

# Impact of Firms' Greenwashing Practices on Customer Green Trust and Green Brand Attachment: Pakistan's Home Appliances Consumers' Perspective

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## Abstract

*The usage of green products has increased dramatically in the recent decade. The compelling reason behind this behavioral change is the consumer understanding of climate change and its negative impact on the planet. However, firms' engagement in greenwashing is causing a detrimental impact on this green cause, and it is leading customers to disbelieve the environmental claims of the firms. This study investigates the impact of firms' greenwashing practices on consumer green trust and green brand attachment. Moreover, it examines the intermediation factors of green perceived risk, green perceived value, green confusion, and green brand image. This study follows a quantitative research design and deductive approach. Data was collected from the home appliances consumers through an online and in-person survey questionnaire. Respondents were contacted by using the non-probability sampling technique and a sample of 330 valid responses was used to analyze the data. Confirmatory Factor Analysis was used to test the reliability of the variables and Structural Equation Modeling to test the nine hypotheses that were proposed in this study. The findings suggest that Greenwashing negatively affects Green Perceived Value (GPV) and GPV positively affects Green Trust (GT). GT showed a positive impact on Green Brand Attachment (GBA). Hence, it is proved that greenwashing may reduce the trust and Brand Attachment of the consumers with the green product. Greenwashing has a positive impact on Green Confusion and a negative impact on Green Brand Image. These findings augment the existing knowledge on the relationship between greenwashing and green brand attachment. It is suggested that if organizations want to increase consumers' green trust and green brand attachment, they must refrain from greenwashing. Green brand trust is a significant driver of the relationship-building process and organizations should strive to build it by furnishing real green values to the consumers, thus it will result in increasing the market share of the companies.*

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## 1. Introduction

Nowadays industrial activities have amplified to the point that their negative effect on the natural environment is evident, causing society to pay higher attention to environmental issues and sustainability (Mahmood et al., 2020; Hameed et al., 2022). Carbon dioxide emission in the atmosphere is one of the major causes of global warming and by minimizing energy consumption the risk of global warming can be reduced (Tan et al., 2017). In view of this increasing pressure of environmental pollution and global warming, the global think-tank emphasizes consumers reduce energy consumption and has also provided business enterprises an opportunity to adopt a “green” strategy (Uyar et al., 2020).

A rapid hike has been observed in energy consumption in the past few decades and residential consumers are one of the substantial contributors (Waris & Hameed, 2020). In Pakistan, almost 85% of total energy consumption is consumed by households (Ali et al., 2019). It is believed that consumers’ current energy consumption patterns need to be revisited and sensible use of energy is required, whether by adopting collaborative consumption (Butt et al., 2021) or by using energy-efficient home appliances. Air conditioners, washing machines, bulbs, iron, microwave oven, refrigerator, televisions, and other home appliances contribute hugely to greenhouse gas emissions (Hua & Wang, 2019). The exponential increase in energy consumption is due to the heavy purchase of appliances by the growing middle-class (State bank of Pakistan, 2018). The use of energy-efficient appliances may help to reduce the energy consumption of energy and carbon emissions in the environment (Waris & Hameed, 2021).

This scenario encourages the organizations to manufacture sustainable products to help the environment but some organizations deceive consumers by providing misleading claims about their environmental practices (Butt et al., 2021). Hence, the organizations that do not have enough competencies to undertake green marketing strategies, end up making false claims about their products to gain prospective benefits, without bearing any expenses. Thus, many organizations exhibit themselves as green firms in spite of not being green (Siano et al., 2017), by involving them in greenwashing practices. According to Halverson (2018), greenwashing is an approach where firms promote the green features of their products and mislead consumers by making false claims to attract them (Hameed et al., 2021).

Nowadays greenwashing is becoming a common practice, which is increasing skepticism in consumers towards organizations that take benefit from the green trend (Nguyen et al., 2019). This skepticism questions the reliability of firms' green marketing claims, which gives rise to confusion among the consumers, as they are uncertain about the claim's authenticity. This uncertainty leads to a negative interpretation of the product by the consumers (Wood, 2015). The lack of trust in environmental claims generates a higher risk in buying decisions which result in more uncertainty (Lin & Niu, 2018). Greenwashing does not impact consumers' confusion and uncertainty only but may also trigger a sense of danger among consumers, precipitating green perceived risk which has a negative impact on organizational credibility (Tarabieh, 2021).

