Research Article

Pathway to Green Consumerism: Decoding the Interplay of Affective and Cognitive Green Brand Factors

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ABSTRACT

The study aims to measure the impact of green brand affect on green purchase intentions of sustainable electronic products. It investigates the direct and indirect factors influencing consumers' green purchase intentions by applying the theory of planned behavior. Surveys were submitted to non-probabilistic convenience sampling of Pakistani consumers (n=379). The partial least squares method, a structural equation modeling technique, was employed using Smart PLS 4.0. The findings reveal that green brand affect does not directly influence green purchase intention. However, green brand image and green brand attitude positively mediate the relationship between green brand affect and green purchase intention, while green brand trust shows no significant mediating effect. This research offers valuable insights into the impact of green brand affect on customers' purchase intentions for sustainable electronic products, marking the first study of its kind in the context of Pakistan. Future research could extend this model by incorporating perceived price as a moderating variable, particularly in middle-income countries, and adopting a longitudinal approach to explore actual purchase behavior over time.

1. Introduction

Global warming is a serious and common threat for consumers, businesses, and policymakers around the world. The environment is polluted due to the harmful manufacturing process of goods to fulfill the increasing demands of consumers. One leading cause of environmental degradation is overconsumption and overproduction. On average, between 30% and 40% of environmental pollution is contributed by the unsustainable usage behavior of customers (Chanda et al., 2024), while sustainable goods are environmentally friendly, non-toxic, organic, and mainly produced from recycled ingredients (Bingyu, 2024). The environment is affected by many human activities, such as the rapid depletion of natural resources, carbon emissions, and exhaustion of the ozone layer. Sustainable consumption requires businesses to provide products that minimize damage to the environment (Waris & Hameed, 2020; Zinkhan & Carlson, 1995).

Sustainable consumption contributes to achieving the United Nations' Sustainable Development Goals, which are essential to promoting environmentally conscious behavior in the market (Chang & Chen, 2013;

Nguyen et al., 2019). In this context, the Theory of Planned Behavior is a widely accepted framework for explaining how consumer attitudes, subjective norms, and perceived behavioral control influence green purchase intentions (Ajzen, 1991). Attitudes refer to an individual's favorable or unfavorable evaluation of a behavior, subjective norms represent the perceived social pressure from significant others to engage or not engage in a behavior, and perceived behavioral control reflects the perceived ease or difficulty of performing the behavior.

The concept of "green brand affect" is defined as the positive emotional response consumers develop about a brand based on its eco-friendly practices (Chen et al., 2020). Green brand affect is likely to play a role in understanding how a brand's ecological efforts influence consumers' purchase intentions. Contemporary energy studies have emphasized the growing importance of consumers' environmental values (Ali et al., 2019). A recent study by Waris & Hameed (2020) examined the purchase intentions of Pakistani consumers, but green brand affect has not been studied in this context. In addition, Sharma (2021) observed that limited research has focused on relationships between green brands and the buying intentions of green consumers. Also, as highlighted by Waris & Hameed (2020), fewer studies have examined green marketing in Asian countries than in Western countries. For instance, studies on energy usage have been carried out in Switzerland Tanner & Kast (2003), Australia Gadenne et al. (2011), the US (Niemeyer, 2010), and the UK (Pothitou et al., 2016). Thus, there is a need to conduct research studies on sustainability and identify the factors that influence customer green purchase intentions related to electronic products (Tahir, 2021), particularly in Asia.

Consumers' energy usage contributes to smog and reduces natural resources, both of which directly damage the environment (Meng et al., 2018; Rafique & Rehman, 2017). According to Ali et al. (2019), 85% of total energy usage in Pakistan comes from household appliances, while Akbar et al. (2023) found that the housing sector consumes 47% of energy compared

to 29% by the industrial sector. A study by Ha & Janda (2012) revealed that the leading cause of greenhouse gas emissions is household appliances like air conditioners, washing machines, televisions, refrigerators, and dishwashers. Another study by Lange et al. (2020) predicted that Pakistan will rank fifth in terms of air conditioning demand in the future.

The primary purpose of the current study is to focus on the potential factors influencing purchase intentions of sustainable electronic home appliances in Pakistan. Key constructs such as green brand attitude, trust, and image are critical for specifying the purchase intention of green products (Moslehpour et al., 2023; Taufique et al., 2017; Waris & Hameed, 2020). Green brand attitude refers to a consumer's general positive or negative assessment of a brand's green attributes, while green brand trust reflects the consumer's belief in the brand's reliability as well as ecological claims. Green brand image refers to the customer's perception of the brand's responsibility to environmental sustainability, indicating the degree to which customers associate a business or brand with green values and sustainability.

This paper seeks to describe the policies, challenges, and results associated with producing and sustaining green electronic goods and their optimistic effect on end users (Almrafee & Akaileh, 2024; Nazir & Tian, 2022). Through investigating positive green branding initiatives, the current study aims to provide insights that can help and motivate electronic businesses and brands looking to improve or implement their green strategies. Finally, the current study hopes to increase understanding of the role that green brand affect plays in supporting positive environmental consumption that results in value to both businesses and consumers. Thus, the central contribution of the current research involves investigation of the relationship between green brand affect and green purchase intention in Pakistani electronic products, an area that has not been investigated previously. Moreover, this study applies the Theory of Planned Behavior in the context of green marketing, providing a theoretical basis for understanding green purchase intention and presenting strategic suggestions for improving environmental sustainability.

