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# Green Advertising, Eco Labels, Environmental Responsibility and Green Purchase Behavior: Environmental Attitude as mediation

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## Abstract

**Research aims:** This study uses environmental attitude as a mediating factor to investigate how green advertising, eco labels, and environmental responsibility affect green purchase behavior.

**Design/Methodology/Approach:** Data collection using the purposive sampling method, using 138 NPURE cosmetic consumers, with SmartPLS 4.0 statistics tool.

**Research findings:** Green purchase behavior is not positively impacted by green advertising. Green purchase behavior is not positively impacted by eco labels. Green purchase behavior is positively impacted by environmental responsibility. Environmental attitudes are positively impacted by green advertising. Environmental attitudes are positively impacted by eco labels. Environmental attitude is positively impacted by environmental responsibility. Green purchase behavior is not positively impacted by environmental attitude. Additionally, it was discovered that the impact of green advertising on green purchase behavior was not mediated by environmental attitude. Green purchase behavior and eco labeling was not mediated by environmental attitude. Environmental responsibility and green purchase behavior was not mediated by environmental attitude.

**Theoretical Contribution/Originality:** This study demonstrates a negative influence, underscoring the persistently high level of consumer skepticism, in contrast to other research that typically finds a positive association green advertising and green purchase behavior. The insignificant mediation role of environmental attitude provides a new perspective on how psychological factors and consumer behavior interact in the context of sustainability.

**Practitioners/Policy Implications:** Companies need to adopt more transparent and credible communication strategies in implementing green advertising in order to overcome consumer skepticism.

**Research Limitations/Implications:** This study used quantitative methods that may not capture the deeper psychological and emotional aspects related to green purchasing decisions. Therefore, future research should explore qualitative approaches to understand consumer motivations more deeply and integrate external factors that may influence green purchase behavior.

**Keywords:** Green Advertising; Eco Labels; Environmental Responsibility; Green Purchase Behavior; Environmental Attitude

## Introduction

People are beginning to consider more sustainable shopping practices as they become more conscious of how consumption affects the

environment (Bala et al., 2023). Despite the incentives to purchase eco-friendly items, individual motivations to engage in green consumption vary and are impacted by social pressures and personal characteristics (Carrión-Bósquez et al., 2024). There is an interdependent relationship between humans and nature (Nisbet et al., 2009). Humans depend on the natural environment both physically and emotionally, and in turn, the fate of species and ecosystems depends on human actions. However, in today's digital age, most individuals spend their time indoors, and direct contact with nature is increasingly limited (Jaiswal & Kant, 2018). Therefore, efforts are needed to reconnect society with nature to motivate individuals to support sustainability (Bragg, 1996). Major global forums have called for strategic actions to strengthen the human-nature relationship (Zylstra et al., 2014).

Environmental awareness has driven the emergence of a trend toward green product consumption, especially among individuals who identify with environmental protection (Kautish et al., 2019; Sun et al., 2019; Nosi et al., 2020; Carrión-Bósquez et al., 2024). To attract eco-aware customers, businesses are compelled to implement green marketing techniques like eco-labels and green advertising (Sun et al., 2019). Green advertising is realized through various media, including digital advertising, social media campaigns, and product packaging that reflects a commitment to the environment (Hameed and Waris, 2018).

Credible and easy-to-understand eco labels encourage consumers to trust buying products with environmental labels rather than conventional products (Hansmann et al., 2020). Companies must ensure that the green marketing strategies they implement are not only visually appealing but also supported by transparency and honesty in communicating the environmental aspects of their products. Changes in consumer behavior in supporting environmentally friendly products have encouraged various organizations to adopt green marketing strategies to influence customer purchasing decisions. Although green marketing strategies have been widely implemented, there is a gap in environmental attitudes and green purchasing behaviors (Riskos et al., 2021). People with environmental awareness tend to be more dedicated to sustainable consumption as well as supporting eco-friendly purchases (Taufique & Vaithianathan, 2018; Hoyos-Vallejo et al., 2023). However, several studies have shown an attitude-behavior gap, which is the disparity between the decision to buy green items and favorable attitudes toward the environment (Jaiswal & Kant, 2018; Woo & Kim, 2019). Customers' reluctance to purchase green items results from several factors, including their lack of confidence in eco-labelling and green advertising (Sun et al., 2020). Many studies on green purchase behavior still focus on Western countries, while studies in South Asia and developing countries are still limited (Jaiswal & Kant, 2018; Carrión-Bósquez et al., 2024). Studies have shown an attitude-behavior gap, which is a mismatch between positive attitudes towards the environment and actual green purchasing behavior (Jaiswal & Kant, 2018; Woo & Kim, 2019). A contributing factor is the lack of confidence in eco-labels and green advertising (Sun et al., 2020). This study investigates the mediating effects of environmental responsibility, environmental attitude, ecolabeling, and green advertising on green purchase behavior, particularly in Indonesia's beauty business.