This suggests that green perceived risk influences consumers' evaluation process toward green products or services (Wang, 2017), when the product falls short of meeting the required standard, consumers appraise it negatively resulting decline in product perceived value (Syarifuddin & Alamsyah, 2017). It has been observed that when consumers perceived a brand as being involved in greenwashing practices, the consumer's doubt about the firm's products is increased which ultimately hurts the green image of the firm (Butt et al., 2021; Chen et al., 2020), resulting decrease in consumers green brand trust (More, 2019).

It has been reported that consumers show a positive attitude towards trusted brands, showing higher commitment to that brand (Yang & Zhao, 2019). Green Brand Attachment is defined as an emotional bond as reflected in the consumers' feelings of passion, affection, and connection with the eco-friendly attributes of the brand (Hussain & Waheed, 2016). Consumer brand attachment has been found positively related to an individual's purchase intention of the product (Kamiya et al., 2018). However, when consumers are unable to establish a long-term relationship with firms due to greenwashing activities of the firms, it leads to a decrease in consumers' brand attachment. Consequently, all environmental efforts made by the firms would not be trusted by consumers, and the dream of moving towards sustainability would be collapsed (Chen et al., 2020).

A lot of studies have been conducted to study the household consumer's energy consumption pattern in developed economies such as China (Li et al., 2019), Malaysia (Tan et al., 2017), Germany (Mills & Schleich, 2013), the UK (Pothitou et al., 2016). Whereas in developing countries, research on household energy-saving behavior is limited. It is expected that electricity demand would rise by 30% by 2040 (International Energy Agency, 2017). In Pakistan, to the best of our knowledge, no quantitative research work has been done which examines the relationship between greenwashing, green trust, and green brand attachment incorporating the roles of green perceived values, green confusion, green perceived risk, and green brand image. Nearly the majority of the past research has been conducted in western countries and therefore this study is an effort to partly fill this gap.

The objective of this study is to understand how greenwashing practices are detonating the green cause and this study would help the marketers, firms, consumers, and policy-makers to understand this. It is expected that this study would facilitate people understanding that greenwashing has a higher societal cost than other deceptive marketing practices. Greenwashing not only affects consumers/firms but also harms the overall environment and eventually threatens the progress towards a greener marketplace.

The next section of the paper presents the literature review and conceptual framework proposed in this study. The third section presents the methodology adopted followed by statistical analysis. The paper then progresses through the discussion of the findings, implications, limitations, and conclusion.

## **2. Literature Review**

### **2.1 *Green Marketing and Greenwashing***

Currently, firms are paying more attention to environmental sustainability on the global landscape. Therefore, the promotion of brand green features has become a common element in advertising messages (Chang, 2011). Green marketing is defined as the efforts of a firm to allotting, endorsing, and designing products that will not harm the environment by any means (Butt, 2017; Sarkar, 2012). Green messages should be precise, exact, and clear. However, many advertising claims to mention brand green features are vague and deceiving, leading toward greenwashing. Greenwashing is an approach where firms try to develop a positive public image by making false environmental claims (Butt et al., 2021; Urbański, 2020). This indicates that the products or services of an organization may be perceived as green and sustainable products, although they are actually not. Greenwashing can also be defined as making misleading claims about the environmentally friendly characteristic of the products/services to hide their damaging material to the environment (Topal et al., 2021). Recent literature on greenwashing suggests that it does not only affect the economic performance negatively and distort the reputations of organizations but also negatively impacts consumers and society at large (Szabo & Webster, 2021). Since most organizations are unable to clarify how their products/services serve environmental sustainability, they are likely to be looked upon with mistrust and suspicion (Nguyen et al., 2019). According to Cone Communications (2012), nearly 44% of consumers do not trust green claims made by the organizations, and 77% are even willing to boycott the organizations that make green claims. Additionally, consumers' perceptions of greenwashing have a negative impact on green purchase intentions and WOM (Zhang et al., 2018) and therefore, the consequences of greenwashing are precarious. Hence, greenwashing is eroding the customers' trust in green marketing and possibly would damage the overall green cause (Nyilasy et al., 2014).

## 2.2 *Greenwashing and Green Trust*

Greenwashing is an obstacle to green marketing strategies because it has the capacity to make people doubtful about green products (Chen & Chang, 2013). Furthermore, suspicion and uncertainty often arise from a firm's greenwashing practices (Self et al., 2010). The marketers' and manufacturers' efforts toward sustainability will get hampered due to the distrust of the consumers (Gillespie, 2008). According to Chen (2010) Green Trust (GT) is a consumer's willingness to depend on a product, service, or brand based on the belief or expectation resulting from its reliability, and capability regarding its environmental performance. Trust is a belief that can be damaged when a consumer notices that all advertising messages are similar or that they have purchased deceitful products mistakenly (Marquis et al., 2016). If the brand fulfills the expectation and is committed to protecting the environment, trust can be secure from their consumers, as it will make them more inclined towards buying that brand (Sharma & Paudel, 2018; Amin & Tarun, 2020). Studies have shown that increased green trust of consumers leads to higher customer loyalty and green purchase intention (Martínez, 2015; Badar et al., 2021). Hence, consumer trust is an essential determinant of long-term consumer behavior (Alshura & Zabadi, 2016).