2. Literature Review and Hypothesis Development

2.1. Theory of Planned Behavior

The Theory of Planned Behavior (Ajzen, 1991) is an extension of the Theory of Reasoned Action, developed to address its limitations.. According to the Theory of Planned Behavior, attitudes, perceived behavioral control, and subjective norms impact an individual's behavioral intentions. Attitudes reflect and summarize a person's assessment of a given behavior as favorable or unfavorable, subjective norms specify the perceived social pressure to react or not react to the behavior, and perceived behavioral control indicates the degree of control an individual believes they have in terms of performing the behavior (Abeysekera et al., 2022; Ajzen, 1991; Al-Swidi & Saleh, 2021; Arkorful et al., 2022). All of these elements are important for understanding green purchase intention, as both internal factors (attitudes, perceived behavioral control) and external factors (subjective norms) impact consumer choices and decisions (Rozenkowska, 2023).

The Theory of Planned Behavior is potentially useful in predicting consumers' environmental behaviors, with green purchase intention offering insights into how this theory can be used to improve sustainable consumption (Paul et al., 2016). Several studies have effectively employed Theory of Planned Behavior to examine many aspects of green marketing, e.g., green restaurants, sustainable cosmetic products, eco-friendly hotels, and sustainable energy-efficient products (Ateş, 2021; Liu et al., 2020; Nawang et al., 2023; Wojnarowska et al., 2021). However, some researchers have questioned the effectiveness of the Theory of Planned Behavior in predicting environmentally responsible purchase intentions (Joshi & Rahman, 2015; Zaremohzzabieh et al., 2021). Indeed, research comparing Theory of Planned Behavior with other theories, such as social cognitive theory, has shown that Theory of Planned Behavior is a more effective predictor of green purchase intention (Panda et al., 2024). Thus, Theory of Planned Behavior was selected as the theoretical framework for the current study, integrating green brand affect as an independent variable and green brand trust, image, and attitude as mediators of their influence on green purchase intention.

2.2. Green Brand Affect

The concept of "green" has several meanings, including "sustainable," "environmentally friendly," "environmentally responsible" and "pro-environmental" consumer behavior (Kazançoğlu & Köse, 2024). Green brands have attributes that are connected with minimizing their environmental impact Hassan et al. (2025). According to Ajander et al. (2023), positive green brand affect can influence customers' feelings and may affect usage and buying decisions. When consumers are emotionally connected to a brand, they are more likely to evaluate the brand positively, which strengthens their brand loyalty (Ajander et al., 2023; Mizerski & White, 1986).

O'Donohoe (1994) suggested that brand affect offers a unique opportunity to enhance customer satisfaction and emotional attachment to a brand. Positive affect also strengthens consumer loyalty, increasing long-term benefits such as increased brand commitment (Gundlach et al., 1995). Similarly, Zajonc (1980) conceptualized affect as an emotional response that can either enhance or damage a brand's image in consumers' minds. Berscheid (1983) explained that business affect and trust often stem from close interpersonal relationships between consumers and brands, enhancing emotional attachment and brand image.

Positive green brand affect also enhances consumer perceptions of brand trustworthiness (Dick & Basu, 1994; Natasiah & Syaefulloh, 2024). Brands that evoke emotions such as joy or affection among consumers are more likely to be chosen, as these emotions enhance brand attitude and brand image. High levels of positive affect increase a brand's market share by encouraging loyalty (Chaudhuri & Holbrook, 2001). Consumers are more likely to purchase brands that make them "happy" or "joyful," enhancing positive brand perceptions. According to Dick & Basu (1994), brand affect is essential in forming positive emotional reactions related to the brand.

Our study uses green brand affect to capture

consumers' positive emotional responses toward sustainable electronic products. Green brand affect is defined as customers' positive emotional feelings about a brand because of its perceived environmental performance (Chaudhuri & Holbrook, 2001; Chen et al., 2020). We hypothesize that green brand affect leads to several positive outcomes as follows:

H1: Green brand affect has a positive effect on green brant trust.

H2: Green brand affect has a positive effect on green brand attitude.

H3: Green brand affect has a positive effect on green purchase intentions.

H4: Green brand affect has positive impacts on green brand image.

2.3. Green Purchase Intention

Green purchase intention is defined as the willingness of consumers to buy environmentally friendly products (Wang et al., 2020). Green purchase intention reflects the degree to which the consumers prioritize eco-friendly goods over conventional alternatives based on their perceived ecological effects. In line with Alghzawi et al. (2020), consumer intention and actual buying behavior are often positively related, reflecting the alignment between a consumer's intention and their final decision to buy. Consumer motivation to purchase is driven, in part, by their attitudes toward or behaviors in regards to a particular brand (Tarabieh et al., 2020; Wang et al., 2020).

