

**The Interplay of Eco-Labeling, Eco-Branding, and Consumer Perception in Driving Purchase Intention**

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**Abstract**

This study examines the impact of eco-labeling (EL) and eco-branding (EB) on purchase intention, with consumer perception (CP) acting as a mediating variable among consumers in Dhaka, Bangladesh. Utilizing the Theory of Planned Behavior (TPB), the study examines how environmental information and consumer perceptions impact sustainable purchasing intention. A quantitative, cross-sectional research design was employed, with data collected from 250 consumers via a structured questionnaire administered through Google Forms. Respondents were selected using a stratified sampling technique. Structural Equation Modeling (SEM) was utilized to analyze the hypothesized direct and mediating relationships among the study variables. The findings demonstrate that eco-labeling and eco-branding significantly influence consumer purchase intention. Mediation analysis reveals that consumer perception significantly mediates in the relationship between eco-labeling and purchase intention, while it is insignificant between eco-branding and purchase intention. Practically, the results indicate that organizations need to highlight authentic eco-labels and transparent environmental advantages to positively influence consumer attitudes and stimulate green purchasing behavior. The study focuses only on cross-sectional nature and a single location. The study suggests that future research should use long-term designs, cover more regions, and examine other factors such as environmental trust, green skepticism, and environmental knowledge.

**Keywords:** Eco-Labeling, Eco-Branding, Consumer Perception, Purchase Intention, SMEs

**1. Introduction**

In recent years, the focus on environmental sustainability has become increasingly significant in the realms of consumer behavior and marketing research. This shift is largely driven by heightened ecological awareness, regulatory pressures, and global changes in consumption patterns (White et al., 2019). Businesses are progressively adopting environmentally friendly practices, not only to comply with regulatory standards but also to attract a consumer segment whose purchasing decisions are influenced by sustainability considerations (Simanjuntak et al., 2026). Small and medium-sized enterprises (SMEs) in developing countries such as Bangladesh, are increasingly acknowledging the necessity of integrating eco-friendly strategies into their business models to meet evolving consumer expectations and contribute to sustainable development. Despite the rise in environmental consciousness among consumers, a notable gap persists between their green attitudes and actual purchasing behaviors, presenting a challenge for SMEs in effectively promoting sustainable products. The study identified eco-labeling and eco-branding as crucial tools that shape consumer perception and encourage the purchase of environmentally sustainable products (Taufique et al., 2016; Rehman, 2024). These tools facilitate the communication of a product's ecological credentials, thereby fostering trust, awareness, and a stronger intention among consumers to engage in green purchasing behaviors (Joshi & Rahman, 2019; Islam & Sinniah, 2025). Eco-labeling serves as an informative cue that conveys a product's environmental benefits, directly impacting consumer attitudes and behavioral intentions. Evidence suggests that satisfaction with existing eco-labels positively influences personal attitudes towards products, thereby enhancing purchase intention (Latip et al., 2024). Additionally, eco-labeling provides standardized information regarding a product's environmental performance through labels or certifications, thereby reducing information asymmetry and supporting environmentally informed decision-making (Thøgersen et al., 2010; Testa et al., 2015; Agarwal et al., 2025). Empirical studies indicate that eco-labels can positively influence consumers' perceived environmental quality, trust, and purchase intention, particularly when labels are credible and easily understood (Yadav & Pathak, 2017). Concurrently, eco-branding, characterized by the use of green semiotics such as logos, colors, and environmentally evocative imagery, shapes consumers' experiential and symbolic engagement with brands. Eco-branding embeds environmental values into brand messaging to strengthen emotional connections and perceived brand credibility (Islam & Segumpan, 2025). It extends beyond product-level information by embedding sustainability values into a brand's identity and communication strategy, enabling firms to cultivate emotional bonds and long-term brand equity based on environmental responsibility (Kim et al., 2023). Together, eco-labeling and eco-branding act as critical signals that shape consumer perception, a key antecedent of green purchase intention. In the domain of green products, consumer perception plays a crucial role, as the environmental characteristics of these products are often intangible and difficult to verify before purchase (Magnier & Schoormans, 2015; Dao, 2024). Some studies have shown that positive perceptions regarding environmental friendliness, credibility, and product quality significantly enhance consumer attitudes towards green products and increase their purchase intentions (Lili et al., 2022; Nabivi, 2025). However, these relationships are not uniform across different markets and are affected by factors such as environmental knowledge, trust in eco-claims, and perceived authenticity, with concerns about greenwashing often diminishing consumer confidence (Brueninghaus et al., 2024; Ye et al., 2023). Consumer perception involves the interpretive and evaluative processes through which consumers internalize eco-labels and branding cues, forming attitudes that influence purchasing behavior. Empirical studies confirm that mediators such as attitude and green trust facilitate the conversion of environmental knowledge and eco-label awareness into sustainable behavior (Hossain et al., 2022). Additionally, factors like consumer innovativeness and perceived efficacy interact with label awareness, shaping sustainable purchase outcomes (Siraj et al., 2022). Numerous studies identified consumer perception as a vital psychological conduit that transforms external marketing stimuli into internal dispositions predicting eco-conscious purchasing behaviors (Ali, 2021; Das et al., 2024; Wu & Long, 2024). While previous studies highlight the effectiveness of green advertising and environmental knowledge in fostering consumers' intention to purchase sustainable products, there is a significant gap in understanding the distinct and combined effects of eco-labeling and eco-branding on purchase intention, especially in developing countries such as Bangladesh. Moreover, the mediating role of consumer perception in these relationships has not been thoroughly explored in the current study.

