Print ISSN: 2288-4637 / Online ISSN 2288-4645
doi:10.13106/jafeb.2021.vol8.no8.0229

The Impact of Corporate Greenwashing Behavior on Consumers' Purchase Intentions of Green Electronic Devices: An Empirical Study in Vietnam

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Received: April 10, 2021 Revised: June 26, 2021 Accepted: July 04, 2021

Abstract

The environment friendly lifestyle and the green product trend have motivated corporates to develop and adopt sustainable business practices. However, an increasing number of corporations have engaged in greenwashing practices to create the appearance of environmental responsibility. By employing the theory of reasoned action, the paper investigated a model linking corporate greenwashing and consumers' green purchase intentions with the mediating role of green trust and green word-of-mouth about green electronic devices in Vietnam. Using an online survey via Email, Zalo, and Wechat, data was obtained from 308 Vietnamese consumers who have been purchasing green electronic devices. Based on the responses of the participants from the questionnaires conducted, data analysis was conducted by using SEM in AMOS version 23. This investigation shows that corporate greenwashing negatively affects consumers' green trust, green word-of-mouth, and their green buying intentions. Additionally, the paper verifies that green trust and green word-of-mouth mediate the relationships between greenwashing and consumers' green purchase intentions. These results reinforce the extant understanding of greenwashing and its consequences. Finally, the study not only stimulates future research but serves as a reference for business managers, scholars, and students who are interested on the topic of environmental sustainability, new product development, and green brands.

Keywords: Corporate Greenwashing Behavior, Green Trust, Green Brands, Green Word-of-Mouth, Green Purchase Intentions

JEL Classification Code: D21, D83, F64, M31, Q56

1. Introduction

In recent decades, consumers' increasing awareness of environmental protection has brought about noticeable changes in their consumption demand and behavior (Nguyen et al., 2020; Yang et al., 2020). Green products are more favored because of their little or no negative impacts on the users' health and people around them, little or no direct negative and/or indirect impacts on the environment during manufacture, usage, and even after-use processes (Choi & Johnson, 2019; Palevich, 2012). Furthermore, the green product trend is rapidly spreading and developing into a subculture. Nowadays green products have become increasingly associated with prestige, stylishness, and luxury (Ahmad & Zhang, 2020). This changing preference on consumers' part has created a powerful incentive for companies to develop green strategies and integrate them into their goods and services (Chang et al., 2020). By taking these green initiatives, businesses can strengthen their brand and establish their reputation as environmentally responsible organizations (Nguyen et al., 2021; Situmorang et al., 2021).

Another concept related to green marketing is greenwashing. Greenwashing is the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound. Greenwashing can be placed at the intersection of two corporate characteristics: poor environmental performance and positive communication

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about environmental performance (Nguyen et al., 2019). Manufacturers of electronics products are among the organizations with the greatest ecological footprint, largely due to their constant demand for natural resources as well as the huge amount of industrial waste they discharge into the environment. Therefore, the greenwashing of electronics manufacturing processes can have detrimental impacts through the false perception of the products it creates in consumers (Grossman, 2007; Kahhat et al., 2009). Recently, Volkswagen's pollution emission scandal has aroused widespread public concern (Siano et al., 2017). Another remarkable instance of greenwashing is related to Walmart's statement of ethics. Walmart stated that they would only use renewable energy and sell sustainable products in order not to generate waste. However, Walmart's ambitious declarations fell short of reality. According to Sun and Zhang (2019), the characteristics of the corporate greenwashing actions concentrated in mass consumer goods (32.89%), energy (17.11%), chemicals (14.47%), electronics (10.5%), and medicines (9.21%), while other industries only account for 15.79% (Sun & Zhang, 2019). This not only shows that greenwashing has become one part of a growing trend in corporations' marketing approach but also reveals that the public is particularly concerned about greenwashing and its consequences. Therefore, the effects of greenwashing on consumers' green trust and their green purchase intentions deserve a systematic and in-depth exploration by researchers.