## 2.3 *Green Perceived Value*

Green Perceived Value (GPV) is the consumers' appraisal of the benefits of a product/service concerning what is received and what is given based on the consumer's ecological desires, sustainable expectations, and green needs (Chen & Chang, 2012). Consumers evaluate a firm's ethical commitment to environmental, social, and ethical issues when developing a perception of a firm and its products (Lin & Niu, 2018). When relevant and accurate information is provided to the consumers, this perceived green transparency increases the brand's green perceived value. In a study, Chen (2013) revealed that GPV is directly correlated with positive WOM and loyalty. Greenwashing dampens consumers' confidence in green brands and lowers the brand's green perceived value (Caruana et al., 2016; Lin & Niu, 2018). Therefore, it is argued that greenwashing negatively influences the brand green perceived value and proposes the following hypothesis:

*H1: Greenwashing has a negative impact on brand Green Perceived Value.*

Perceived value has a strong influence on customer trust (Kim et al., 2008) and in a study, Chen and Chang (2012) reported that green perceived value facilitates consumer's green trust in the product. A positive relationship has been found between green perceived value and green trust, as the higher perceived value would lead to higher consumer confidence in the product (Eid, 2011). Thus, this study argues that green perceived value would positively affect green trust and proposes the following hypothesis:

*H2: Green perceived value has a positive impact on green trust.*

## **2.4 Green Confusion**

Turnbull et al. (2000) defined Green Consumer Confusion (GCC) as “consumer failure to develop a correct understanding of environmental features of a product or service during the information processing system”. In a study, consumers showed their concern that sometimes they are deceived by firms by not fulfilling their green claims (Chen et al., 2020). The more consumers try to process information, the greater the chance that they are overloaded with information creating confusion in consumers’ minds about green claims (Lyon & Maxwell, 2011). Green confusion has been found to have a positive correlation with dissatisfaction (Moon et al., 2018). Consumers are overloaded with misleading information through greenwashing, making it more difficult for consumers to evaluate products (Chen & Chang, 2013). This study proposes that greenwash would positively affect consumer green confusion and the following hypothesis is proposed.

*H3: Greenwashing has a positive impact on Green Confusion*

Green trust favorably affects the green claims (Hameed et al., 2018). The consumers’ failure to develop an accurate understanding of the product’s ecological features creates confusion. When consumers feel confused about a product, they delay their purchasing decisions and do not really trust the firm (Tarabieh, 2021). Confused consumers are more cautious about the industries that display ambiguous and inconsistent details about the green product (Kac et al., 2016). In a study, Chen and Chang (2013) stated that greenwashing promotes consumer confusion, which results in lower consumer green trust regarding a firm’s environmental claims. Similarly, another study found that green confusion has a positive correlation with distrust (Moon et al., 2018). This study, therefore, provides the following hypothesis:

*H4: Green Confusion has a negative impact on green trust*

## **2.5 Green Perceived Risk**

According to Chen and Chang (2013) Green, Perceived Risk (GPR) is defined as the expectation of negative environmental consequences associated with purchase behavior. Consumers perceive products as riskier when they have better knowledge of uncertainty or undesirable consequences associated with the brand, which results in lower purchase intention (Mwencha et al., 2014). When consumers have no trust in a firm’s green claims, they perceive a higher risk in its environmental performance (Szabo & Webster, 2021). Green perceived risk has been classified as a major barrier to buying green electronics products (Chen & Chang, 2013). Earlier research indicated a positive relationship between greenwash and green perceived risk (Chang & Chen, 2008; Dhewi et al., 2018). When the reliability of

green claims is not ascertained by consumers, greenwashing would create a higher consumer perceived risk for environmental claims (Gillespie, 2008). Thus, this study argues that greenwash would positively affect green perceived risk and proposes the following hypothesis:

