

# Green practice on consumer-based green brand equity: Mediating role of green brand attachment

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## ABSTRACT

**Purpose**–This study aims to determine the effect of green practices on consumer-based green brand equity through green brand attachment as a mediating variable. To build strong consumer-based green brand equity, Wardah needs to implement appropriate green practice strategies. In addition, Wardah needs to build strong green brand attachment to increase consumer-based green brand equity.

**Methodology**–Sampling was conducted using purposive sampling techniques. The sample consisted of 155 Wardah consumers in Indonesia. The questionnaire was distributed online and filled out by respondents. The data obtained from respondents was then tabulated and processed using Smart PLS 4.0. This study used validity and reliability tests to ensure the quality of the research instruments, as well as hypothesis testing to analyze the effect between variables based on respondent data.

**Findings**–This study proves that green practices have a positive effect on green brand attachment and consumer-based green brand equity. Green brand attachment has a positive effect on consumer-based green brand equity. In addition, green brand attachment has also been proved as a partial mediator in the relationship between green practices and consumer-based green brand equity. The results of this study indicate that consumers form emotional bonds with brands that consistently implement green practices. Consumers who have emotional attachments will play a strategic role in increasing overall brand equity and competitive position in the green market.

**Research Limitations**–The limitations of this study lie in the small number of samples and its focus solely on Wardah products. Therefore, the findings of research cannot be used as a reference to describe the respondents' views or the conditions of other products.

**Novelty**–This research is expected to contribute to the skincare and makeup industry so that companies can implement green practices and green brand attachment. The implementation of these two things can contribute positively to consumer loyalty and equity.

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## 1. Introduction

Increased awareness of environmental issues requires communities to adopt environmentally conscious behaviors and skills in their daily lives (Yildirim et al., 2025). Increased consumption of environmentally friendly products shows that communities play an active role in sustainable industry development and resource efficiency (Zhao et al., 2020). The high global demand for sustainable solutions has led companies to integrate product promotion with green practices to build consumer attachment. This has encouraged the industry to implement green practices to preserve the environment while maintaining the company's competitiveness (Surbakti et al., 2025). Companies in Indonesia are beginning to implement reactive strategies or environmentally friendly measures to meet government standards in every line of their business (Ismiranti & Wibowo, 2018). Highly competitive pressure and consumer preferences for green products encourage companies to focus on green practices and build brand loyalty and value through sustainable business activities.

Green practices are a combination of environmentally friendly principles and product innovation applied by companies to improve sustainability and provide added value to consumers (Akude et al., 2025). Green practices not only contribute to environmental conservation but also enhance positive consumer perceptions and strengthen brand attachment (Ko & Jeon 2024). Through green practices, companies strive to respond to the needs of consumers who care about environmental issues by offering products that are differentiated by their environmental friendliness (Wu & Liu, 2022). To increase their competitive advantage, companies implement green practices such as complying with environmentally friendly regulations, building a positive brand image, and improving company performance through the application of environmentally friendly principles (Wang et al., 2021). Globally, the implementation of green practices is increasing in line with regulatory pressure and growing environmental awareness. The 2024 East Ventures Digital Competitiveness Index report found that various industry sectors in Indonesia are integrating environmental responsibility and sustainability values into their strategies, tailoring product offerings to environmentally conscious consumers, and strengthening their commitment to environmental, social, and governance. These findings indicate that green practices are not only a form of social responsibility but also a key strategy in sustainable marketing that strengthens a company's reputation and competitive advantage (González-Viralta et al., 2023).

In the context of modern business competition, the implementation of green practices requires companies to shift from traditional business practices to sustainable innovation that prioritizes energy efficiency to achieve social, environmental, and financial benefits simultaneously (Chen et al., 2024). By implementing green practices in marketing strategies, companies seek to build consumer engagement and trust in their commitment to sustainability (Wu & Long, 2024). Consistent implementation of green practices encourages the formation of an ecological image of products and influences consumer attitudes, which, in turn, increases consumer-based green brand equity (Rahimah & Yulijai, 2024). Thus, green practices are not only a company's responsibility to the environment but also a strategic foundation for building and maintaining consumer-based green brand equity (Jalu et al., 2024).

