method bias of the model, we followed the procedure and statistical method proposed by Podsakoff (2003). With regard to the procedural method, the respondents' confidentiality and anonymity were ensured. In addition, we randomized the variables and statements on the questionnaire to prevent respondents from inferring the cause and effect relationship between the concepts. Regarding the statistical procedure, we checked the variance inflation factors (VIFs) generated via a full collinearity test in PLS-SEM (Kock, 2015). This procedure suggests that if the VIF value is greater than 3.3, there is an indication of collinearity, which means the existence of a common method bias. Our analysis showed that the VIF values were between 1.090 and 3.169, which are under the threshold value of 3.3. This means that common method bias is not a significant problem and there is no multi-collinearity issue in this research.

### 5.2.2 | Structural model evaluation and hypotheses result

The first step in the structural model estimation process is calculating the  $R^2$  value. It shows the total magnitude of the variation of dependent/endogenous variables explained by independent/exogenous variables in the model. The  $R^2$  in the model of this study shows that independent variables exhibit 57% variance in green trust and green trust exhibits 29% variance in purchase intention, which, in marketing research, is above the cut-off value of 10% suggested by (Hair et al., 2010). The next step is to compute  $Q^2$ , which is the value of the validated redundancy measures using the blindfolding command. By demonstrating the value of .35 for the green brand trust and .21 for purchase intention,  $Q^2$  demonstrated the significant predictability of

**TABLE 3** Correlation, discriminant validity, reliability and internal consistency

Variables	GAR	GBI	T	GT	ND	PI	CR <sup>a</sup>	AVE <sup>b</sup>	$\alpha$
GAR	(.862)						.832	.744	.732
GBI	.631**	(.892)					.873	.795	.807
TR	.531**	.729**	(.912)				.900	.832	.852
GBT	.592**	.709**	.582**	(.893)			.875	.797	.808
ND	.114*	.243*	.268*	.106*	(.925)		.917	.856	.846
PI	.580**	.629**	.607**	.542**	.135*	(.926)	.893	.857	.820

Note: Values of square root of AVEs are shown diagonally in parentheses. Abbreviations:  $\alpha$ , Cronbach's alpha; GAR, green advertising receptivity; GBI, green brand image; GBT, trust; ND, non-deception; PI, purchase intention; TR, transparency. <sup>a</sup>CR = (square of the sum of the factor loadings)/[(square of the sum of the factor loadings) + (square of the sum of the error variances)]. <sup>b</sup>AVE = (sum of squared factor loadings)/(sum of squared factor loadings + (sum of error variances)). \*  $p < .05$ . \*\*  $p < .01$ .

**TABLE 4** Hypotheses result

Hypotheses	Hypothesized path	Path coefficients	t value	p value	Label
Direct effects					
H1	GAR → GBT	.224	4.102	.00	Supported
H2	ND → GBT	-.137	1.713	.07	Not supported
H3	GBI → GBT	.485	7.473	.00	Supported
H4	TR → GBT	.122	1.692	.09	Not supported
H5	GBT → PI	.543	9.901	.00	Supported
Indirect effects/mediating hypothesis result					
H6a	GAR → GBT → PI	.121	3.654	.00	Supported
H6b	GBI → GBT → PI	.270	5.559	.00	Supported
H6c	ND → GBT → PI	-.039	1.696	.09	Not supported
H6d	TR → GBT → PI	.065	1.646	.10	Not supported

Note:  $p < .05$  (based on one-tailed test with 5000 bootstrapping).

the model. The model fit was established using the standardized root mean square residual (SRMR), defined as 'the difference between the observed correlation and the model implied correlation matrix'. The SRMR value of the model is .06, which is lower than the cut-off value of .08, thus demonstrating a good fit (Henseler et al., 2015). The next phase consisted of assessing the accuracy of the measurement model. To this end, the path coefficients and then the t values were calculated using the bootstrapping method of the 5000 sub-sample sampling test at a significance level of .05 (Hair et al., 2022). The bootstrapping procedure shows that the path coefficients allow the strength of the relationship between independent and dependent variables of the model. Accordingly, the hypotheses of this study were examined using the path coefficients. The specific indirect values show the impact of the mediating variable GBT (Organism) between the independent variables GAR, ND, GBI and TR (Stimulus) and the dependent variable PI (Response). As depicted in the model, GAR significantly influences GBT, supporting H1 ( $\beta = .224, p < .05$ ). However, the data do not support H2 because ND has a negative effect on GBT ( $\beta = -.137, p < .05$ ). Concerning the H3, the data support the GBI's influence on the GBT ( $\beta = .485, p < .05$ ). However, the TR effect on

GBT is not significant; therefore, the data do not support the H4 ( $\beta = .122, p > .05$ ). The data support the influence of the GBT on PI, so we accept the H5 ( $\beta = .543, p < .05$ ). The data show that GBT fully mediates between GAR-PI (H6a) ( $\beta = .121, p < .05$ ) and GBI-PI (H6b) ( $\beta = .270, p < .05$ ). However, GBT does not mediate between ND-PI (H6c) ( $\beta = -.039, p > .05$ ) and TR-PI (H6d) ( $\beta = .065, p > .05$ ) relationship. Table 4 and Figure 2 show the results of the hypothesized relationships. ND succeeded in moderating the relationship between GAR and GBT, which supported the H2a, but the data did not support the moderate impact of TR on the relationship between GBI and GBT; thus, we reject H4a. The results for the moderators are presented in Table 5 and Figure 3.