Scholars around the world have studied green purchase intention in different industries and product categories (Hou & Sarigöllü, 2022; Mehraj & Qureshi, 2022). Many consumers are interested in choosing branded products that are produced under green procedures (Waheed et al., 2020). Research by Han et al. (2022) found that customer confidence in a product or brand's ecological claims positively impacts their green purchase intention. Thus, Lakatos et al. (2021) argue that brands should adapt their strategies to align with the increasing customer knowledge and demand for ecologically responsible products, as more customers are now ecologically conscious. In sum, green purchase intention reflects an individual's

willingness to give priority to goods or services that appear to have greener attributes compared to traditional products. Green purchase intention also points to the likelihood that consumers have formed an attachment to certain green products or services, which increases their commitment to buying eco-friendly goods (Tarabieh et al., 2020).

2.4. Green Brand Trust

Green brand trust, explained by Chen (2010), refers to the consumer's willingness to trust that a brand actually has ecologically friendly features. Trust, in general, plays a key role in creating a positive connection between a brand and its consumers (Kwon et al., 2021; Pagani et al., 2019; Salehzadeh et al., 2023). Based on previous research, Foroudi et al. (2020) note that trust involves acceptance of vulnerability because one believes that the other party's intentions and/or behaviors will result in positive outcomes. Many researchers have found that brand trust is strongly related to increased purchase intention, as customers are more likely to buy from businesses they trust (Situmorang et al., 2021; Suki & N, 2016). In addition, when consumers observe that a business is ecologically responsible and consistent, their trust that the business and brand are truly green increases (Wang et al., 2022). Thus, green brand trust and green purchase intention have a positive connection (Chen, 2010; Ha et al., 2022; Natasiah & Syaefulloh, 2024).

Nevertheless, if negative incidents involving a product occur (e.g., a smartphone catching fire), customer trust can be severely damaged, particularly if such problems contradict the brand's claims of being environmentally sustainable. Thus, green product claims that are contrary to reported or actual experience can harm a firm's reputation and reduce green brand trust , as well as green purchase intention (Ha et al., 2022). In the Pakistani context of electronic goods, green trust refers to consumer confidence that sustainable electronic products will be produced, used, and disposed or reused with minimal environmental damage and low carbon emissions. Recent studies such as Nguyen-Viet (2022) have reported that green brand trust influences consumption behavior, specifically by mediating

the relationship between green brand attitude and the green purchase intention. Trust-building tactics, such as effective promotion and a reliable brand image, also play vital roles in establishing green trust, which in turn motivates green product purchase (Cheung & To, 2021; Lavuri et al., 2022; Wong et al., 2020), leading to our next hypothesis.

H5: Green band trust has a positive impact on green purchase intention.

2.5. Green Brand Attitude

In the context of green marketing, green brand attitude refers to a consumer's general positive or negative assessment of a product or brand based on its ecological practices. According to Hoa (2022), positive attitudes toward a good as green or eco-friendly goods increases consumer intentions to purchase such goods. According to Salam et al. (2022), eco-friendly attitudes, which include beliefs about a product's environmental safety, play a vital role in shaping consumer buying behavior. Positive green brand attitudes encourage consumers to buy more sustainable products and enhance their willingness to support green businesses through positive word-of-mouth about these brands (Salehzadeh et al., 2023).

The relationship between consumer attitude and purchase intention has been studied in several countries as well as industries. For example, in Vietnam, Nguyen (2012) found a positive connection between customer attitudes and purchase intention for sustainably produced food. The results of another study also showed that customer attitudes, specifically those shaped around the brand's ecological image, positively influenced purchase intention (Hoa, 2022). In addition, Zaremohzzabieh et al. (2021) reported a significant relationship between customer attitudes regarding ecological goods and green purchase intention. All these findings highlight the significance of attitudes, especially green brand attitude, in driving customers' intentions to purchase eco-friendly goods (Aman et al., 2012; Khaola et al., 2014; Paul et al., 2016). Based on this literature, we hypothesized that

H6: Green brand attitude has a positive relationship

with green purchase intention.

2.6. Green Brand Image

According to Bashir et al. (2020), based on Kotler (2001), consumers respond to a product or brand based on the rational image they form regarding that product. When the product or object in question is a brand or business, numerous factors—involving beliefs, emotions, and feelings about the company's products—can influence how consumers react. Brand image plays a vital role in influencing consumer behavior, as it enables potential buyers to more easily recall and identify the brand (Errajaa et al., 2020; Natasiah & Syaefulloh, 2024). Brand image is an important aspect of success for any brand or business, as it indicates how consumers observe the brand and its products (Listyarti et al., 2023; Natasiah & Syaefulloh, 2024). Green brand image, in the context of green marketing, refers to a brand's perceived environmental reputation, which is in line with consumers' ecological expectations (Khandelwal et al., 2019; Rahman & Nguyen-viet, 2023). Moreover Chen et al. (2020) note that green brand image is positively connected to ecological purchasing, and many other scholars have reported that green brand image can provide brands with an advantage in the marketplace (Zameer et al., 2020).