*H5: Greenwashing has a positive impact on green perceived risk*

Green Perceived Risk (GPR) is influenced by ambiguity and undesirable consequences of a product. It has been identified that consumers' trust level in a product can be influenced by green perceived risk (Rahardjo, 2015). Green Trust (GT) of the consumer in connection to the environment means the reliability, trustworthiness and standard performance of the product (Hameed & Waris, 2018). Consumers would not trust the product or brand if they feel that there is a risk involved in using it. In a study, it was stated that an increase in consumer trust is usually followed by a decrease in perceived risk (Zulfanizy & Wahyono, 2019). As consumer perception of greenwashing increases, it creates uncertainty in consumer's minds, which leads to an increase in green perceived risk, thus decreasing green trust (Kinnunen, 2020). Hence, this study argues that green perceived risk would negatively affect green trust and proposes the following hypothesis:

*H6: Green Perceived Risk has a negative impact on Green Trust*

## **2.6 Green Brand Image**

According to Deniz and Onder (2017), Green Brand Image (GBI) involves symbolic meanings related to specific features of the brand and is defined as a picture of a brand in the consumer's mind that is linked to an offering. A strong brand image creates a healthier brand message and a product with a greater brand image is likely related to better quality and higher values (Chen et al., 2017). The green brand image of a product facilitates consumers to express their self-identities and further influences one's brand attitude (Jeong et al., 2014), purchasing frequency, and brand loyalty (Lin & Niu, 2018). Consumers tend to perceive the higher quality and a positive green brand image of a firm when it claims to offer eco-friendly products (Nagar, 2015). The green brand image becomes increasingly important, especially in an environment where consumers develop skeptical attitudes towards green products or services due to greenwash problems and the resultant negative green image (Huang et al., 2014). A study conducted by Chen et al. (2020) indicates that greenwashing is negatively related to the green image. Moreover, greenwashing was also found to negatively impact on green brand image of electronic products (Chen et al., 2016). Thus, this study argues that greenwash would negatively affect green brand image and proposes the following hypothesis:

*H7: Greenwashing has a negative impact on green brand image*

Green Brand Image (GBI) has a direct relationship with consumers’ purchase intention. Consumers who showed higher purchase intention were found to have a positive brand image, resulting in higher brand trust (More, 2019). In addition, green brand image has a positive effect on consumer trust because it can diminish the risk perceived by consumers and simultaneously increase the likelihood of purchasing the product (Deniz & Onder, 2017). According to the argument above, as the green brand image increases, the credibility of the product regarding its environmental performance also increases (Bashir et al., 2020). A study conducted by Chen (2010) found that green brand image and green trust are positively related and therefore investing resources to increase green brand image is helpful to enhance green trust. Similar findings were also reported by Ha (2020) and Wu and Liu (2022).

*H8*: Green brand image has a positive impact on green trust.

### 2.7 Green Brand Attachment

According to Malar et al. (2011) Green Brand Attachment (GBA) is defined as an emotional bond reflected in the consumers feeling of passion, affection, and connection with the environmentally friendly functions and attributes of the brand. The more a consumer is concerned about the sustainability of the environment, the stronger will be the feelings. Strong feelings of connection persuade a consumer to maintain proximity with the brand and make the attachment stronger (Hussain & Waheed, 2016). GBA is directly related to green trust; as the consumers develop strong attachments to the brand when they believe it can be relied upon to constantly provide its services (Yang & Zhao, 2019). Trust entails that consumers are highly likely to assess the item favorably. A study conducted by Kang et al. (2017) indicated that trust has been found to be a determinant of strong brand attachment in the hospitality industry. Hence, this study argues that green trust would positively affect green brand attachment and proposes the following hypothesis:

*H9*: Green Trust has a positive impact on Green Brand Attachment

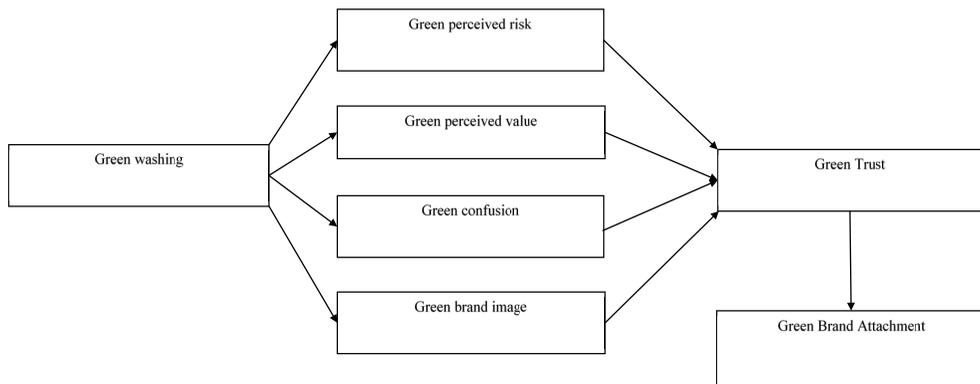


Figure 1: Hypothesized Model

### 3. Methodology

#### 3.1 Sample design & Participants

This study is quantitative in nature following a deductive approach with an objective to examine the factors having an impact on consumers' green brand attachment. The research concentrated on Pakistani consumers who have a purchasing history or prospective buyers of green home appliances. Since there was no available access to a sampling framework or records to select individuals randomly, therefore the data was collected by using a non-probability-based convenient sampling technique. The respondents of the study were urban consumers as because of their exposure and education these consumers can respond easily to the survey (Prakash & Pathak, 2017; Taufique & Vaithianathan, 2018).