Although there has been extensive research into issues relevant to greenwashing, the author's analysis of current literature reveals that few studies to date focus on corporate greenwashing in Asia's developing countries (Yang et al., 2020). Furthermore, most of the previous research has focused on the causes, practices, and consequences of greenwashing for corporates (Du, 2015; Ferrero-Ferrero et al., 2021; Parguel et al., 2011), but with little focus on the consequences of greenwashing for consumers' environment and health (Mainardes et al., 2020), especially the impacts on Vietnam. When consumers perceive that companies carry out their environmentally sustainable practices, they may be more willing to buy the products of these companies, even at a higher price (Chen et al., 2018). However, if any greenwashing action of a certain business comes to light, instead of purchasing, consumers may even boycott that company's products (Obermiller et al., 2005). More importantly, the effect of greenwashing (GB) on green purchase intention (GI) is in fact complex and multi-dimensional, but there has been no research using integrative and comprehensive approaches to explain green consumption behavior in terms of complicated psychological processes. In particular, the paper investigates the mediating effects of green trust (GT) and green word-of-mouth (GM) on the relationship between GB and GI.

In recent years, Vietnam, with a population of more than 96.9 million people, is one of the countries struggling to maintain the delicate balance between environmental protection and sustainable development, especially in citizens' consumption (Nguyen et al., 2020; Worldometer, 2020). The increasing consumption activities lead to an increase in the amount of waste released into the environment. Especially, the manufacturing processes and commercial activities related to electronic devices have significantly spurred the growth in energy consumption and while devastating the environment (Bekaroo et al., 2016). Hence, the findings of the paper can potentially help Vietnamese consumers gain necessary insight into the concept of green products or identify truly green products from a vast array of products and services offered. Also, it can serve as a guide for companies to increase consumers' intentions to purchase green electronic devices.

The rest of this paper is organized as follows. In section 2, the literature review and hypothesis develoment are presented. The research methodology is described in Section 3. The empirical results are presented in section 4. Section 5 highlights the discussion. Finally, conclusions and further work are presented in Section 6.

2. Literature Review and Hypothesis Development

2.1. Environmental Health Efforts in the Electronic Industry

For the last few decades, unprecedented breakthroughs brought about by digital innovations and evolutions have ushered in a new era in the application of technologies in both business operations and households (Bekaroo et al., 2018). New technologies have offered enormous opportunities for boosting productivity, entertainment and communication options, etc. (Mitchell et al., 2003). Therefore, several electronic devices like television sets, coffee machines, computers, and mobile phones have become ubiquitous in households and business organizations. However, the growth in the consumption of electronic devices has been blamed as a major cause for increasing energy demand and putting a strain on the ecosystem. The main reason is from electricity generated by devices using non-renewable sources (e.g. coal or oil), while those sources release carbon dioxide, pollutants, and sulfur which is widely believed to be responsible for climate change (Murugesan, 2008). Furthermore, the rise in the consumption of electronic devices also causes the growth in e-waste problems, especially after their usage lifetime (Widmer et al., 2005), and e-waste is harmful to both the environment and human health if it is not properly managed (Nnorom et al., 2008). Keeping these issues in mind, it is imperative to take initiatives to reduce the risks

to human health, and minimize the adverse effects on the environment (Watson et al., 1996).

2.2. Theory of Reasoned Action (TRA)

This study employs TRA to gain an enrichment knowledge on the relationship between GB and consumers' purchase intentions of green electronic devices in Vietnam. Fishbein et al. (1975) developed the TRA to explain customer behavioral intentions (Fishbein & Ajzen, 1975). Fishbein et al. (1980) singled out intentions as the most reliable predictor of human behavior while also highlighting man's capability to rationally use available input in a systematic manner (Fishbein et al., 1980). With its exceptional predictability, TRA has been used to predict the intentions in green marketing areas, such as examining energy conservation, recycling behaviors (Davies et al., 2002), and green purchase behaviors (Ha & Janda, 2012; Sparks & Shepherd, 1992; Wahid et al., 2011).