Green brand image offers numerous advantages to brands. Lin et al. (2017) organize these advantages into three categories: functional, symbolic, and experiential. Functional advantages emphasize the practical benefits of the business's ecological offerings; symbolic advantages mention the emotional value customers connect to an ecological brand, and experiential advantages emphasize the physical and psychological involvements tied to using the specific brand's products or services (Zameer et al., 2020). According to Social Cognitive Theory, customers tend to favor goods that are generally accepted and tied to well-known brand images (Majeed et al., 2022). A strong green brand image strengthens customer trust in the brand's ecological responsibility and increases green purchase intentions. Based on this literature, we hypothesize:

H7: Green brand image has a positive impact on

green purchase intention

2.7. Mediating Role of Green Brand Trust

A recent study by Amin & Tarun (2021) confirms the idea that green brand trust positively affects customers' intentions to buy ecological goods (Ha et al., 2022). Furthermore, Cheung & To (2021) examined trust as a potential mediator and they found that green brand trust plays an important role in how customers observe the trustworthiness and ecological responsibility of brands' practices. Furthermore, Lavuri et al. (2022) provide evidence suggesting that green brand trust to mediates the relationship between ecological advertising and green brand image, as well as green purchase intention. Similarly, prior studies report that trust-building advertising strategies regarding a brand's ecological initiatives are important for increasing customer trust and inspiring green goods purchases (Cheung & To, 2021; Lavuri et al., 2022; Wong et al., 2020). Additionally, Chang & Chen (2013) discovered that green brand trust mediates the relationship between green product quality and green purchase intention, strengthening the concept that trust is a key intermediate in the customer decision-making procedure. Therefore, we hypothesize that:

H8: Green brand trust mediates the positive relationship between green brand affect and green purchase intention

2.8. Mediating Role of Green Brand Attitude

Green brand attitude plays an important role in shaping customers' purchasing decisions (Chen et al., 2020). A literature review by Sarumathi (2014) reported that various studies indicated that the effects of antecedents such as environmental knowledge and concern on green purchase intention were mediated by mediated by green attitudes. Likewise, Maichum et al. (2017) also found that attitudes significantly mediated the effect of green knowledge on green purchase intention in Thailand and Paul et al. (2016) noted that attitude mediated the effects of green concerns on green purchase intention.. These findings suggest that green brand attitude is likely to be a key mechanism through which green brand affect impacts green purchase intention and lead to our next hypothesis:

H9: Green brand attitude mediates the positive relationship between green brand affect and green purchase intention.

2.9. Mediating Role of Green Brand Image

Consumer decisions to purchase green products appears to be positively influenced by green brand image (Mourad & Ahmed, 2012). A positive green brand image enhances the possibility that customers will select the brand's goods, particularly when they observe the brand as sincerely ecologically responsible (Mourad & Ahmed, 2012). For a business to succeed in the long run, a positive brand image and active marketing strategies are crucial. These strategies not only help the company attract new customers, but also help retain existing customers who are loyal to the brand's green practices. As suggested by Social Cognitive Theory, individuals tend to prefer to purchase products that have widely recognized and favorable brand images (Majeed et al., 2022). Furthermore, it is likely that consumers prefer to buy brands that they trust as leaders in environmental sustainability. Thus, our final hypothesis states:

H10: Global brand image mediates the positive relationship between green brand affect and green purchase intention.

3. Methodology

3.1. Description of Study Context for Participants

Questionnaire is used to develop a study that considers your perception in relation to green brand Affect that influence green purchase intention. Responding to it is voluntary, it takes a few minutes to complete, and information is provided anonymously. Please review the questionnaire and, for the following items, circle/tick the number that indicate the most suitable answers for you. Thank you for your time and cooperation. I appreciate your assistance in supporting my effort to complete this research.

3.2. Sample Size and Data Collection

The target population for this study is electronic consumers who are concerned with reducing carbon emissions. The respondents for the current study are the consumers of electronic brands presently sold in Pakistan. Although (Kline, 2023) proposes that ten

responses per item are acceptable, Arrindell & Van Der Ende (1985) suggest that having twenty study participants per item is more appropriate. Given that our model features 20 reflective items for 5 latent factors, 500 participants (Waris & Hameed, 2020) were recruited for the study to ensure approximately 400 acceptable respondent surveys. Following prior research in this area, a non-probabilistic convenience sample focused on educated, urban consumers was recruited (Ahmad & Zhang, 2020; Shoukat et al., 2021; Wahab & and, 2022). The questionnaire was designed using Google Forms. The URL for the questionnaire was sent to participants via different platforms such as email, WhatsApp, and Facebook.

After screening for missing values and removing invalid questionnaires, 379 valid questionnaires remained for the analysis. Respondents provided demographic data such as their education level, annual income, gender, and age. Table 1 shows that a majority of respondents had high levels of formal education with 84.7% completing their undergraduate degree and 10.6% having graduate level or higher training. Respondents' annual income ranged from 3 lakh (approximately = US $40,000) or more (10.6%) to 2 lakh (10.0%) to less than 1 lakh (79.4%). The sample was 66.5% female. Almost all respondents were less than 30 years of age (see Table 1).