This study aims to clarify the interconnected effects of eco-labeling and eco-branding on purchase intention, with consumer perception serving as a mediating mechanism. Examining these variables within a developing country context not only addresses a critical research gap but also provides valuable insights for marketers and policymakers seeking to enhance sustainable consumption through refined eco-labeling and eco-branding strategies tailored to local consumer perceptions and environmental awareness levels. Through this investigation, the study advances theoretical understanding of consumer behavior in green marketing and offers practical implications for developing effective eco-label and eco-brand communications that resonate with environmentally conscious consumers in Bangladesh.

## 2. Literature Review

### 2.1 Theoretical Foundation

The Theory of Planned Behavior (TPB) (Ajzen, 1991) is a well-established theoretical framework that effectively examines the dynamics between eco-labeling, eco-branding, consumer perception, and purchase intention. This framework offers a comprehensive explanation of how attitudes, subjective norms, and perceived behavioral control collectively shape both behavioral intentions and actual consumer behavior. The fundamental constructs of TPB are particularly relevant for understanding how consumers engage with environmental attributes such as eco-labels and green branding, processing product information, and making decisions about purchasing sustainable products. Eco-labels play a crucial role in enhancing consumer perception by providing reliable and easily interpretable signals regarding a product's environmental quality, thereby positively influencing attitudes and perceived behavioral control, which are central to TPB (Müller et al., 2021). Furthermore, eco-branding builds trust and loyalty towards sustainable brands, affecting subjective norms (perceived social pressure) and attitudes, which TPB identifies as key determinants of the intention to purchase sustainable products (Li, 2025; Theocharis & Tsekouropoulos, 2025). Additionally, empirical studies applying TPB in the context of digital platforms and live-streaming commerce illustrate how consumer perceptions and marketing communications directly impact behavioral intentions through TPB constructs, highlighting its applicability and robustness in various contemporary settings, including online green product purchases (Filippelli et al., 2025).

### 2.2 Hypotheses Development

The Theory of Planned Behavior (TPB) (Ajzen, 1991) suggests that behavioral intention is shaped by an individual's attitude toward behavior, the impact of subjective norms, and perceived behavioral control. Eco-labels contribute to forming consumer attitudes by offering reliable information that improves their assessment of a product's environmental advantages, thus encouraging a favorable attitude toward its purchase. Additionally, eco-labels enhance perceived behavioral control by minimizing uncertainty and boosting consumers' confidence in their purchasing choices (Rahman & Amin, 2024; Hahnel et al., 2015). Eco-labels can also influence subjective norms by indicating socially endorsed behaviors, prompting consumers to meet environmental expectations. Consequently, eco-labeling indirectly enhances purchase intentions through these TPB elements by improving attitudes, social validation, and perceived control over eco-friendly decisions (Alam et al., 2023; Li, 2025). By conveying a product's environmental benefits, eco-labeling is positively linked to consumer purchase intentions by increasing environmental awareness and trust in the product's sustainability claims (Kim & Lee, 2023). Research shows that green advertising, when backed by environmental knowledge, positively affects consumers' intentions to purchase green products (Nguyen-Viet, 2022; Sun et al., 2020). Studies indicate that eco-labeling serves as a crucial cue that influences consumers' green purchase intentions by enhancing awareness and satisfaction with product information (Panopoulos et al., 2022). Based on this literature, the study proposes the following hypothesis:

**H<sub>1</sub>:** Eco-labelling influences consumers' purchase intention.

Eco-branding significantly influences consumer attitudes by embedding environmental values into brand identity, which can lead to either positive or negative evaluations of sustainable product purchases. This integration bolsters trust and cultivates brand loyalty, thereby strengthening the intention to purchase (Bajar et al., 2024; Majeed et al., 2022). Furthermore, eco-branding affects subjective norms by indicating a wider societal approval of sustainability, prompting individuals to align with these norms (Baca & Reshidi, 2025; Rehman & Elahi, 2024). When implemented with transparency and clarity, eco-branding enhances perceived behavioral control, enabling consumers to feel informed and capable of making environmentally responsible purchasing decisions. The combined effect of this Theory of Planned Behavior (TPB) components through eco-branding thus elevates sustainable purchase intentions. By incorporating environmental values into brand identity and communication, eco-branding positively influences consumer perception and purchase intention. The eco-brand image moderates and amplifies the effect of green marketing strategies on purchase intention by fostering consumer trust, brand loyalty, and favorable attitudes towards sustainability (Majeed et al., 2022; Theocharis & Tsekouropoulos, 2025). Based on the above findings, the study proposes the following hypothesis:

**H<sub>2</sub>:** Eco-branding significantly influences consumers' purchase intention.

Consumer perception is a key link between eco-labeling, eco-branding, and the intention to buy. It connects marketing messages with how consumers think and feel. This perception is about how consumers understand environmental signals like labels and brand messages, which then shape their attitudes, beliefs, and intentions to buy (Engel et al., 1986; Schiffman & Wisenblit, 2019). In the Theory of Planned Behavior (TPB), consumer perception is closely tied to 'attitude,' as it helps consumers decide if they like eco-friendly products. Eco-labels and eco-branding need to be seen as trustworthy, clear, and relevant by consumers. This perception turns marketing messages into positive or negative attitudes. For example, if consumers see an eco-label as reliable and informative, they develop positive attitudes towards the product's sustainability, increasing their intention to buy (Baltaci et al., 2024). Perception also affects social norms by making consumers aware of the social aspects of eco-friendly buying. If a brand image or label shows social approval or matches peer values, it increases the pressure to act sustainably, motivating purchase intentions (Wang et al., 2022). Perceived control is also influenced by how easy and accessible consumers think eco-products are. For instance, clear perceptions of product availability and label clarity reduce obstacles and boost confidence in buying green products, affecting intention (Ilgan et al., 2024). Studies show that consumer perception links eco-marketing efforts to purchase intention; eco-labeling and branding improve consumer perceptions (trust, product value, environmental relevance), leading to stronger attitudes, social norms, and perceived control, which drive purchase intention (Apasrawirote & Yawised, 2022; Baltaci et al., 2024). Thus, consumer perception is crucial in turning eco-marketing strategies into real green purchase intentions. Marketers should focus on creating positive consumer perceptions through clear, trustworthy, and engaging eco-labeling and branding to influence sustainable consumer behavior. Based on the findings, the study proposes the following hypotheses:

**H<sub>3</sub>:** Consumer perception mediates in the relationship between eco-labelling and consumer purchase intention.

**H<sub>4</sub>:** Consumer perception mediates in the relationship between eco-branding and consumer purchase intention.