By employing TRA, the paper investigates the mediation effects of GT and GM on GB and GI in the electronic industry in Vietnam. Beneke et al. (2012) suggested that consumers proceed through different psychological processes when purchasing products (Beneke et al., 2012). Green trust is the willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance (Chen & Chang, 2013). Moreover, GM may be instrumental in causing a favorable brand switch and thus expanding a company's customer base. However, many Vietnamese consumers are yet to fully comprehend the concept of green electronic devices or identify truly green electronic devices from a range of products offered by different firms. In addition, corporate greenwashing behavior is also a contributing factor to the green buying decision process (Nguyen et al., 2019). Even though a large number of companies regularly promote their eco-friendly images, currently there is no standard system put in place for processing a large amount of e-waste in Vietnam. Rather, the majority of e-waste goes through informal channels which are usually associated with higher risks to the environment and public health (Hai et al., 2017). Hence, it is necessary to study factors that may affect the extent to which consumers are willing/ready to purchase green electronic devices or adopt green choices/alternatives. To cope with the phenomenon of greenwashing, these are important indicators that need to be considered to create a trust for customers, improve their GM and enhance green consumption.

2.3. GB and GT

The greenwash research related to customers' perception of green products also pointed out the way toward how to increase their green trust in the prevalent environmental trends. Green trust is defined as the level of belief about a company's environmental performance (Chen, 2010). Meanwhile, Credence goods are goods whose qualities cannot be ascertained by consumers even after purchase (Ford et al., 1988), such as the safety or environmental friendliness of green electronic devices. However, green trust cannot be objectively determined, as it is understood as consumer perception regarding the environmental performance of a green product. Consumers often find it challenging to compare green electronic devices and regular electronic products as well as to evaluate how eco-marketing products address specific environmental problems (Woo, 2021). In this context, the effects of skyrocketing incidences of greenwashing may tremendously influence consumers' belief in green products (Delmas & Burbano, 2011). Greenwashing would confuse customers to assess e-products by delivering inadequate and/or unclear information (Horiuchi et al., 2009; Ramus & Montiel, 2005). If customers sense any deception by a firm's greenwashing, the companies' sustainability initiatives may be doubted and they may not maintain a long-term relationship with the company. Hence, greenwashing perceptions may reduce GB (Chen & Chang, 2013). In this regard, the study positions the following hypothesis:

H1: *GB has a negative effect on GT.*

2.4. GB and GM

Greenwashing is a strategic approach for firms to gain advantages over their rivals. If active efforts are made by companies to employ proper environmental management strategies and these efforts are effectively communicated with consumers, they can be perceived as actually spearheading environmental initiatives (Chen & Chang, 2013). In contrast, greenwashing is not only detrimental to the environment but also to consumers' health. Word-of-mouth refers to consumers' decision-making and consumption preferences which are likely influenced by other peoples' recommendations. According to Katz and Paul (1955) that word-of-mouth is seven times as effective as newspaper and magazine advertising, four times as successful as personal selling, and twice as valuable as radio advertising in influencing consumers (Katz & Paul, 1955). This study proposes a new concept: green word-of-mouth which refers to the degree to which a customer recommends a product or a brand to a friend, relative, or coworker based on its positive environmental messages. Meanwhile, businesses' greenwashing would negatively affect their consumers' attitudes towards their green marketing activities (Parguel et al., 2011). Therefore, this paper proposes the following hypothesis:

H2: *GB has a negative effect on GM.*

2.5. GB and GI

In the wake of green marketing in recent years, many companies employ greenwashing to promote a green, environmentally friendly, and healthy corporate image (Lyon & Maxwell, 2011). However, thanks to consumers' better understanding of the health and safety benefits associated with green products, GB causes them to be more skeptical and distrustful of companies' motives (Nguyen et al., 2019). Eventually, it leads to negative product judgments and renders consumers less inclined to buy green products (Nyilasy et al., 2014). The increasingly serious environmental issues in Vietnam recently gave rise to a heightened state of awareness on corporate greenwashing. Wang et al. (2019) have confirmed that a brand is influenced by both its own consumers and its competitors (Wang et al., 2019). Therefore, the greenwashing behavior associated with a certain brand can influence other green brands in the industry. GB can be a negative factor to green perceived quality and green satisfaction and it would impair consumer belief, leading to lower purchase intentions from greenwashing companies (Chen et al., 2014). Based on this rationale, the following hypothesis was suggested:

H3: *GB has a negative effect on GI.*

2.6. GT and GI

Trust is defined as the degree by which a party is confident that another party would conform to an expected behavior norm (Hart & Saunders, 1997). Green trust is especially important for firms considering stringent international environmental standards and widespread customer environmental activism (Mostafa, 2006). Past literature posits that customer trust is a determinant of consumer purchase intentions (Imaningsih et al., 2019; Schlosser et al., 2006). If sellers have successfully established buyers' trust, they would possess a higher level of purchase intentions (Cheung et al., 2015). Conversely, if customers' trust is limited or non-existent, green marketers will have greater difficulty convincing their customers of the excellent quality of their products and their customers may be mistrustful of their green claims (Chen & Chang, 2008). Thus, consumer trust is an antecedent of customer purchase intentions (Van der Heijden et al., 2003). Thus, this study proposes the following hypothesis:

H4: *GT has a positive effect on GI.*

2.7. GM and GI

Word-of-mouth communication is one of the cornerstones of marketing operations designed to influence consumer behavior (Peine et al., 2009). Word-of-mouth communication is defined as the communication among private parties about goods and services (Dichter, 1966; Singh, 1988; Westbrook, 1987). Word-of-mouth communication is widely believed to be more effective and credible than mass media advertising (Godes & Mayzlin, 2004; Herr et al., 1991). Therefore, numerous corporations use word-of-mouth as a part of their green marketing strategies to promote their products. Word-of-mouth communication can also be defined as the informal positive communication between consumers about goods and services (Harrison-Walker, 2001; Torres et al., 2012; Vlachos et al., 2009).

Word-of-mouth plays a significant role in the customer's making decision. Through the evaluation of pioneering customers, purchasers have more hints to assess products and also reduce their reluctance in the decision-making process (Wang et al., 2018). Generally, in the context of Vietnam's market, a large amount of information goes through informal channels, with low accuracy, causing a lot of confusion among consumers. Therefore, through many studies, the oral method of evaluating and commenting on product features with others has been proven to be an important means for consumers to evaluate the quality of the product or service (Wang et al., 2018). Furthermore, this type of word-of-mouth can alleviate customers' frustration or buyer's remorse as they already have sufficient grounds to decide whether to continue buying a product or using a service when reading or listening to reviews (Molinari et al., 2008; Tseng & Hung, 2013). Cheung et al. (2014) found that the greater the number of ratings and online reviews on products is, the more support consumers have for their purchase (Cheung et al., 2014). According to studies on green products, when information about green products is accessible and widespread among consumers, it not only increases people's awareness and responsibility for the environment but also promotes their buying intent (Zhang et al., 2018). Taken together, the above discussion suggests the following hypothesis:

H5: *GM has a positive effect on GI.*

2.8. The Mediating Role of GT and GM

Many developing countries are among the major contributors to climate change and air pollution owing to their rapid economic growth, large consumer base, and unsustainable consumption (Barbarossa & De Pelsmacker, 2016). In these countries, the business of multinational corporations is clearly characterized by "clear market opportunities", "low competitive pressure" and minimal greenwashing regulations (Yang et al., 2020). Thus, greenwashing has been thoroughly utilized by corporations to attract green consumers (Laufer, 2003; Parguel et al., 2011).

If this is the case, greenwashing has inadvertently become a tool to assist multinational corporations to gain unfair advantages. Greenwashing behavior of one brand even negatively affects the GI of the green products from other brands in the industry (Wang et al., 2019).

Obviously, consumers' insights into greenwashing are existent and their influence on positive beliefs and word-of-mouth is significant (Chen et al., 2014; Yang et al., 2020). Based on a review of related literature, we expect that GB will lead to not only GT but also GM, which, in turn, will have a negative effect on intentions to purchase green electronic devices. In addition, the study also employs TRA which provides a deep understanding of consumer's psychology and behaviors in the electronic industry in Vietnam, which has been facing environmental protection challenges and electronic device-related issues. Consequently, the study developed hypotheses:

H6: *GT mediates the relationship between GB and GI.*
H7: *GM mediates the relationship between GB and GI.*

This study proposes that GB negatively affects GI, while GT and GM mediate the relationship. The research framework is presented in Figure 1.