In Indonesia, several beauty brands have begun implementing environmentally friendly principles in their production. One example is NPURE, a local skincare brand that uses natural raw materials sourced from local farmers. In 2022, NPURE won the Indonesian World Record award as the first local skincare brand in Indonesia to use whole leaves in every package. Its flagship product, NPURE Centella Asiatica Face Toner, has sold more than 2 million bottles, making it the number one selling toner on TikTok Shop, with an average sale of 100 thousand products per day. This success reflects the increasing consumer preference for natural and sustainable cosmetic products in Indonesia.

However, as the consumption of beauty products and packaging increases, the resulting environmental impact also increases. 35.4% of marine pollution in Indonesia comes from plastic waste, equivalent to 627.80 g/m<sup>2</sup>. The main source of waste was households (54.52%), followed by markets (13.46%), the regional sector (11.54%), offices (7.76%), and commerce (7.44%). These data show that household waste management is a top priority in waste reduction and recycling strategies, as well as the need for stricter regulations in the beauty industry to be more environmentally responsible.

Green product adoption in society can be increased by policies pertaining to incentives for eco-friendly businesses and public education on the value of sustainability (Agarwal & Kumar, 2021). Furthermore, consumers are psychologically influenced to select sustainable products by social pressure and group norms (Sun et al., 2019). This study further analyzes how green product awareness and purchasing behavior in developing countries such as Indonesia.

## Literature Review and Hypotheses Development

### Green Advertising (GA) and Green Purchase Behavior (GPB)

The relationship between GA and GPB shows that GA contribute to increasing consumer intentions to GPB (Rahbar & Wahid, 2011; Chang et al., 2015; Sun et al., 2020; Nguyen-Viet, 2022). GA focuses on disseminating the ecological attributes and sustainability values of a product so as to attract consumer attention in GPB (Nguyen-Viet, 2022). GA also affects consumer perception and attitudes in choosing products with lower environmental impact (Kim et al., 2019). The following hypothesis:

*H<sub>1</sub>: Green Advertising has a positive effect on Green Purchase Behavior.*

### Eco Labels (EL) and Green Purchase Behavior (GPB)

Consumers interpret EL as a representation of products without harmful substances to the environment (Fuerst & Shimizu, 2016). EL provides the value that businesses provide to foster trust and arouse customers' purchase interest in green environmental products (Alamsyah et al., 2020). Customers' intentions to GPB are positively influenced by EL (Nguyen-Viet, 2022; Panopoulos et al., 2023). EL has evolved and influenced customers in

choosing GPB, especially individuals who understand how the use of the product affects the environment (Panopoulos et al., 2023). The following hypothesis:

*H<sub>2</sub>: Eco labels have a positive impact on Green Purchase Behavior.*

### **Environmental Responsibility (ER) and Green Purchase Behavior (GPB)**

ER makes people more willing to engage in eco-friendly activities such as GPB, thereby contributing to environmental sustainability. ER has been shown to predict consumer purchasing behavior, where consumers are more likely to choose products that align with sustainability values (Sharma et al., 2023). The following hypothesis:

*H<sub>3</sub>: Environmental Responsibility has a positive effect on Green Purchase Behavior.*

### **Green Advertising (GA) and Environmental Attitude (EA)**

The components in GA emphasize the benefits of eco-friendly products and educate the public about the negative impacts of consuming conventional products proven to be effective in increasing preferences for eco-friendly products (Sun et al. 2020). GA not only influences GPB but also EA, especially among millennials who are more aware of sustainability issues (Kim et al., 2019). Exposure to green advertising can shape consumers' attitudes towards the environment by increasing their awareness of the importance of environmental protection (Nguyen-Viet, 2022). Thus, GA can be considered a contributing factor to the formation of pro-environmental attitudes, which can ultimately encourage individuals to take real actions in support of sustainability. The following hypothesis:

*H<sub>4</sub>: Green Advertising has a positive effect on Environmental Attitude.*

### **Eco Labels (EL) and Environmental Attitude (EA)**

Millennials who buy organic products are influenced by EL in terms of their EA (Carrión-Bósquez et al. 2024). EL has an effect on EA (Nguyen-Viet, 2022; Panopoulos et al. 2023). EL serves as a communication tool to inform customers about the environmental benefits of organic food (Nguyen-Viet, 2022; Panopoulos et al., 2023). EL positively impacts consumers' environmental sentiment when they care about sustainability (Riskos et al., 2021; Hossain et al., 2022). The following hypothesis:

*H<sub>5</sub>: Eco Labels have a positive effect on Environmental Attitude.*

### **Environmental Responsibility (ER) and Environmental Attitude (EA)**

EA is directly impacted by ER (Ogiemwonyi et al., 2023). ER is still considered an important factor in shaping individuals' EA. Subjective norms in individuals influence the relationship of ER in EA related to purchasing decisions (Tan et al., 2019). ER emphasizes a person's sense of responsibility for the environment while developing EA through a positive attitude towards sustainable environmental products. The following hypothesis:

*H<sub>6</sub>: Environmental Responsibility has a positive effect on Environmental Attitude.*

### **Environmental Attitude (EA) and Green Purchase Behavior (GPB)**

Attitudes encourage individuals to follow sustainable behaviors, including buying environmentally friendly products and avoiding products with high environmental impacts (Ogiemwonyi & Jan, 2023). A pro-environmental attitude is believed to encourage individual involvement in supporting GPB (Varshneya et al., 2017). Attitudes positively influence consumer GPB (Uddin & Khan, 2016). The following hypothesis:

*H<sub>7</sub>: Environmental Attitude has a positive effect on Green Purchase Behavior.*

### **Green Advertising and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as Mediating**

GA not only has a direct effect on GPB but also through the formation of positive EA. EA mediates in the influence of GA on GPB, especially in the context of millennials who consume organic foods (Carrión-Bósquez et al., 2024). Environmental green advertising explains the ecological benefits of a product to increase awareness and shape a positive attitude of consumers towards the environment (Kim et al., 2019). When individuals have pro-environmental attitudes, they tend to adopt sustainable consumption behaviors, including purchasing decisions (Nguyen-Viet, 2022). The following hypothesis:

*H<sub>8</sub>: Environmental Attitude mediates the positive Influence of Green Advertising on Green Purchase Behavior.*

### **Eco Labels (EL) and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as mediating**

EA mediates the influence of EL and GPB (Carrión-Bósquez et al., 2024). Eco labels serve as a cue for customers to match personal values related to sustainability with their purchases, resulting in a preference for items that demonstrate ecological responsibility (Nguyen-Viet, 2022). By simplifying the identification of eco-friendly products, EL reduces asymmetric information. EL increases the impact of EA when customers have a positive attitude towards the environment as well as motivate them to choose goods that support sustainability and environmental preservation (Hossain et al., 2022). The following hypothesis:

*H<sub>9</sub>: Environmental Attitude mediates the positive Influence of Eco Labels on Green Purchase Behavior.*

### **Environmental Responsibility (ER) and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as mediating**

One of the main forces behind behaviors that lead to favorable consequences and make more environmentally friendly decisions is the drive to act (Ajzen, 1991). Customers' desire to buy eco-friendly items and act responsibly may be influenced by the rise in ER (Ogiemwonyi et al., 2023). Empirical studies explain that ER affects EA (Ogiemwonyi et al., 2023). ER explains the sense of consumer responsibility for the environment while increasing EA through a positive attitude towards environmental products (Ogiemwonyi et al., 2023) and a pro-environmental attitude is believed to encourage individual involvement in supporting GPB (Varshneya et al., 2017). The following hypothesis:

*H<sub>10</sub>: Environmental Attitude mediates the positive Influence of Environmental Responsibility on Green Purchase Behavior.*