## 6 | DISCUSSION AND CONCLUSION

The primary purpose of this study was to examine factors such as the influence of GAR, ND, GBI and TR on the GBT. In addition, this study assessed the moderating impact of (a) ND on the GAR and GBT relationship and (b) TR's impact on the GBI and GBT relationship. The



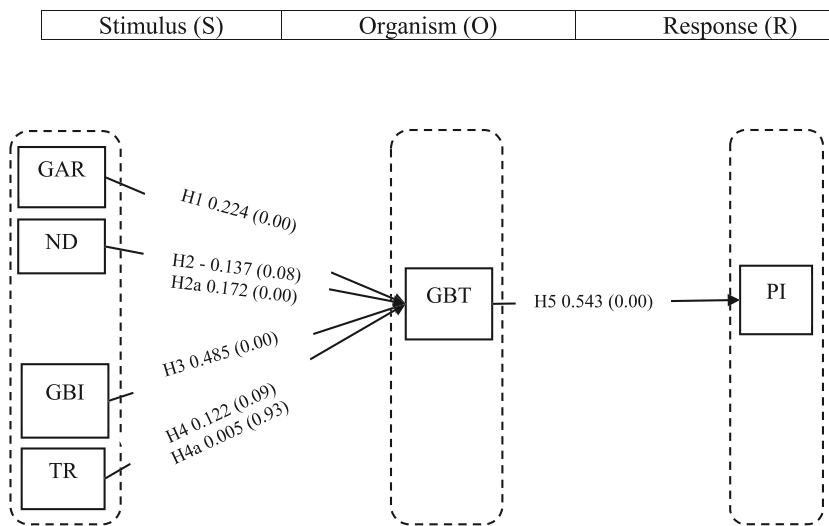


FIGURE 2 Hypotheses results

Mediating results (H6a 0.121 (0.00), H6b) 0.270 (0.00), H6c) - 0.039 (0.09), and H6d) 0.065 (0.10)

Hypotheses	Hypothesized path	Path coefficients	t value	p value	Label
H2a	GAR × ND → GBT	.172	3.879	.00	Supported
H4a	GBI × TR → GBT	.005	0.085	.93	Not supported

TABLE 5 Moderating hypotheses result

Note:  $p < .05$  (based on one-tailed test with 5000 bootstrapping).

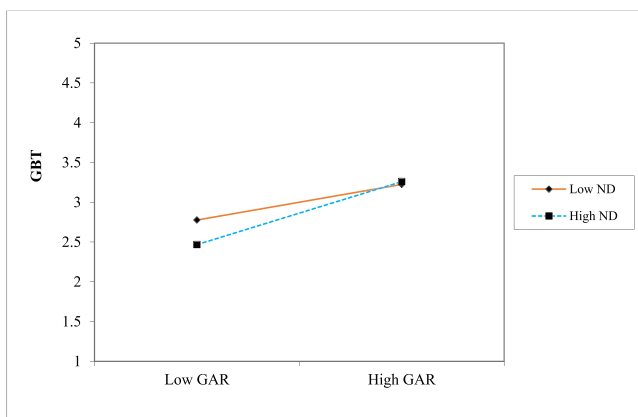


FIGURE 3 Moderating hypotheses result

study also examined GBT's mediating role between independent variables and dependent variable relationships. The conceptual model of this study was formulated using the SOR framework. The proposed hypotheses were examined on the data collected from Vietnamese respondents. The findings of this study show that two factors such as GAR and GBI have a positive influence on the GBT. GBT also positively influences PI. However, ND and TR had no positive influence on the GBT. The data partially support the mediator role of GBT, as it mediates the relationship between the GAR, GBI and PI only, but does not facilitate the ND, TR and the purchase intention relationship. The moderating result of ND on the GAR–GBT relationship was considered significant, but TR did not moderate the GBI–GBT relationship.