3. Research Methodology

3.1. Research Measures

The study employs a standard questionnaire with various items adopted from previous questionnaires. However, these items were modified to better reflect the nature of green electronic devices. The researcher evaluated questionnaire items based on their completeness, comprehensibility, and validity to determine their importance and suitability. After consulting the experts' opinions, the final questionnaires were approved. The questionnaire items were used in conjunction with a five-point Likert scaling system from 1 to 5 points, with 1 corresponding to strongly disagree and 5 corresponding to strongly agree.

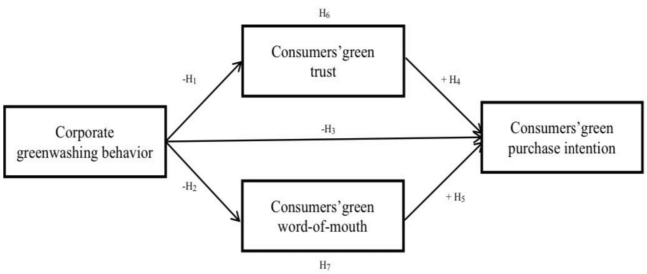

Figure 1: Research Framework

3.2. Sample and Procedure

The subject of this study is the consumer. The author employed the questionnaire to verify the hypotheses and research framework. The interview guide contained questions probing participants' experiences with purchasing green electronic devices, their perspectives on green electronic devices, GB; GT; GM; and GI in these schemes. Prior to being selected for these interviews, potential participants were screened for awareness of green electronic devices.

The initial part of the questionnaire contains a brief explanation of green electronic devices and a brief description of the green electronic devices market in Vietnam. Specifically, the increasing level of green electronic devices' consumption is accompanied by the greenwashing phenomenon. This has become one of the popular tricks for green electronic device corporates to gain an advantage over their competitors. Next, a multiple-choice question was presented. Respondents were asked "*Have you ever purchased green electronic devices before*?", using binary answer (Yes/No). If a respondent chooses to answer "No", he/she does not have to answer the next questions, if a "Yes" answer is given, he or she will continue with the interview process. The study refers to previous research to design questionnaire items. Prior to use for these official interviews, five experts and scholars were asked to modify the questionnaire in the first pretest. Subsequently, the researcher randomly distributed twenty questionnaires to check whether ambiguity existed and then repaired and perfected them. Therefore, the questionnaire of this study has been demonstrated to possess a high level of content validity. After the second pretest, the data collection procedure included an online survey (via Email, Zalo, and Wechat) which was conducted in Vietnam.

In general, this paper used structural equation modeling (SEM) analysis, and the smallest sample requirement was 100-150 (Ding et al., 1995). The research contains 17 sample variables and the initial sample contained 436 participants who completed the questionnaire. Due to missing data and potential outliers, the final effective sample was 308. 63.3% of the answers were men and 36.7% from women; 54.5% were under 30 years old, 33.1% were aged between 31 to 45 years old, 12.4% were aged 46 and over; 92.2% were graduated with bachelor/ master/ doctor degrees and 83.1% had a personal average monthly income from 10 million VND and over.

4. Empirical Results

Based on the responses of the participants from the questionnaires conducted, data analysis was conducted by using SEM in AMOS version 23, the main results of the research framework are below.

4.1. Measurement Model Results

From Table 1, the results of the means, standard deviations, and correlation matrix are used to evaluate the relationship between GB and other variables.

Before executing the SEM model simulation, it is necessary to examine the exploratory factor. Based on the analysis of Harman's single-factor, this study conducts experiments to check the presence of common method variance (CMV) (Podsakoff et al., 2003). There are four different factors with eigenvalues greater than 1.0 rather than a single factor as shown in Table 2. Moreover, the four factors together account for 68% of the total variance and the first factor is 26 % of the total variance. Therefore, no general factor emerges. According to the above two criteria, there is no presence of CMV in this study.