## **Research Methods**

The sample of this study was 138 NPURE cosmetic consumers, selected through a purposive sampling with certain criteria: a) Gen Z with the ability to buy green products; b) Gen Z was specifically chosen for this study because they are known to have better environmental awareness than previous generations. As digital natives, they are more exposed to environmental issues through social media and various digital platforms, which makes them more concerned about sustainability than older generations. In addition, Gen Z tends to be more open to innovation, including eco-friendly products, as well as critical in assessing the sustainability claims made by brands. c) In addition, selecting Gen Z who are currently pursuing higher education provides a methodological advantage because they are more likely to understand environmental concepts and provide more accurate answers in this study. Green advertising (GA) has 3 items from Sun et al. (2020). Eco labels (EL) have 3 items from Riskos et al. (2021). Environmental responsibility (ER) has 5 items from Kumar and Ghodeswar (2015) and Liobikienė and Poškus (2019). Environmental attitude (EA) has 3 items from Trivedi et al. (2018). Green purchase behavior (GPB) has 4 items from Ogiemwonyi (2022).

## **Results and Discussion**

### **Demographic Statistics Respondent Characteristics**

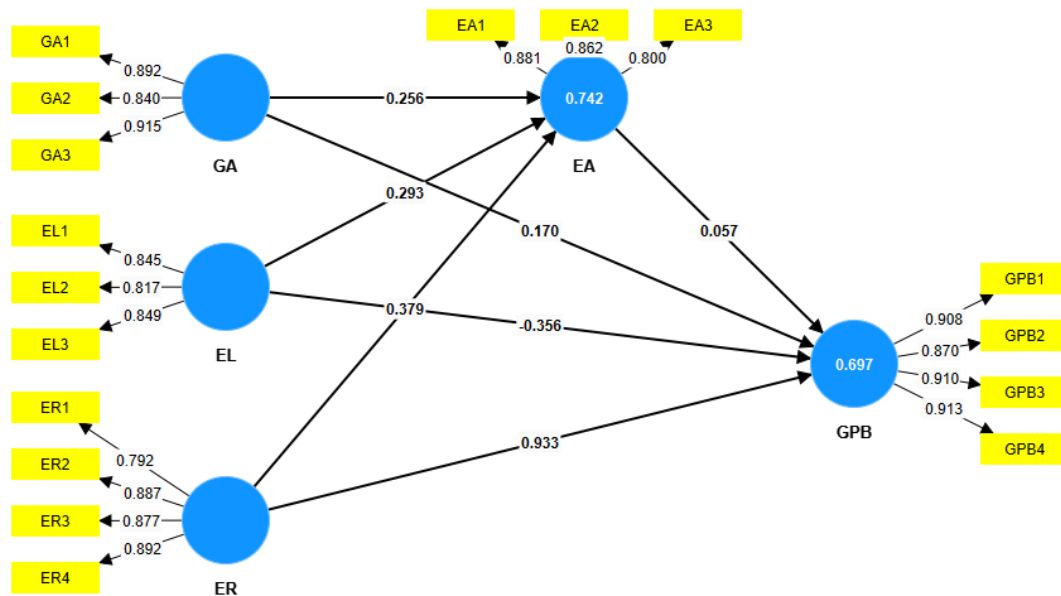
In table 1, male and female respondents amounted to 22% and 78%. Respondents aged 18-22 years comprised 16.7%, 23-27 years comprised 58%, and 28-32 years comprised 25.3%. Respondents with high school/diploma education were 13%, bachelor's 57%, and

master's 30%. The income of respondents from 1 to 5 million is 63%, that of 5 to 10 million is 28%, and that of more than 10 million is 9%.

**Table 1** Demographic Statistics

Characteristics	Category	Frequency	Percentage
<b>Gender</b>	Male	30	22%
	Female	108	78%
<b>Age</b>	18-22 years	23	16.7%
	23-27 years	80	58%
	28-32 years	35	25.3%
	High School/Diploma	18	13%
<b>Education</b>	Bachelor	78	57%
	Masters	42	30%
	1-5 million	87	63%
<b>Income</b>	5-10 million	38	28%
	>10 million	13	9%

### Measurement of Variables



**Figure 1** Results of Variable Measurement

In figure 1, validity testing included checking indicator loading and above 0.70 is recommended (Hair et al., 2021). The loading of all measurement items for all variables was above the threshold of 0.70, except for ER5. Table 2 shows the results of the reliability test on each variable.