The data was collected through structured questionnaires and the respondents were approached through different online platforms, i.e, SMS, WhatsApp, social interactive groups, and websites. A total of 600 surveys were circulated and after multiple reminders, 365 responses were received, showing approx. 61% response rate. After screening the data set, 330 valid responses were used for further analysis.

The questionnaire was divided into two parts. The first part considered demographic variables including gender, age, educational level, income level, and marital status while the second part consisted of questions about the constructs in the proposed model.

Table 1  
*Demographic details of the participants*

		Frequency (f)	Percentage (%)
<b>Gender</b>	Male	176	53.3
	Female	154	46.7
<b>Age group (years)</b>	18-25	110	33.3
	25-35	138	41.8
	35-45	62	18.8
	45-60	18	5.5
	60 above	2	.6
<b>Educational level</b>	Undergraduate	31	9.4
	Graduate	168	50.9
	Postgraduate	121	36.7
	PhD	10	3.0
<b>Marital status</b>	Single	213	64.5
	Married	117	35.5
<b>Income group (in thousands)</b>	<35K	19	5.7
	35K-50K	34	10.3
	50K-75K	111	33.6
	75K-100K	122	36.9
	100K-150K	31	9.3
	>150K	13	3.9

Source: Data Analysis of this Study

In data, 53.3% of respondents were male, while 46.7% were female. Almost 75% of respondents were aged between 18 to 35 years. Individuals holding bachelor's or master's degrees participated with the highest frequency. Almost half of the respondents were earning between Rs. 50K/month to 100K/month as mentioned in Table 1.

### **3.2 Measures**

An instrument was developed by adopting items from previous measurement scales. The items of all seven constructs were assessed by a Likert scale of seven points ranging from 'strongly disagree' to 'strongly agree'. GW was measured using Chen and Chang (2013) scale, having 5 items. GPR and GPV were measured through Chen and Chang (2012) scale having 5 items for both constructs. Chen and Chang (2010) five items scales were used to measure GT and GBI, while GC was measured by five items were adapted from Aji and Sutikno (2015). Four items from Park et al. (2010) and Thomson et al. (2005) were used to measure green brand attachment.

### **3.3 Method of Analysis**

A dual-step procedure was carried out to analyze the data (Anderson & Gerbing, 1988). Confirmatory Factor Analysis (CFA) was applied in the preliminary phase to test the reliability of the hypothesized variables. The second step involved the application of Structural Equation Modeling (SEM) to test the hypotheses using Amos 21.

## **4. Results**

### **4.1 Measurement model**

The data was run on AMOS - 23 to employ structural equation modeling technique (SEM). Initially, the data was used to develop a CFA model to report the factor loading of all the constructs used in the study and check the model fitness. The model fitness was checked by using different indices; the values are  $\chi^2$ ; CMIN/df=2.868;  $p < .000$ ; CFI=.909; TLI=.901; RMSEA=.075. According to Hu and Bentler (1999) criteria, all the values showed that the model fit is good and well above the accepted values. Items showing factor loading  $< 0.5$  were removed to ensure the internal reliability of the indicators as indicated by Bagozzi and Yi (1991).