First, it examined the loadings of each constructs' individual items and then calculated each construct, all results are shown in Table 3. In social psychological research, according to Hair et al. (1995) Cronbach's coefficients with a value of over 0.7 is acceptable (Hair et al., 1995). Therefore, the Cronbach's coefficients of all constructs in this study have acceptable reliability. Furthermore, this study also tested the validity of the measurement and utilized the average variance extracted (AVE) to judge the discriminant validity of the measurement. To satisfy the requirements of the discriminant validity, the square root of a construct's AVE must be greater than the correlations between the construct and the other ones in the model (Fornell & Larcker, 1981). Table 3 shows that the results of the square roots of all constructs' AVEs are greater than the correlations among constructs. Hence, the measurement has good discriminant validity. Furthermore, each AVE is greater than 0.5, which means that the convergent validity was acceptable. Therefore, the reliability and validity analysis indicate that the measurements in the research have both good reliability and acceptable validity.

4.2. Structural Model Results

In addition, a goodness of fit test is shown in Figure 2 displays the results of the structural model in this study. According to Hair et al. (2010), the overall fit measures of the full model in the SEM demonstrates that the fit of the model is acceptable (Bagozzi & Yi, 1988; Hair et al., 2010). The values of GFI, NFI, and CFI are 0.929, 0.936, and 0.958, respectively, besides RMSEA is 0.048.

Adding more paths in this research framework would not make better the fit index. Thus, the coefficients of the path are significant and all hypotheses research H1, H2, H3, H4, and H5 are supported.

Furthermore, the study does not only verify the effect of GB on GI but also suggests how the process is triggered via GT and GM. To present confirmation of the mediating roles of GT and GM in the relationship between GB and GI, we perform the bootstrap confidence intervals method with 5,000 bootstrap samples (Preacher & Hayes, 2008). Table 4 shows indirect effects of GT and GM, in that relationship have coefficient values in the range of −0.29 and −0.26, which are in confidence intervals with p values less than 0.05. Thus, H6 and H7 are verified in the empirical study.

Table 1: Means, Standard Deviations and Correlations of The Constructs

Constructs	Mean	SD	GB	GT	GM	GI
Corporate greenwashing behavior (GB)	3.65	0.84	***0.85***			
Consumers'green trust (GT)	4.78	0.79	−0.31**	***0.87***		
Consumers'green word-of-mouth (GM)	4.40	0.81	−0.32*	0.45*	***0.82***	
Consumers'green purchase intentions (GI)	4.42	1.02	−0.26**	0.48*	0.46*	***0.86***

Note: M: Mean; S.D.: Standard deviation. The diagonal values mentioned in bold and italics represent the square root of AVE; *p < 0.05, **p < 0.01.

Table 2: Factor Analysis of This Study

Constructs	Number of Items	Number of Factors	APEV
Corporate greenwashing behavior	5	1	72.6
Consumers'green trust	4	1	75.3
Consumers'green word-of-mouth	4	1	72.7
Consumers'green purchase intentions	4	1	78.4

Note: APEV: Accumulation percentage of explained variance.

Table 3: The Items' Loadings (*λ*), The Cronbach's *α* Coefficients and AVEs

Constructs (References)		**Items**	***λ***	***α***	**AVE**
Corporate greenwashing behavior (GB) (Horiuchi et al., 2009; Laufer, 2003)	GB1	Green electronic devices mislead with words in their environmental features.	0.84	0.84	0.73
	GB2	Green electronic devices mislead with visuals or graphics in their environmental features.	0.87**		
	GB3	Green electronic devices possess a green claim that is vague or seemingly un-provable.	0.83**		
	GB4	Green electronic devices overstate or exaggerate how their green functionality is.	0.89**		
	GB5	Green electronic devices leave out or masks important information, making the green claim sound better than it is.	0.88		
Consumers'green trust (GT) (Cheung et al., 2015)	GT1	Green electronic devices' eco-friendly claims are commonly reliable.	0.82	0.88	0.75
	GT2	Green electronic devices fulfill commitments and promise environmental safety.	0.84**		
	GT3	The eco-friendly reputation of Green electronic devices is commonly trustworthy.	0.83**		
	GT4	Green electronic devices' eco-friendly concern meets my expectations.	0.88**		
Consumers'green word-of-mouth (GM) (Molinari et al., 2008)	GM1	Due to its environmental image, green electronic devices are highly recommended by others.	0.77	0.89	0.66
	GM2	Due to their environmental functionality, green electronic devices are positively recommended by others.	0.90**		
	GM3	Due to their eco-friendliness, green electronic devices have a good reputation.	0.87**		
	GM4	Due to their environmental performance, green electronic devices have received positive feedback.	0.71**		
Consumers'green purchase intentions (GI) (Ajzen & Fishbein, 1980; Chen & Chang, 2008; Mostafa, 2006; Taylor & Todd, 1995)	GI1	I will consider buying green electronic devices because they are less polluting in the coming times.	0.85	0.91	0.74
	GI2	I will consider switching to environmentally friendly green electronic devices for healthy reasons.	0.89**		
	GI3	I definitely want to purchase green electronic devices in near future.	0.91**		
	GI4	I would also recommend others to buy green electronic devices.	0.92**		