### 2.2 Conceptual Framework

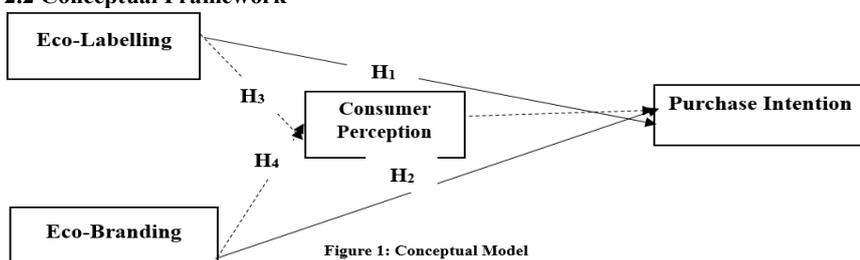


Figure 1: Conceptual Model

**3. Research Methodology**

The present study employed a quantitative research methodology with a cross-sectional design to examine the relationships among the study variables at a single point in time. The sampling frame was developed using data obtained from various websites and platforms associated with small and medium-sized enterprises (SMEs) in Bangladesh, which provided current lists of active SME consumers and stakeholders. The target population comprised consumers residing in Dhaka, Bangladesh, and a stratified sampling technique was utilized to ensure proportional representation of diverse consumer groups. A total of 380 questionnaires were distributed via a structured Google Form, resulting in 250 valid responses, which corresponds to a response rate of approximately 65.79%. The collected data were analyzed using Structural Equation Modeling (SEM), a method that enables the simultaneous examination of relationships among variables.

**4. Results**

Table 1 presents the demographic profile of the respondents included in the study. The gender distribution indicates that the majority of respondents were male (61.5%), while female respondents accounted for 38.5%, suggesting a relatively balanced representation with a higher proportion of male participants. In terms of age, most respondents were between 31 and 35 years (32.0%), followed by those below 30 years (28.0%) and 36–40 years (26.5%), whereas respondents above 40 years constituted the smallest group at 13.5%. Regarding educational attainment, a substantial proportion of respondents held a master’s degree (68.0%), while 32.0% possessed a bachelor’s degree, indicating a highly educated sample. Concerning work experience, 31.0% of the respondents had five years or less experience, followed by 27.5% with 6–10 years, 25.0% with 11–15 years, and 16.5% with more than 15 years of experience. Overall, the demographic characteristics suggest that the sample comprises predominantly well-educated and professionally experienced respondents, providing a suitable basis for further empirical analysis.

**Table 1. Demographic Information**

Variables	Categories	Frequency	Percent
Gender	Male	123	61.5
	Female	77	38.5
Age	Below 30	56	28.0
	31-35 Years	64	32.0
	36-40 Years	53	26.5
	Above 40 Years	27	13.5
Education	Bachelors’ Degree	64	32.0
	Masters’ Degree	136	68.0
Work Experience	5 Years and below	62	31.0
	6-10 Years	55	27.5
	11-15 Years	50	25.0
	Above 15 Years	33	16.5

The reliability and convergent validity of the measurement model were assessed using Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE) following the criteria recommended by Hair et al. (2021). The results indicate satisfactory internal consistency for all constructs, as Cronbach’s alpha values ranged from 0.704 to 0.786, exceeding the minimum acceptable threshold of 0.70. Composite reliability values for Consumer Perception (CP), Consumer Purchase Intention (CPI), Eco-Branding (EB), and Eco-Labeling (EL) ranged from 0.756 to 0.859, demonstrating strong construct reliability. Furthermore, the AVE values ranged from 0.509 to 0.606, all surpassing the recommended cutoff value of 0.50, thereby confirming adequate convergent validity (Hair et al., 2021). Overall, these findings suggest that the measurement model satisfies the reliability and validity requirements proposed by Hair et al. (2021), supporting its suitability for subsequent Structural Equation Modeling (SEM) analysis.

**Table 2. Reliability Test**

Variables	Cronbach's alpha	Composite reliability	Average Variance Extracted (AVE)
Consumer Perception (CP)	0.709	0.808	0.520
Consumer Purchase Intention (CPI)	0.716	0.756	0.509
Eco-Branding (EB)	0.786	0.859	0.606
Eco-Labeling (EL)	0.764	0.847	0.583

Discriminant validity was assessed using the Fornell and Larcker criterion, which requires that the square root of the Average Variance Extracted (AVE) for each construct exceeds its correlations with other constructs. As shown in the matrix, Consumer Perception (CP) had a square root AVE of 0.721, greater than its correlations with CPI (0.543), EB (0.349), and EL (0.282). Consumer Purchase Intention (CPI) exhibited a square root AVE of 0.713, exceeding correlations with CP (0.543), EB (0.356), and EL (0.313). Eco-Branding (EB) and Eco-Labeling (EL) also satisfied the criterion, with square root AVEs of 0.778 and 0.763, respectively, exceeding their inter-construct correlations. These results indicate that each construct shares more variance with its own indicators than with other constructs, confirming adequate discriminant validity of the measurement model in accordance with established guidelines (Fornell & Larcker, 1981; Hair et al., 2019).