Table 2  
*Internal reliability and Convergent validity*

Construct	Indicator	M	SD	Factor loading >0.5	CR >0.7	$\alpha$ >0.7	AVE >0.5
GWS	GWS 1	3.65	1.71	.799	0.916	.905	0.688
	GWS 2	3.86	1.49	.829			
	GWS 3	3.86	1.64	.901			
	GWS 4	4.05	1.81	.836			
GPVL	GPVL 1	4.35	1.65	.786	0.903	.877	0.652
	GPVL 2	4.69	1.54	.835			
	GPVL 3	4.56	1.60	.742			
	GPVL 4	4.53	1.59	.833			
GCF	GCF 1	4.03	1.82	.807	0.878	.816	0.592
	GCF 2	4.29	1.53	.728			
	GCF 3	4.22	1.89	.689			
	GCF5	4.32	1.69	.688			
GPRK	GPRK 3	3.71	1.76	.753	0.878	.832	0.591
	GPRK 4	3.54	1.75	.807			
	GPRK 5	3.52	1.78	.813			
GBIM	GBIM 1	4.65	1.72	.809	0.914	.882	0.680
	GBIM 2	4.71	1.59	.779			
	GBIM 3	4.69	1.58	.713			
	GBIM 4	4.80	1.59	.763			
	GBIM 5	4.78	1.70	.751			
GTR	GTR 1	4.27	1.57	.681	0.914	.881	0.679
	GTR 2	4.47	1.50	.765			
	GTR 3	4.45	1.48	.775			
	GTR 4	4.64	1.61	.780			
	GTR 5	4.60	1.56	.821			
GBAT	GBAT 1	4.39	1.70	.843	0.942	.919	0.804
	GBAT 2	4.75	1.71	.880			
	GBAT 3	4.51	1.73	.843			
	GBAT 4	4.77	1.74	.908			

Note: GWS=green washing, GPVL=green perceived value, GCF=green confusion, GPRK=green perceived risk, GBIM=green brand image, GTR=green trust, GBAT=green brand attachment

The validity of the constructs was checked by composite reliability (CR) and average variance extract (AVE) values. All CR coefficients were from 0.87 to 0.94 greater than 0.7, as recommended by Hair et al. (2010). To evaluate the convergent validity of all latent constructs AVE values were calculated and all the values were found greater than the suggested cutoff value of 0.5 (Hair et al., 2010). Moreover, the overall reliability of the construct was confirmed through Cronbach's Alpha ( $\alpha$ ), where all the constructs exhibited coefficient values greater than 0.7, showing an excellent level of reliability (Nunnally, 1978). All the results for CR,  $\alpha$ , and AVE are shown in Table 2.

Table 3  
*Discriminant validity (Fornell & Larcker, 1981)*

	<b>GBIM</b>	<b>GBAT</b>	<b>GTR</b>	<b>GCF</b>	<b>GPRK</b>	<b>GPVL</b>	<b>GWS</b>
GBIM	0.824						
GBAT	0.716	0.897					
GTR	0.705	0.759	0.824				
GCF	-0.111	-0.131	-0.029	0.77			
GPRK	-0.148	-0.219	-0.162	0.596	0.769		
GPVL	0.703	0.658	0.806	-0.032	-0.143	0.808	
GWS	-0.116	-0.192	-0.246	0.533	0.421	-0.212	0.83

Note: GWS=green washing, GPVL=green perceived value, GCF=green confusion, GPRK=green perceived risk, GBIM=green brand image, GTR=green trust, GBAT=green brand attachment

After ascertaining internal consistency/reliability and convergent validity, the next step was to measure discriminant validity. The discriminant validity was measured using Fornell and Larcker (1981) criterion. Correlation among the construct was less than the square root of Construct AVE value as shown in Table 3, displaying high discriminant validity.

#### 4.2 *Structural Model: Hypothesis testing*

Later, hypotheses were checked by running the structural model with 2000 bootstrap (Hair et al., 2012). The results of all nine hypotheses are summarized in Table 4. The findings suggest that all the hypotheses were accepted, except H7. The first hypothesis, greenwashing has a negative impact on green perceived value has been accepted ( $\beta = -.296$ ;  $P < .05$ ) and is consistent with previous research (Syarifuddin & Alamsyah, 2017; Caruana et al., 2016). This suggests that the use of deceptive marketing techniques will substantially decrease the green perceived value by the consumers resulting in lower purchase probability. Therefore, when a consumer doubts a firm is involved in greenwashing, he starts not believing the environmental claims of a brand resulting low perceived value of that brand.

It was found that the second hypothesis of the study stating that greenwashing has a positive impact on green perceived risk has been accepted ( $\beta = .387$ ;  $P < .05$ ) and concurs with the findings of Chen and Chang (2013) and Kinnunen (2020). This implies that whenever consumers perceive any firm involved in greenwashing practices, they become doubtful about the product's green attributes and experience higher green perceived risk. The next hypothesis that greenwashing has a positive impact on green confusion has been accepted ( $\beta = .646$ ;  $P < .05$ ). Literature also provides support for this finding (Kinnunen, 2020; Polonsky et al., 2010). This suggests that if a firm greenwashes about any green attribute, it creates confusion in consumers' minds about all the green claims of the firm. This makes it difficult

for the consumers to evaluate the actual greenness of the product. The fourth hypothesis that greenwashing has a negative impact on the green brand image has been accepted ( $\beta = -.141$ ;  $P < .05$ ), validating the findings of Chen et al. (2020) and More (2019). This infers that firm involvement in greenwashing practices damages the firm's green brand image and creates doubt about the firm's green marketing activities.