Note: *α* - Cronbach's; **$p < 0.01$.

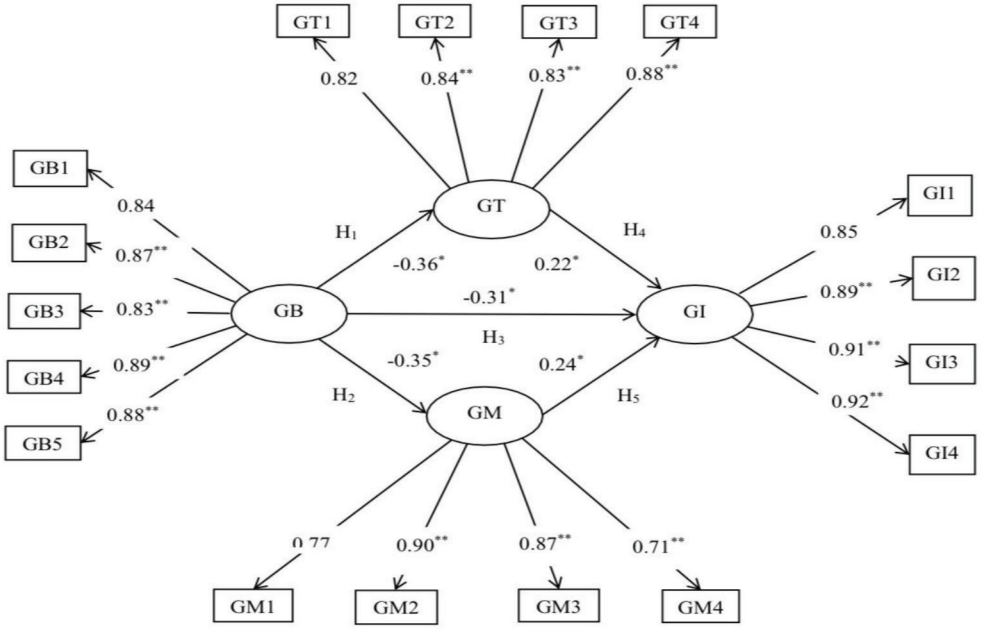

Figure 2: The Results of The Full Model

Note: Corporate greenwashing behavior (GB); Consumers'green trust (GT); Consumers'green word-of-mouth (GM); Consumers' green purchase intentions (GI); GFI: 0.929; NFI: 0.936; CFI: 0.958; RMSEA: 0.048; *p < 0.05, **p < 0.01.

Table 4: Direct, Indirect, and Total Effects Analysis

Path	Direct Effects	Indirect Effects	Bias-Corrected Confidence Intervals	
			Lower Confidence Level	Upper Confidence Level
GB GT GI	−0.32*	−0.29*	−0.71	−0.37
GB GM GI	−0.34*	−0.26*	−0.68	−0.35

Note: Corporate greenwashing behavior (GB); Consumers'green trust (GT); Consumers'green word-of-mouth (GM); Consumers' green purchase intentions (GI); *p < 0.05.