### Discriminant Reliability Value

**Table 2** Discriminant Reliability Results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EA	0.805	0.808	0.885	0.720
EL	0.786	0.787	0.875	0.701
ER	0.885	0.884	0.921	0.745
GA	0.858	0.868	0.914	0.780
GPB	0.922	0.923	0.945	0.811

**Table 3** Direct and Indirect Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
GA -> GPB	0.170	0.176	0.090	1.897	0.058
EL -> GPB	-0.356	-0.358	0.113	3.146	0.002
ER -> GPB	0.933	0.930	0.096	9.689	0.000
GA -> EA	0.256	0.249	0.112	2.286	0.022
EL -> EA	0.293	0.295	0.121	2.428	0.015
ER -> EA	0.379	0.387	0.106	3.587	0.000
EA -> GPB	0.057	0.057	0.112	0.507	0.612
EL -> EA -> GPB	0.017	0.021	0.038	0.439	0.661
ER -> EA -> GPB	0.022	0.022	0.046	0.471	0.638
GA -> EA -> GPB	0.015	0.010	0.030	0.489	0.625

### Green Advertising (GA) and Green Purchase Behavior (GPB)

GA did not have a positive effect on the GPB. Consumers are becoming more skeptical of environmental claims from companies in their advertising (Do Paço & Reis, 2012). In addition, Matthes et al. (2014) highlighted that when green advertising is considered excessive or inconsistent with brand image, consumers tend to doubt the validity of the information conveyed. Therefore, companies must ensure that their green advertising strategies are transparent, consistent, and supported by real actions in environmental protection efforts to increase consumer trust and encourage more sustainable purchasing behavior.

### Eco Labels (EL) and Green Purchase Behavior (GPB)

EL had no beneficial effect on GPB. This shows that customers are not directly encouraged to buy green products because a product has an eco-label. This finding contradicts several other studies that claim eco-labels can raise customer awareness and trust in the sustainability of products, which in turn encourages them to buy green products (Nguyen-Viet, 2022). The legitimacy of environmental labels has a significant impact on their efficacy in the eyes of the consumers (Fuerst & Shimizu, 2016). Additionally, despite



individual claims to care about the environment, customers don't always prioritize eco-labels when making judgments about what to buy (Song et al., 2019; Nguyen & Le, 2020). Customers' ultimate decisions are frequently influenced more by other elements, including brand preferences, product quality, and pricing. Riskos et al. (2021) also support this finding, showing that while eco-labels serve as a communication tool for businesses to inform consumers about a product's environmentally friendly features, their ability to effectively encourage green purchasing behavior still depends on how well the label is understood and trusted by consumers.

### **Environmental Responsibility (ER) and Green Purchase Behavior (GPB)**

GPB is positively affected by ER. People who are responsible for the environment tend to follow sustainable consumption practices (Nguyen et al., 2019). ER measures how much people feel responsible for the effect of their purchasing decisions on the environment while also leading them to choose eco-friendly products (Joshi & Rahman, 2019). Price, product quality, and brand preference are significant determinants in purchasing decisions, although ER has been shown to have a considerable impact on GPB (Han et al., 2017). People with environmental awareness make environmentally green purchases (Kumar & Ghodeswar, 2015). It relates to the idea of morality because people have a moral obligation to act in a way that promotes environmental preservation by purchasing goods with fewer adverse effects on the environment (Schultz et al., 2005).

### **Green Advertising (GA) and Environmental Attitude (EA)**

GA positively affected EA. GA provides environmental benefits from the existence of products and encourages consumers to develop a more positive attitude towards environmental sustainability because they feel more informed and educated about the benefits of products for the ecosystem (Nyilasy et al., 2014; Sun et al., 2020). GA is considered transparent and not excessive in environmental claims increasing consumers' positive attitudes towards the product (Schmuck et al., 2018).

### **Eco Labels (EL) and Environmental Attitude (EA)**

EA was positively influenced by EL. EL serves as a communication tool that offers clear information about a product's ecological impact, influencing consumer attitudes, and perceptions toward sustainable consumption (Hameed & Waris, 2018; Song et al., 2019; Nguyen & Le, 2020). The presence of eco-labels gives a positive signal to consumers regarding the company's commitment to sustainable business practices, strengthening consumer trust and awareness of the importance of choosing products with lower environmental impact (Panopoulos et al., 2023). If consumers are skeptical about the validity of environmental claims submitted through EL, then the impact on EA may be reduced (Riskos et al., 2021).