3.3. Measures

The scales used in this study are well-established. Scales from (Chaudhuri & Holbrook, 2001; Chen et al., 2020) were adopted to measure green brand affect. Other scales were adopted from previous studies as follows: green brand trust from Chen (2010); green brand image from Chen (2010) and Cretu & Brodie (2007); green brand attitude from (Chen et al., 2017); and green purchase intention from Nguyen et al. (2019) and Tarabieh (2021). All study variables and their corresponding measurement items are listed in Table 2 . The questionnaire featured five-point Likert items that ranged from "strongly disagree" to "agree strongly."

4. Results and Analysis

4.1. Measurement Model Assessment

Partial least squares (PLS) using SMART PLS4 (Hair et al., 2014) was applied to analyze the hypothesized structural model (see Figure 1). Multivariate normality was investigated using the Kolmogorov Smirnov test. Convergent validity (reliability) was assessed using three criteria: composite reliability, average variance extracted, and individual item reliability (Hair et al., 2011). All Cronbach's alphas (α) and composite reliability values were higher than 0.7 and 0.9 (Hair et al., 2011; Ursachi et al., 2015). All item factor loadings were greater than 0.70 and all average variance extracted exceed .50 (see Table 3). Discriminant validity (see Table 6) was established as the hetero trait mono trait (HTMT) 0.12 to 0.87, lower than the value of 0.90 (Hair et al., 2021).

4.2. Common Method Bias Test

Table 4 and Table 5 present a comparison of results before and after including the Common Latent Factor to address common method bias. The results indicate that common method bias has a minimal effect on the findings, confirming the robustness of the model. To assess the impact of common method bias, a chi-square difference test was conducted to compare the models with and without the Common Latent Factor. The test results showed that the inclusion of the Common Latent Factor did not significantly improve the model fit ($\Delta\chi^2$ = 10, Δdf = 5; critical value = 11.07). This indicates that shared variance among items does not significantly affect the path coefficients and that the baseline model without the Common Latent Factor is sufficient. These findings validate the robustness and reliability of the reported relationships.

4.3. Structural Equation Model & Hypothesis Testing

SEM is applied widely in consumer research to analyze relationships among latent constructs (Bollen & Long, 1993; Hu et al., 2019). Ten hypotheses predicted antecedents and mediators that are related to green purchase intention, in this case for energy-efficient products. Bootstrapping was applied to estimate the path coefficients and assess their significance level (Hair et al., 2021; Yi & Davis, 2003). According to Hair et al. (2021) path coefficient values range

Table 1. Demographic information of respondents

Sr. #	Classification	Frequency	Percent
Education level	University (College)	321	84.7%
	Graduate School (or above)	40	10.6%
	High school (or below)	18	4.7%
Annual Income	300 thousand (3 Lakh) or more PKR	40	10.6%
	200 thousand (2 Lakh) PKR	38	10.0%
	Less than 100 thousand (1 Lakh) PKR	301	79.4%
Gender	Male	127	33.5%
	Female	252	66.5%
Age	41 or above	8	2.1%
	31–40	27	7.1%
	21–30	283	74.7%
	Below 20	61	16.1%
	Total	379	100%

between -1 and +1. A path coefficient value closer to +1 indicates a strong positive relationship, while a value closer to -1 signifies a negative relationship. Typically, if the t-value exceeds 1.96, the hypothesized relationship is supported at the 95% confidence level.

R^2 indicates the amount of variance in the outcome construct that is accounted for by the predictor constructs (Elliott & Woodward, 2007; Hair et al., 2011). As a rule of thumb, a coefficireport of determination of 0.25 is considered weak, 0.50 is moderate, and 0.75 is strong (Hair et al., 2011; Henseler et al., 2009). However, in social sciences, especially buyer behavior research, a coefficient of determination value of 0.2 is generally acceptable (Hair et al., 2014, 2011). In this study, the R^2 and adjusted R^2 are satisfactory with a moderate explanatory level of 0.45 (Table 7) (Hair et al., 2011).

The results in Table 8 support H1 by indicating green brand affect positively impacts green brand trust (β = 0.57, t = 13.50, p<.001). Similarly, H2, which predicted that green brand affect positively affects green brand attitude, was supported (β = 0.71, t = 23.58, p<.001) as was H4 the effect of green brand affect on green brand image (β = 0.66, t = 21.33, p < 0.001). However, H3 was not supported as the hypothesized relationship between green brand affect and green purchase intention was not statistically significant (β = 0.02, t =

0.37, p>= 0.70). H5, which posited that green brand trust positively impacts, was not supported green purchase intention (β = 0.006, t = 0.10, p> 0.91). In contrast, the effect of green brand image on green purchase intention was significant in the predicted direction, supporting H6 (β = 0.37, t = 4.71, p <0.001). Last, H7, which predicted a positive relationship between green brand attitude and green purchase intention, was supported (β = 0.43, t = 5.62, p<0.001). Overall, while most hypotheses were supported, two were not.