**Table 3. Fornell and Larcker Criterion**

Constructs	CP	CPI	EB	EL
CP	<b>0.721</b>			
CPI	0.543	<b>0.713</b>		
EB	0.349	0.356	<b>0.778</b>	
EL	0.282	0.313	0.526	<b>0.763</b>

The coefficient of determination ( $R^2$ ) was used to assess the explanatory power of the structural model. As reported, Consumer Perception (CP) has an  $R^2$  value of 0.326 and an adjusted  $R^2$  of 0.315, indicating that approximately 32.6% of the variance in CP is explained by the predictors in the model. Similarly, Consumer Purchase Intention (CPI) demonstrates an  $R^2$  of 0.382 and an adjusted  $R^2$  of 0.369, suggesting that about 38.2% of the variance in CPI is accounted for by the model. According to Hair et al. (2022),  $R^2$  values of 0.25, 0.50, and 0.75 can be interpreted as weak, moderate, and substantial, respectively, in terms of explanatory power. Therefore, the current model shows a moderate level of explanatory power, indicating that the predictors included are reasonably effective in explaining the variability in consumer perception and purchase behavior, while also leaving room for additional factors to be explored in future research.

**Table 4. Coefficient of Determination (R<sup>2</sup>)**

Constructs	R-square	R-square adjusted
Consumer perception	0.326	0.315
Consumer Purchase Intention	0.382	0.369

The predictive relevance (Q<sup>2</sup>) of the model was assessed using the blindfolding procedure, which evaluates the model's ability to accurately predict endogenous constructs. As shown, Consumer Perception (CP) has a Q<sup>2</sup> value of 0.228, while Consumer Purchase Intention (CPI) has a Q<sup>2</sup> value of 0.235. According to Hair et al. (2022), a Q<sup>2</sup> value greater than zero indicates that the model has predictive relevance for the specific endogenous construct. These results suggest that the structural model possesses moderate predictive accuracy, demonstrating its capability to reliably predict both consumer perception and purchase behavior based on the included exogenous variables. The positive Q<sup>2</sup> values further confirm the practical relevance of the model in explaining and forecasting consumer-related outcomes.

**Table 5. Q<sup>2</sup> Predict**

Variables	Q <sup>2</sup>
Consumer perception	0.228
Consumer Purchase Intention	0.235

The structural model results show that Eco-Labeling (EL) has a significant positive effect on Consumer Purchase Intention (CPI) ( $\beta = 0.654, p = 0.045$ ), supporting H1. This indicates that eco-labels serve as effective product-level cues that directly enhance consumers' purchase intentions. Likewise, Eco-Branding (EB) significantly influences CPI ( $\beta = 0.405, p = 0.020$ ), supporting H2 and suggesting that environmentally oriented brand positioning positively shapes consumers' purchasing decisions. The mediation analysis reveals that Consumer Perception (CP) significantly mediates the relationship between EL and CPI ( $\beta = 0.312, p = 0.045$ ), with the confidence interval excluding zero, thereby supporting H3. This finding indicates that eco-labels influence purchase intention by shaping favorable consumer perceptions. However, H4 is not supported, as CP does not significantly mediate the relationship between EB and CPI ( $\beta = 0.021, p = 0.750$ ). This suggests that eco-branding affects purchase intention primarily through direct mechanisms rather than through consumer perception.

**Table 6. Hypotheses Testing**

Hypotheses	Relationships	Beta ( $\beta$ )	STD.	T Values	P Values	LL 2.5%	UL 97.5%	Decision
H1	EL -> CPI	0.654	0.103	2.025	0.045	-0.108	-0.160	Supported
H2	EB -> CPI	0.405	0.119	2.309	0.020	-0.058	-0.215	Supported
H3	EL -> CP -> CPI	0.312	0.030	3.348	0.045	0.032	0.338	Supported
H4	EB -> CP ->CPI	0.021	0.041	0.318	0.750	-0.052	0.111	Not Supported