### **Environmental Responsibility (ER) and Environmental Attitude (EA)**

ER had a positive effect on EA. Research by Song et al., (2019) also confirmed that a person's level of environmental responsibility influences how individuals assess the importance of sustainable consumption, ultimately impacting their overall attitude towards the environment. Environmental responsibility in individuals increases positive attitudes towards environmental attitudes because individuals have the control and morals to behave environmentally friendly (Ajzen, 1991). This contributes to more sustainable individual consumption decisions and reinforces eco-friendly habits in everyday life.

### **Environmental Attitude (EA) and Green Purchase Behavior (GPB)**

EA did not exert a positive effect on GPB. Nevertheless, several studies have found that although people may have a favorable attitude toward the environment, this does not always translate into a decision to buy eco-friendly goods (Joshi & Rahman, 2015). This phenomenon can be explained by the attitude-behavior gap, which states that even when a person has a positive attitude toward the environment, their purchasing decisions may be influenced by other factors. The transformation of beliefs into actual action might also be hampered by disparities in awareness, personal experience, and risk perception of eco-friendly items.

### **Green Advertising (EA) and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as Mediating**

EA did not mediate the effect of ER on GPB activity. This means that although GA has the potential to increase environmental awareness, consumer skepticism towards green advertising can hinder the formation of GPB (Do Paço & Reis, 2012). Schmuck et al. (2018) showed that excessive green advertising or unproven environmental claims can cause a greenwashing effect, which ultimately reduces consumers' trust in green products. Pittman et al., (2022) stated that the effectiveness of GA is highly dependent on the veracity of the message conveyed, the clarity of information about the environmental benefits of the product, and the psychological factors of consumers in assessing the authenticity of the claim. Thus, although GA can shape positive attitudes towards the environment, it does not necessarily encourage GPB if consumers still doubt the validity of the environmental claims conveyed in the advertisement.

### **Eco Labels (EL) and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as Mediating**

The impact of EL on GPB was not mediated by EA. While EL can raise consumer awareness of environmental issues, their influence on purchase decisions still depends on how well-informed and trustworthy the label is (Panopoulos et al., 2023). External factors such as product quality, price, and social preferences often influence purchase decisions (Nguyen & Le, 2020). Although eco-labels encourage people to develop good opinions about eco-friendly products, these opinions do not always lead to true GPB.

### **Environmental Responsibility (ER) and Green Purchase Behavior (GPB) with Environmental Attitude (EA) as Mediating**

EA did not mediate the effect of EL on GPB. Although individual environmental responsibility can shape positive attitudes towards the environment, it does not directly lead to green product purchasing decisions. Song et al. (2019) found an attitude-behavior gap in the form of a mismatch between a good view of the environment and real behavior about purchasing eco-friendly products. This gap is due to several factors, including the limited availability of eco-friendly goods, higher costs than traditional products, or a lack of confidence in producers' environmental claims (Hameed & Waris, 2018).

## **Conclusion**

GA did not have a positive effect on the GPB. EL did not exert a positive effect on GPB. ER had a positive effect on GPB. GA positively affected EA. EL had a positive effect on EA. ER had a positive effect on EA. EA did not exert a positive effect on GPB. Furthermore, regarding the mediation effect, EA did not mediate the effect of GA on GPB. EA did not mediate the effect of EL on GPB. EA did not mediate the effect of ER on GPB activity. Marketing strategies, such as case studies or customer testimonials, are important for demonstrating the effectiveness of green products in everyday life by utilizing a behavioral marketing approach to increase consumer interest in purchasing green products. EA do not always lead to GPB, marketing strategies must consider other psychological factors. Companies can apply nudging techniques by offering discounts or loyalty programs for consumers who buy environmentally friendly products to motivate them to make repeat purchases.

The generalization of the results to other consumer segments with different levels of environmental awareness is feasible. Consumers tend to consider social aspects in their purchasing decisions, including recommendations from friends or family. Therefore, further research should explore how social norms and cultural values impact the effectiveness of GPB.

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