The mediating effect of green brand trust between green brand affect and green purchase intention (H8) was not supported (β = 0.003, t = 0.10, p>0.91), aligning with the findings of Lee (2020), who also reported an insignificant effect of green brand trust on green purchase intention. However, hypotheses regarding the mediating effects of both green brand image (H9) and green brand attitude (H10) on green purchase intention were supported (β = 0.25, t = 4.36, p<.001; β = 0.30, t = 5.72, p< .001). Thus, green brand trust and green brand attitude positively mediate the relationship between green brand affect and green purchase intention, suggesting that the green brand affect enhances green brand trust and green attitudes, which in turn lead to an increase in consumer purchase intentions.

Table 2. Questionnaire Constructs and Items

Variables	Measurement Items	Source
Green brand affect	The environmental friendliness of the brand makes you feel good. The brand's emphasis on environmental protection makes you feel good. The brand's environmental performance makes you happy.	Chaudhuri & Holbrook (2001); Chen et al. (2020)
Green brand attitude	You will like this brand more because the brand is environmentally friendly. You will prefer the brand because of your concern for the environment. You agree that the brand can be more valuable because it is environmentally friendly	Chen et al. (2017)
Green purchase intentions	I will consider purchasing green products as they should be less harmful to the environment in the coming years. For safety benefits, I would be moving to environmentally friendly green products. In the immediate future, I certainly want to buy green products. I would even consider purchasing green products for others.	Nguyen et al. (2019); Tarabieh (2021)
Green Brand Image	The brand is considered as the benchmark of environmental commitment.	(Chen, 2010; Cretu & Brodie, 2007; Padgett & Allen, 1997)
Green brand Trust	The brand's environmental reputation is outstanding. The brand's environmental performance is successful. The branding is based on its emphasis on environmental protection. The brand's environmental commitment is trustworthy. You feel that this brand's environmental reputation is generally reliable. You feel that this brand's environmental performance is generally dependable. You feel that this brand's environmental claims are generally trustworthy. This brand's environmental concern meets your expectations. This product keeps promises and commitments for environmental protection.	(Chen, 2010)

Table 3. Factor loadings, Cronbach's alpha, CR, AVE

Variables	Item Code	Factor Loadings	Cronbach's alpha	CR	AVE
Green Brand Affect	GBAF1	0.83	0.82	0.89	0.74
	GBAF2	0.87			
	GBAF3	0.87			
Green Brand Attitude	GBAT1	0.91	0.86	0.91	0.78
	GBAT2	0.83			
	GBAT3	0.90			
Green Perchase Intention	GPI1	0.80	0.78	0.86	0.61
	GPI2	0.92			
	GPI3	0.77			
	GPI4	0.72			
Green Brand Image	GBIM1	0.78	0.88	0.91	0.69
	GBIM2	0.83			
	GBIM3	0.85			
	GBIM4	0.81			
	GBIM5	0.87			
Green Brand Trust	GBT1	0.83	0.89	0.92	0.69
	GBT2	0.81			
	GBT3	0.85			
	GBT4	0.78			
	GBT5	0.88			

Note: AVE = Avarage variance extracted; CR = Composite reliability

Table 4. Path Coefficients Comparison

Path	Baseline Coefficient	Coefficient with CLF
Green brand affect → Green brand attitude	0.71	0.69
Green brand affect → Green Brand Image	0.66	0.65
Green brand attitude → Green purchase intention	0.43	0.41
Green Brand Image → Green purchase intention	0.37	0.34
Green brand trust → Green purchase intention	0.00	0.00

Note: CLF = Common Latent Factor
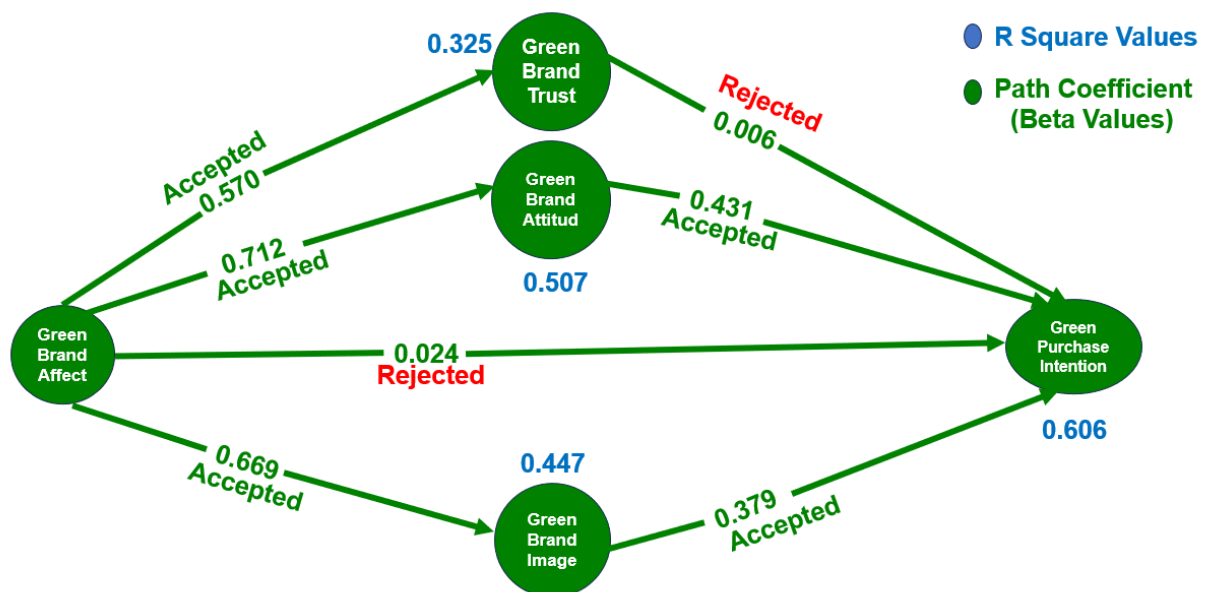
Table 5. Variance Explained (R^2) Comparison