The fifth hypothesis that green perceived risk has a negative impact on green trust has been accepted ( $\beta = -.099$ ;  $P < .05$ ), supporting the previous findings (Chen & Chang, 2012; Gilliespie, 2008). This advocates that as consumers perceived higher green risk about a brand, they believe that the product offered to them might not have the expected environmental benefits. Therefore, consumers are unwilling to rely on the firm, showing lower trust in firm's product. The sixth hypothesis that green perceived value has a positive impact on green trust has been accepted ( $\beta = .540$ ;  $P < .05$ ) and concurs with the findings of previous studies (Chen, 2013; Lam et al., 2016). This concludes that when the consumer perceives a specific product with a higher green value, they will tend to trust the product's environmental attributes. The seventh hypothesis that green confusion has a negative impact on green trust has been rejected ( $\beta = .047$ ;  $P > .05$ ) and the relationship was found insignificant. It can be concluded that the green confusion of the consumer has no significant impact on green trust. The findings of the research are contrary to previous research findings of Avcilar and Demirgunes (2017), acknowledging the impact of consumers' green confusion on green trust. It gives an insight that in Pakistan's context even if the consumer is confused about the green attributes of the product, other factors would not let the consumer have a trust deficit in the brand.

Table 4  
*SEM estimations & test of hypotheses*

Hypothesis	Path	Estimate	S. E	C.R	P-value	Result
H1	GWS $\longrightarrow$ GPVL	-.269	.058	-4.639	0.000	Supported
H2	GWS $\longrightarrow$ GPRK	.387	.055	7.063	0.000	Supported
H3	GWS $\longrightarrow$ GCF	.646	.067	9.593	0.000	Supported
H4	GWS $\longrightarrow$ GBIM	-.141	.061	-2.307	0.021	Supported
H5	GPRK $\longrightarrow$ GTR	-.099	.039	-2.549	0.011	Supported
H6	GPVL $\longrightarrow$ GTR	.540	.051	10.562	0.000	Supported
H7	GCF $\longrightarrow$ GTR	.047	.028	1.684	0.092	Not supported
H8	GBIM $\longrightarrow$ GTR	.302	.036	8.497	0.000	Supported
H9	GTR $\longrightarrow$ GBAT	1.061	.101	10.501	0.000	Supported

Note: GWS=green washing, GPVL=green perceived value, GCF=green confusion, GPRK=green perceived risk, GBIM=green brand image, GTR=green trust, GBAT=green brand attachment

The eight hypotheses that green brand image has a positive impact on green trust have been accepted ( $\beta = .302$ ;  $P < .05$ ) confirming the findings of Shah et al. (2012) and Wu et al. (2011). This suggests that the brand having a higher green image would be trusted easily, resulting in higher sales for a brand.

The ninth hypothesis that green trust has a positive impact on green brand attachment has been accepted ( $\beta = 1.061$ ;  $P < .05$ ). Prior literature supports this finding (Yang & Zhao, 2019; Alex & Joseph, 2012). It proposes that when a brand is trusted by consumers, a positive attitude is exhibited towards that brand, showing higher attachment to the brand.