Consumer-based green brand equity is a consumer's perception of brand awareness, brand association, perceived quality, and brand loyalty (Park & Namkung, 2022). Consumer-based green brand equity refers to consumers' assessments and views of a brand (Nuseir & Elrefae, 2022). Positive consumer perceptions of green brand aspects are formed by the green practices carried out by companies, which ultimately influence the main aspects of consumer-based green brand equity, such as attachment, perception, and consumer loyalty to green brands (Khan et al., 2022; Qiao et al., 2022). According to Lin et al. (2021), companies that implement green practices should strengthen green practices throughout the value chain, develop green innovations to stimulate the effectiveness of sustainable strategies, and optimize resources to build stronger consumer-based green brand equity.

Green practices positively affect green brand attachment (Ko & Jeon, 2024). Green brand attachment is the emotional and behavioral response of consumers to green practices that demonstrate consumer attachment and closeness to brands committed to environmental values



(Kamel & Sayed, 2024). Consistent implementation of green practices strengthens the identity of environmentally friendly brands and builds consumer trust, thereby encouraging green brand attachment as a form of emotional attachment (Sun et al., 2024). Conversely, when green practices are only carried out symbolically, consumer trust in the company's environmental commitment may decline, thereby negatively impacting emotional relationships and reducing green brand attachment (Tu et al., 2024). According to Keller (1993), green brand attachment creates an affective foundation that strengthens the consumer-based green brand equity framework in the form of quality perceptions, associations, and consumer loyalty. Emotional attachment is the basis for the formation of consumer-based green brand equity because the emotional commitment formed through the reciprocal relationship between consumers and brands creates personal involvement and increases positive perceptions of consumer-based green brand equity elements (Tran & Le-Anh, 2025). Thus, the implementation of green practices increases green brand attachment through consumers' emotional closeness to the brand (Ko & Jeon, 2024), which ultimately drives consumer-based green brand equity (Khan et al., 2022). Khoirala and Alfansi (2024) found that green brand attachment acts as a mediating variable between green practices and customer-based green brand equity.

The theory of planned behavior (TPB) by Ajzen (1991) states that a person's behavior is influenced by their intention to behave, which is shaped by their attitude toward the behavior, prevailing norms, and their perception of control over the behavior. The TPB explains the psychological mechanisms of consumers' attitudes toward companies' green practices. Green practices act as external stimuli in shaping positive attitudes toward companies, such as recommendations, willingness to pay more, and participation in loyalty programs (González-Viralta et al., 2023). Positive evaluations of green practices encourage consumers to identify themselves and form green brand attachments with companies that are considered to uphold sustainability values and align with their personal values (Ko & Jeon, 2024). Furthermore, positive evaluations in the form of green brand attachment encourage actual behavior in the form of consumer-based green brand equity. Consumers with green brand attachment consider the brand to be highly credible, thereby increasing consumer-based green brand equity through loyalty and company commitment (Khan et al., 2022). Thus, green practices are external stimuli that encourage green brand attachment responses, which ultimately lead to consumer-based green brand equity.

Wardah is a halal cosmetics brand in Indonesia founded in 1995 that consistently implements green practices in every element of its product presentation. Wardah consistently manufactures halal products that are cruelty-free, consume low energy, and dispose of production waste responsibly. Wardah is also active in the use until finished campaign, which encourages consumers to use products until they are finished and recycle their packaging. According to Paragon's 2023 sustainability report, Wardah uses environmentally friendly materials such as plant-based ingredients and biodegradable compounds as part of its efforts to reduce environmental impact. Additionally, Paragon Company, Wardah's parent company, won first place in the 2023 Environment Award organized by Food and Drug Administration, demonstrating that Wardah has implemented green practices tangibly. Companies that establish green practices as a paragon will strengthen their brand position in the halal cosmetics market and gain consumer trust (Chen, 2010).

Wardah has a broad and loyal consumer base in Indonesia. This is evidenced by its top brand index rankings in the categories of facial cosmetics, lipsticks, moisturizers, and others. The implementation of green practices and consistent top brand index rankings over the past few years do not necessarily lead to green brand attachment. Consumer-based green brand equity is not only obtained through the green practices carried out by the company but also to the extent that consumers are aware of, familiar with, associate with, and have different memories of the brand (Farjam & Hongyi, 2015). Therefore, it is important to measure the extent to which Wardah's green practices can influence green brand attachment and consumer-based green brand equity. In addition, research on consumer-based green brand equity for Wardah products is limited. This study attempts to fill the gap between the sustainability



strategies implemented by companies and the sustainability perceptions obtained by consumers.