Construct	Baseline R^2	R^2 with CLF
Green brand attitude	0.50	0.47
Green brand image	0.44	0.43
Green purchase intention	0.60	0.57

Table 6. Discriminant validity Hetero Trait Mono Trait Ratio (HTMT)

Constructs	GBAF	GBAT	GBIM	GBT	GPI
Green brand affect (GBAF)	-				
Green brand attitude (GBAT)	0.82				
Green Brand Image (GBIM)	0.76	0.84			
Green Brand Trust (GBT)	0.64	0.61	0.89		
Green purchase intention (GPI)	0.72	0.85	0.86	0.67	-

Table 7. Coefficients of Determination

Variable	R^2	Adjected R^2
Green Brand Attitude	0.50	0.50
Green Brand Trust	0.32	0.32
Green Brand Image	0.44	0.44
Green Purchase Intention	0.60	0.60

Figure 1. PLS-SEM Model

Table 8. Tests of Hypotheses

H	Path	O/β	M	SD	T-V	P-V	Result
Direct effect							
H1	Green brand affect → Green brand trust	0.57	0.57	0.04	13.50	0.00	Supported
H2	Green brand affect → Green brand attitude	0.71	0.71	0.03	23.58	0.00	Supported
H3	Green brand affect →Green purchase intention	0.02	0.02	0.06	0.37	0.70	Rejected
H4	Green brand affect →Green brand image	0.66	0.67	0.03	21.33	0.00	Supported
H5	Green brand trust →Green purchase intention	0.00	0.00	0.05	0.10	0.91	Rejected
H6	Green brand attitude →Green purchase intention	0.43	0.42	0.07	5.62	0.00	Supported
H7	Green brand image →Green purchase intention	0.37	0.38	0.08	4.71	0.00	Supported
Indirect effect							
H8	Green brand affect green →brand trust →Green purchase intention	0.00	0.00	0.03	0.10	0.91	Rejected
H9	Green brand affect →Green brand attitude → Green purchase intention	0.30	0.30	0.05	5.72	0.00	Supported
H10	Green brand affect →Green brand image → Green purchase intention	0.25	0.25	0.05	4.36	0.00	Supported

Note: H=Hypothesis, O=Original Sample, M=Sample Mean, SD=Standard Deviation, T-Value, P=Value

5. Discussion

The results indicate that green brand affect significantly increases green brand trust in green electronic products. These findings align with previous research, which reported that brand affect has a positive influence on brand trust among green consumers (Chaudhuri & Holbrook, 2001). However, the fact that the mediation effect of green brand trust between green brand affect and green purchases intention is not significant suggests that increasing trust alone may not be sufficient to enhance purchase intentions. These results are similar to Lee (2020), which reported that brand trust did not significantly impact purchase intention of Korean products among Vietnamese Gen Z customers residing in Korea.

On the other hand, green brand image has a significant positive impact on green purchase intention. Indicating that green business image increases the purchase intention of energy-efficient electronic products in Pakistan. These results are consistent with the find-

ings of Tan et al. (2022) who noted that the green image of food products increased customers' purchase intentions in their study.

Furthermore, we did not find that green brand affect directly impacts green purchase intention of electronic products. However, green brand affect did increase, which in turn increased green purchase intention. Thus, if an electronic brand enhances green brand affect and green brand image, consumer motivations to purchase the brand's products appear likely to increase as well. This relationship has not been widely explored although some. previous research, such as Zhang et al. (2019) has investigated green brand image in different contexts, including its influence on green marketing activities in Chinese industrial organizations. Given that our findings suggest that green brand affect contributes significantly to enhancing green brand image, which enhances green purchase intention, researchers and managers should seriously consider the relationship between emotions and brand

image in terms of green branding strategy theory and practice.

Our study found that green brand attitude has a positive impact on green purchase intention. These results are the same as those reported by Gaspar & Antunes (2011) and Hu et al. (2019). Green brand attitude positively mediated the relationship green brand affect affect and green purchase intention, which means that an increase in green affect is positively associated with more positive green brand attitude and that increase in green brand attitude is associated with increased green purchase intention. These findings are similar to the past study of Chen et al. (2020) whose study also noted that middle-class consumers tend to overuse energy. However, if brands can increase green brand affect this is likely to contribute to stronger green brand attitude and as a result higher green purchase intention, potentially encouraging middle-class consumers to purchase more sustainable energy products.