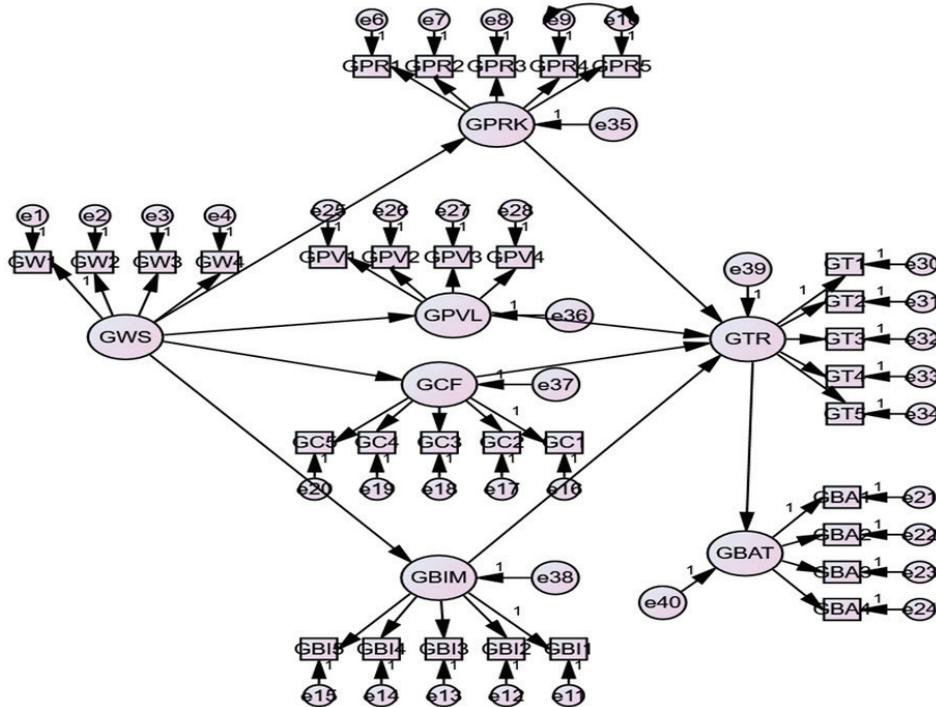


Figure 2: AMOS output

### 5. Discussions & Conclusion

Environmental degradation has been extensively debated by academics and practitioners; including their solutions in the form of green products. It is a very hot issue of this era and it can only be addressed by reducing energy consumption and producing recyclable products. In this regard, the aim of this study was to examine the consequences of greenwashing on green brand attachment. Previous research has reported that greenwashing has a negative impact on consumer green trust (Sharma & Paudel, 2018; Amin & Tarun, 2020) and green brand attachment (Hussain & Waheed, 2016) validating the findings of this research.

In today's world, where consumers are showing higher environmental concerns, they are also concerned about the green products' reliability, durability, and performance. In a competitive market, firms are trying to win higher market share and they are sometimes taking the help of greenwashing activities. The firm's indulgence in greenwashing activities is eliminating the consumer's green trust through higher green perceived risk and green confusion. It also diminishes the brand's green perceived value and green image.

It is derived from the study that in relationship building with customers, green brand trust is a most substantial driver. This indicates that green brand trust positively influences consumer-brand relationships and accentuates the need of adopting green marketing practices. It has been found that lower green perceived risk helps to create consumers' trust in environmentally friendly brands (Rahardjo, 2015; Zulfanizy & Wahyono, 2019). Similarly, higher green brand value and green brand image increase consumers' trust (Wu & Liu, 2022; More, 2019) and that leads to green brand attachment (Yang & Zhao, 2019; Kang et al., 2017) consistent with the findings of this research.

This emphasizes the organizations to put their efforts to produce environmentally friendly brands to establish strong and long-term relations with consumers. Additionally, the present research has also found that consumers consider green brands as a necessary part of their lives. It helps them feel important by owning eco-friendly brands in this era of environmentalism. This highlights the environmental consciousness of consumers and urges the governments and environmental protection agencies to persuade manufacturers toward green marketing practices. The green brand image helps to retain loyal consumers as the findings suggest that green brand image is significantly associated with green brand trust and ultimately green brand attachment. This indicates that a considerable level of green brand image and its proper positioning is necessary for the organizations to establish stronger and long-term relationships with consumers.

### **5.1 Implications**

The findings of the present research work would help the marketing professionals/organizations to improve green brand value and green brand image and build long-lasting relationships with environmentally conscious consumers. All the relationship-building processes discussed above may produce consumption patterns that can benefit the ecology of our planet and may lead toward environmental sustainability. It can be resolved by lowering green perceived risk and increasing the perceived value and image of the product; this will increase the use of green brands and it can play a substantial role to establish green brand attachment. Developed countries have framed different regulations to control the veils of greenwashing. Now it is essential for developing economies to make laws to stop firms from greenwashing. It is suggested that firms providing misleading pro-environmental claims must be punished.

Sometimes green color is used in logos to deceive the customers to create an environmental-friendly image, and it must be discouraged. It is needed to differentiate products according to their environmental performance. Brand environmental performance can be judged by green audits. The regulatory authorities, NGOs, and environmental activists should step forward to encounter the threat of greenwashing, otherwise, it would cause huge damage to the green cause. Due to firms' lack of commitment, several companies have been exposed to the general public, making false claims about product environmental features. It has made the consumers cynical about the overall green cause generally and that particular firm's commitment particularly. So it is highly recommended to firms that they should opt for greenwashing as their promotional strategy as it would definitely hurt them in the long run.

## 5.2 Limitations & Future Research

This research comes with some limitations, firstly it focused only on green electronic products/brands, and so future researchers may consider other types of products. Secondly, the data was collected from Pakistani consumers only and in the future scholars can involve participants from other geographical regions. Thirdly, it was a cross-sectional study and could not observe the dynamic changes through longitudinal data.

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