Study results indicate that GAR positively affects GBT (H1). This finding is similar to previous research where it was found that GAR had a positive impact on consumers' trust in green brands (Sun et al., 2020). This means that consumers believe in green ad information linked to green products (Nguyen-Viet, 2022). As businesses adhere to environmental imperatives, they wisely use positioning strategies to influence consumers' green product purchasing decisions (Sun et al., 2020). Businesses use various messages and appeals that illustrate the potential benefits for the environment and society (Tewari et al., 2022). However, the data provide valuable additional evidence concerning the relationship between ND and GBT (H2). This is in line with previous research (Cheung & To, 2021). This means that consumers have identified deceptive marketing practices that lead to consumer distrust of green brands (Rahman et al., 2015). Simply put, green brands mislead consumers by overestimating the benefits of green products, taking advantage of less experienced consumers (Roman, 2007). Therefore, the data support the H3 as GBI positively influences GBT. This finding is consistent with previous research (Bashir et al., 2020; Chen, 2010). This finding implies that the overall image of green brands is positive for consumers because they see that green brands are committed to delivering on their environmental commitments. This result demonstrates as to how important it is for green brands to provide such information to build a strong brand image (Lin & Zhou, 2022). However, data indicate that the effect of TR on consumer trust in green brands is insignificant (H4). Previous research has shown that TR is an important factor for consumers while making an environmentally friendly purchasing decision, which positively influences their GBT (Copeland & Bhaduri, 2020). However, the

results of our study suggest that green brands do not provide relevant and transparent information on their environmental responsibility. Consequently, this raises consumer mistrust of these brands (Nguyen et al., 2019; Romani et al., 2016).

With respect to the green brand trust mediation in the relationship between the independent and the dependent variables, the data support two of the four hypotheses. First, GBT has been identified as an important knot for facilitating GAR (H6a), GBI (H6b) and PI relationships. However, the relationship of ND (H6c) and TR (H6d) through GBT is insignificant. This is an important finding and supports past research from Lavuri et al. (2022). Green brands could have convinced consumers by promoting the environment through green advertising and demonstrating environmental responsibility through their good image. As a result, consumers who positively perceive the advertising and the image of green brands express greater trust and therefore intend to purchase green products. These findings support past research from Cheung and To (2021) and Bashir et al. (2020). The insignificant GBT role between ND, TR and PI relationship means that consumers cannot trust green businesses because consumers think that green advertising and the image of green businesses do not meet their expectations. Therefore, in terms of honesty and transparency regarding environmental protection, green businesses mislead consumers and lie about the impact of their green operations and practices on the environment (Sun et al., 2020; Tewari et al., 2022). Interestingly, when ND was tested as a moderating variable between the GAR and GBT relationship, it strengthened that relationship positively. According to Cheung and To (2021), providing needed manufacturing and production information can promote non-deception. Thus, consumers would use ND to confirm a decision regarding trusting green brands. This can lead to the fact that the more consumers receive green advertising, the more they worry about trusting green brands, which are affected by their perception of non-deception. Meanwhile, TR has not moderated the GBI-GBT relationship. This result can be demonstrated in the lesser interest of consumers' transparency when evaluating the green brand image. Therefore, TR is not an important variable for consumers to associate GBI with GBT (Nguyen & Dekhili, 2019).

Particularly, in the context of Vietnam, the findings of this study are of great importance. This study's findings further support the notion that greenwashing is a significant concern within developing countries, especially in Vietnam (Nguyen et al., 2019; Yang et al., 2020). The results show that opportunistic companies are persuading Vietnamese consumers through green advertising by presenting a good image, even though their activities are harming the environment. The impact of non-deception and transparency on trust reflects that Vietnamese consumers make informed green purchasing decisions, as they recognize companies pursuing deceptive practices and those that do not disclose information about their environmental footprint (Testa et al., 2018). Assuming that companies in developing countries say one thing but do another, and that the majority of consumers in developing countries lack knowledge about greenwashing, the results of this study suggest that Vietnamese consumers' environmental and greenwashing awareness may play a significant role in

their green purchase decisions (Nguyen & Dekhili, 2019; Vuong et al., 2021).

## 6.1 | Theoretical implications

This study contributes to existing green marketing research that attempts on the need for societal and environmental considerations in economic and governance matters (Sheth & Parvatiyar, 2021). Simply put, this study attempted to determine how companies should shift their focus from maximizing profits and deceiving consumers to communicating environmental commitments without compromising their reputation (Chen, 2010; Shultz et al., 2022). In addition, this study substantiates existing knowledge regarding how firms can use green marketing strategies and approaches to communicate their environmental commitments and performance (Chen & Chang, 2012). The contribution of this study to existing green marketing research and practice is essential as consumers expect more information about companies' green initiatives and activities (Hwang & Lyu, 2020; Lin & Zhou, 2022; Seelig, 2022; Sun et al., 2020).