5.1. Theoretical Implications

This investigation found overall support for the value of the Theory of Planned Behavior as a framework for studying the purchase intentions of consumers regarding electronic sustainable electronic products. In addition, this study contributes to the literature on green purchase intention by providing evidence of the importance of mediating constructs. In particular, we provide evidence in support of the important mediating relationships of green brand attitude and green brand image between green brand affect and green purchase intentions, but not green brand trust.

As a result, the new model tested in this study extends the literature by suggesting the potential importance of green brand affect as an antecedent to green purchase intention, not directly, but through the mediating constructs, green brand attitude and green brand image. It highlights that researchers need to better understand the role that emotions play in influencing consumers' purchase intentions for sustainable products, thereby extending the findings of Chen et al. (2020). Thus, a key theoretical implication lies in the potentially import effect that brand liking has on consumer decision-making, extending to increased green purchase intention and possibly, brand

loyalty (Bhattacharyya, 2007). The potential theoretical implications of green brand affect may extend across several fields, highlighting its role in shaping green consumption behavior, influencing business tactics, and identifying effective social marketing communication content regarding sustainability.

5.2. Managerial Implications

Industries should expand strategies to enhance their green brand affect in order to positively impact green brand attitude and image, thereby enhancing green purchase intention. Companies should systematically identify the drivers of green purchasing behavior in their product categories and reinforce these factors. Additionally, businesses should seek to increase green brand affect, green brand attitude, and green brand image by investing in research and development to create sustainable products from eco-friendly materials and conduct comprehensive lifecycle assessments to minimize environmental impact, from production to disposal, ensuring products are designed for longevity. Companies should also recognize environmental standards and obtain certifications to build credibility and trust with consumers. By increasing levels of trust among more consumers, it is possible that this construct will join green brand attitude and green brand image as a mediator between green brand affect and green purchase intention.

Policymakers must highlight environmental issues to help consumers understand the climate-related problems caused by electronic products, such as how air conditioners and refrigerators release harmful gases that damage the ozone layer. Social media platforms should be used to raise consumer awareness about government programs and brand efforts related to sustainability and provide guidelines on conventional products to help consumers shift toward sustainable alternatives that reduce greenhouse gases. Introducing positive emotional communications (e.g., feeling good about the environmental harmony of purchasing green products) along with the practical benefits of sustainable products appears likely to increase consumer intentions to purchase energy-efficient electronics.

Finally, green brands can provide a competitive advantage in markets where ecological concerns are a

priority. Companies that effectively communicate their sustainability efforts can differentiate themselves from competitors and attract environmentally conscious consumers. Marketers should identify the unique aspects of their green initiatives, including those that increase positive feelings about the brand, and leverage them to strengthen their competitive advantage.

6. Limitations and Future Research

The limitations of the current study are primarily related to its theoretical framework. This study used aspects of the Theory of Planned Behavior, which may produce results that could differ if alternative theoretical models were employed. Another significant limitation is the cross-sectional nature of the research as correlation does not mean causation. Experimental studies would be helpful in the future in order to further test the primary antecedent role of green brand affect as found in this investigation. Additionally, the study's sample size was limited and expanding it could provide more generalizable results. Furthermore, we focused solely on electronic goods, and testing of the proposed model for other goods and services would increase confident in its external validity.

Future researchers can use Stimulus Organism Response Theory (Rahman & Nguyen-viet, 2023), which may suggest a new perception on current model. They may also investigate other variables, such as green perceived values (Truong & Ngo, 2024), to better understand green purchase intention for electronic products. Extending more the research to involves samples from other countries and cultures could also offer a clearer understanding of consumers' green purchase intention. Furthermore, future studies implementing a longitudinal design could deliver more precise results by following the same participants over time. Researchers could also extend this model by including a perceived price variable as a moderator, especially in middle-income countries, where customers' purchase intentions are highly affected by price.

7. Conclusion

The study's findings suggest that the hypothesized model (see Figure 1), based on the Theory of Planned Behavior, has potential in terms of predicting consumers' purchase intentions regarding sustainable electronic products based on both affective and cognitive antecedents. For example, the results demonstrate that green brand image and green brand attitude significantly and positively influence consumers' green purchase intention. This result indicates that a meaningful number of consumers feel good about sustainable electronic products which in turn increases their positive attitude toward the brand and their positive evaluation the brand's overall image. However, the lack of support for the relationship between green brand trust and green purchase intention suggests that trust alone is not sufficient to motivate stronger purchase intentions. In addition, the hypothesis regarding the direct impact of the green brand affect on green brand affect was not supported, although the antecedent impacted both green brand attitude and green brand image, which in turn increased green purchase intention. These findings confirmed the results of (Chen et al., 2020) who reported that green brand affect does not directly influence consumers' purchase intentions about green products. Although preliminary, our study suggests that companies need to consider both affective and cognitive factors associated with green brand purchases in order encourage the adoption of their sustainable electronic products. As such, this investigation provides a foundation for future research on green marketing in developing markets like Pakistan (Sun et al., 2021).

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