5. Discussion

While prior research has made significant contributions to the relationship between greenwashing and corporate social responsibility as well as consumer perceptions (Gatti et al., 2019; Hamid et al., 2020; Sial Muhammad et al., 2018), there has been no research employing an integrative and comprehensive approach to explain the mediating roles of GT and GM in the relationship between GB and GI. Several new initiatives have been proposed in the following paragraphs that aim to prevent greenwashing. First, it is undeniable that corporate image, green belief as well as green buying intent have been boosted thanks to green business strategies. However, there is still much debate about the potential effects of a rapid increase in green practices on environmental quality and GT towards most electronics manufacturers and suppliers. The paper is the first attempt to investigate the relationship between GB and GT, GM, and GI in Vietnam. The finding will help companies to better understand the complex psychological processes towards GI thereby establishing trust among customers, increasing positive word-of-mouth communication, and enhancing green consumption. Second, the study indicates how this mechanism is activated through GT and GM. The TRA model demonstrates the mediation effects of GT and GM on the relationship between GB and consumers' green electronic products purchase intentions. This theory explains customer behavioral intentions.

Customers do not attach importance to the ingenuity of the green products, as a result, companies with a

worthy GM are expected to win GT and increase GI (Zhang et al., 2018). In other words, an oral message or reviews of pioneering customers will become an important point of reference that directly leads to consumer's decisions when establishing their purchasing intention process. GM is considered more reliable information than communications initiated by companies, consequently, it has a strong influence on GI (Allsop et al., 2007). However, in Vietnam, many consumers do not understand the concept of green electronic devices, while companies regularly promote their eco-friendly images (Nguyen et al., 2017), while failing to put in place any management system that can control a large amount of e-waste, recover valuable materials as well as using green certification and labeling schemes (Hai et al., 2017). Thus, customers would distrust all green product ideas, which not only leads to reduced buying intentions in response to GB but also cause them to discourage others from purchasing green electronic products. It means that GM communications may lose effectiveness.

6. Conclusion

This study expands the research framework to focus on customers' perceptions of the green electronic device buying process in Vietnam. More specifically, buyers ponder the relationship between expected benefits, GT, the sharing of information or opinions about a product, GI and GB. This investigation shows that GB negatively affects GT, GM, and GI. Additionally, by employing the TRA this study verifies that GT and GM mediate the relationships between GB and GI.

This study has made important contributions to theories of greenwashing, green marketing, and consumer behavior. Although there is much attention paid to relevant issues of greenwashing behavior in past works, the empirical work on the impacts of greenwashing is extremely limited. This study uses the TRA to gain deeper insight into the relationship between GB and other variables. As such, it has important implications for managers as well as for scholars and students. Moreover, this study provides clear directions to the growing number of instances that may be considered greenwashing. In both popular and academic journalism, the word greenwashing is used to encompass all kinds of communications, which has unfortunately led to misunderstanding and accidentally generate misperception about an organization's environmental performance, practices, or products. However, it is believed that greenwashing will provide opportunities for interdisciplinary dialogues to create valuable new insights for practitioners in the field of green marketing, green brands, and business ethics.

The main policy implications are (1) The government should educate consumers, boost consumer demand for sustainable products, and improve environmental awareness. In the stage of building a green civilization, bringing the concept of green consumption into everyday life is an effective way to transform consumer behavior from passive to active. Furthermore, the government should establish a stricter regulatory regime on greenwashing-related issues to protect the legitimate rights and interests of consumers and gain more public attention. Finally, it will increase green trust or their intentions to purchase green products. More importantly, these measures also support companies to improve the positive word-of-mouth communication. (2) The government should improve the punitive measures and strengthen the control and assessment of local businesses to detect greenwashing practices. Moreover, to enhance the transparency of companies' environmental practices, a multistakeholder monitor system that includes the government and the public should be set up to monitor greenwashing. (3) The government should build a culture emphasizing general social responsibility so that a consensus on the overall interests of society will be reached. Hence, companies have to be liable to a greater proportion of the psychological loss caused by greenwashing. Eventually, this will reduce the cost to the government.

Similar to other research, our research has its share of limitations and opportunities for future research. First, this study investigated green electronic devices in Vietnam which limits its generalizability. Besides, the nature of the current research might render it prone to social desirability bias. This might be an interesting subject for future studies. Second, the paper investigated a theoretical model that can help corporations boosting GI significantly in the condition that there is a large number of greenwashing cases via GT and GM. Future works could evaluate the potential influences on business aspects such as trademark, product type, and other topics.

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