The results of this study provide existing research on green marketing with a clear view of the factors that influence consumers' green purchasing decisions. First, compared to existing studies, this study focuses more on the formation and enhancement of green purchase intentions by providing a comprehensive set of factors (Cheung & To, 2021; Lavuri et al., 2022). Second, using the SOR framework, this study not only determines how GAR, ND, GBI and TR influence PI through GBT but also clarifies the formation of the relationships through the moderating role of ND and TR. This may be useful for future research using SOR as a theoretical lens. Third, by integrating ND and TR as moderate factors, this research model provides new insights into how a company's green advertising and green brand image can be understood in relation to these factors. This can further extend the studies by Lavuri et al. (2022), Chen (2010), Roy et al. (2022) and Cheung and To (2021) that GAR, ND, GBI and TR play an important role in consumers' trust-building and image perceptions of green brands. Fourth, this study paid attention to and appraises the concerns of previous research regarding the role of green trust in strengthening the green marketing strategies and purchase intention linkage (do Paço et al., 2019; Konuk, 2018). Finally, this study contributes to the existing literature by setting out the effect of ND and TR on GBT towards social exchange theory (Cheung & To, 2021) which explains that an individual's feelings depend on their perceptions of fairness. Simply, when consumers believe that green brands are ethical and provide transparent information, they may perceive that they are not deceived, which draws corporations and consumers into a good relationship.

## 6.2 | Practical implications

Building on the preceding discussion, several notable implications can be drawn from the results of this study. This study warns green

brands to avoid misleading consumers using vague and blurry communication, particularly when communicating the benefits of products. Such as, there are increased suppositions in existing research that both consumers and the marketing system could play a vital role in promoting sustainability (Wiedmann et al., 2020), findings of this study may help in the creation of a trustworthy relationship with consumers by taking into consideration the importance of non-deception and transparent communication. On the solution side, the most important implication of behavioural research is that consumers need considerable help to modify their consumption habits in a climate-friendly way. To make this possible, the results of this study could help companies focus on providing reliable and understandable carbon label and performance information to consumers (Thøgersen, 2021).

Previous research has emphasized the role of green advertising and green branding in enhancing consumer trust in green brands (Lavuri et al., 2022; Nagar, 2015). Similarly, the findings of this study also indicate that GAR and GBI play a key role in building consumers' green brand trust. As consumers in emerging economies are becoming familiar with environmental issues and are ready to pay more for certified green products (Nguyen & Dekhili, 2019; Vuong et al., 2021), therefore, this study further guides the green brands in assessing the long-term impact of their positioning and promotion strategies in emerging countries. For example, the reorientation of these strategies can contribute to building consumer trust and creating opportunities for market recognition and support. This study's most interesting and important conclusions are the insignificant influence of non-deception and transparency and the moderate impacts of the two variables. These results have important implications for managers, as they may experience a hostile response from consumers and thus face difficulties in communicating the environmental benefits of green products. In this situation, managers should openly admit to the public the reasons for failure and provide justifications for the shortcomings. In addition, tell consumers how they plan to do better (Szabo & Webster, 2021). In particular, to improve consumer GBI and GBT relations, businesses need to invest in providing transparent information. Not only will this clear up consumer confusion about brand credibility, but it will help consumers easily make green buying decisions (Sun et al., 2020; Wang et al., 2020).

### 6.3 | Limitations and future recommendations

In spite of careful consideration of all aspects, this research is not immune from limitations. First, this study was conducted in Vietnam, so the generalizability of the findings may be limited. This current research, although an extension of related research, utilized the SOR framework and applied the methodological design to ensure external validity. In addition, the results obtained further ensure external validity. However, since consumers' purchase intention varies as a function of purchasing context and competitive set, there is a potential for future research to validate the framework in other developing countries, which should enhance external validity. Second, as developing

countries are vulnerable to environmental impacts and consumers are less knowledgeable about greenwashing practices, green businesses can easily deceive these consumers. Therefore, it would be interesting to test this framework in a cross-country or cross-cultural context to see the similarities and differences in consumers' perceptions regarding greenwashing. Third, future studies can use different theoretical frameworks such as the theory of social exchange, the theory of self-determination and/or the theory of reasoned action for differences and similarities in the proposed hypotheses. Fourth, the motivation for sustainable consumption is often referred to as the consumption of products that do not contain chemicals and are therefore good for health, society and the environment. In this situation, adding various variables will give researchers a better understanding of consumers' sustainable consumption choices. In doing so, factors such as perceived value, product quality and benefits as utilitarian, hedonic, symbolic, environmental and societal can produce useful outcomes for theoretical development and practice. Finally, this research may have shortcomings in terms of sample size and respondents' characteristics, construct operationalization and the choice of method. Future research could look at conducting studies on large sample sizes, testing the data with respect to the respondents' characteristics, using a different method of analysis and operationalizing the constructs.

### CONFLICT OF INTEREST

The authors have no conflicts of interest to declare. All the co-authors have seen and agreed with the contents of the manuscript to publish in this journal.

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