Note:  $P < 0.05, t = 1.96$

**5. Discussion**

The structural model analysis provides significant insights into the influence of eco-marketing strategies on consumer purchase intention, both directly and indirectly. Consistent with previous studies, eco-labeling (EL) was found to exert a strong and positive direct impact on consumer purchase intention (CPI) (H1). This finding aligns with a wide array of research that identifies eco-labels as credible informational cues that enhance consumers' environmental awareness and perceived product value, thereby bolstering purchase intentions for sustainable products (Simanjuntak et al., 2025; Rahayu & Zawawi, 2025; Islam & Aktar, 2025). These studies suggest that when eco-labels are clearly communicated and deemed trustworthy, they effectively guide consumers towards environmentally conscious purchasing decisions. Similarly, eco-branding (EB) also demonstrated a significant positive direct effect on CPI (H2), corroborating literature that underscores the role of eco-brand initiatives in shaping consumer attitudes and intentions. Research indicates that eco-branding enhances perceived brand credibility and strengthens the association between products and sustainability values, which in turn fosters green purchase intentions (Li, 2025; Adinugroho et al., 2025). These findings highlight the importance of branding strategies that emphasize environmental values in influencing consumer purchase motivations. Beyond direct effects, the mediation analysis reveals critical differences in how consumer perception channels these influences into purchase intention. For H (3), the significant indirect effect of eco-labeling through consumer perception confirms that eco-labels not only directly attract intention but also enhance consumers' cognitive processing of environmental attributes, a mechanism well-supported in green marketing literature. Studies employing theory-based structural models have similarly found that environmental cues like eco-labels shape underlying cognitive constructs such as attitudes and perceived environmental value, which subsequently affect purchase intentions (Alam et al., 2023). Conversely, although eco-branding positively influenced perception, the indirect effect of EB on CPI via consumer perception was not supported. This suggests that while eco-branding enhances perceptual evaluations, it may not consistently translate into stronger purchase intentions through perception alone. This pattern is reflected in research indicating that the effects of green branding may depend on other psychological processes such as brand trust, emotional attachment, or brand credibility, which were not directly examined in the current mediation test (Adinugroho et al., 2025).

**6. Implications**

This study contributes to the existing literature by integrating key constructs into a comprehensive conceptual framework and offering new insights into purchase intention within the SME context. The proposed model posits that consumer perception significantly influences attitude, subjective norms, and perceived behavioral control, which collectively determine purchase intention. From a theoretical standpoint, this research extends the Theory of Planned Behavior (TPB) by incorporating consumer perception as an antecedent variable, thereby providing a more comprehensive explanation of eco-consumer behavior. Practically, the findings suggest that SMEs can enhance the adoption of eco-products by emphasizing credible eco-labeling, strengthening eco-branding strategies, and improving product accessibility. Moreover, policymakers may foster sustainable consumption by implementing awareness campaigns and offering supportive incentives to encourage environmentally responsible purchasing behavior.

**7. Limitations and Future Study**

This study has several limitations. Firstly, the research is limited to small and medium-sized enterprises (SMEs) in Bangladesh, which may constrain the applicability of the findings to other countries or larger organizations. Secondly, the reliance on self-reported data introduces the possibility of social desirability or response biases. Thirdly, the cross-sectional design captures consumer perceptions at a single point in time, which limits the ability to draw conclusions about causality or long-term behavioral shifts.

Future research could address these limitations by implementing longitudinal studies to track changes in eco-consumer behavior over time, broadening the sample to encompass various sectors and countries for enhanced generalizability, and integrating experimental or behavioral data to supplement self-reported measures. Furthermore, future studies could investigate additional potential determinants, such as cultural values, environmental knowledge, or price sensitivity, to deepen the understanding of eco-consumer behavior in SMEs.

## Conclusion

This study examined how consumer perceptions of eco-labeling and eco-branding influence purchasing intentions within small and medium-sized enterprises (SMEs) in Bangladesh. It underscores the pivotal roles of attitudes and perceived behavioral control, as articulated in the Theory of Planned Behavior. The study found that eco-labeling and eco-branding significantly influenced purchasing intention. Further, the study found that consumer perception significantly mediated the relationship between eco-labeling and purchasing intention, whereas there was insignificant between eco-branding and purchasing intention. The study also provides a transparent understanding of the environmental impact of products, which facilitates buyer decision-making. Future investigations could broaden the scope by examining various contexts incorporating additional variables such as cultural values and environmental knowledge to enrich the understanding of eco-consumer behavior.

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