## 2. Literature Review and Hypothesis Development

Ajzen's (1991) TPB explains that a person's behavior is influenced by intentions formed from external stimuli that are in line with personal values. Green practices are external stimuli that shape consumer attitudes toward a company. Green practices are the application of environmentally friendly principles to marketing and product management practices that promote overall corporate sustainability (Wang et al., 2022). The adoption of green practices by companies shapes consumer perceptions that these companies are environmentally responsible and demonstrates their commitment to a sustainable and ecologically conscious future (González-Viralta et al., 2023). This implementation creates a positive impression of the company's brand (Brahma & Debnath, 2025). This positive attitude can arise because consumers feel that they are in harmony with the green practices of the company (Kang et al., 2012). Consumers' positive perceptions of a brand's commitment to environmental friendliness will increase the value and strength of consumer-based green brand equity in the eyes of consumers (Dananjoyo & Udin, 2023). When consumers assign a positive value to a brand and consider that the brand provides added value to individuals and the environment, this encourages consumer-based green brand equity (Özçifçi, 2017). Research has found that the more consistent a company's green practices are, the more it will increase consumer-based green brand equity. Thus, green practices influence consumer-based green brand equity (Khan et al., 2022; González-Viralta et al., 2023; Maaliky et al., 2025). **H<sub>1</sub>: Green Practices Has a Positive Effect Consumer-Based Green Brand Equity.**

Based on Ajzen's (1991) TPB, a person's tendency to behave is influenced by external values that shape their attitudes toward that behavior. The green practices implemented by companies act as external stimuli that influence consumers' psychological responses. Green practices refer to comprehensive marketing strategies that prioritize sustainable practices and minimize negative environmental impacts (García-Salirrosas & Rondon-Eusebio, 2022). The implementation of green practices elicits a psychological response because consumers feel that the values demonstrated by the company are in line with their personalities (Monfort et al., 2025). Consumer psychological responses, such as a preference for choosing these products over others, as well as the pleasure and pride that arise from choosing environmentally friendly products, form an emotional attachment between consumers and brands, known as green brand attachment (Jannah et al., 2024). Consumers with a green brand attachment show a strong commitment to that brand (Carroll & Ahuvia, 2006). Thus, green practices can influence green brand attachment (Hussain & Waheed, 2016; Bekar et al., 2020; Jannah et al., 2025). **H<sub>2</sub>: Green Practice Has a Positive Effect on Green Brand Attachment.**

According to Ajzen's (1991) TPB, attitudes and affections can influence a person's intentions and behavior. Green brand attachment refers to consumers' emotional attachment to brands committed to environmentally friendly practices, which determines their emotional, cognitive, and behavioral responses to those brands (Wu et al., 2024). This attachment is formed because consumers perceive the brand as a reflection of their personal values and identity in terms of environmental conservation (Shimul, 2022). In addition, the consistency of the signals conveyed by the brand, clarity, and credibility create a sense of trust and psychological closeness between consumers and the brand, which forms green brand attachment (Reitsamer & Brunner-Sperdin, 2021). Green brand attachment, in the form of positive emotional experiences, can build a deep relationship between the brand and consumers, strengthen positive perceptions of the brand, and increase consumers' tendency to support and recommend it (Abdillah et al., 2023). When green brand attachment is formed, consumers tend to strengthen brand association and recognition and show loyalty to the brand as key elements in shaping consumer-based green brand equity (Ahmadian et al., 2023). Companies that can effectively convey sustainability values will increase consumer-based



green brand equity (Chan, 2025). Research has found that the higher the green brand attachment of consumers, the stronger the consumer-based green brand equity (Ko & Jeon, 2024). Green brand attachment can influence consumer-based green brand equity (Khan et al., 2022; Puriwat & Tripopsakul, 2023; Le et al., 2025). **H<sub>3</sub>: Green Brand Attachment Has a Positive Effect on Consumer-Based Green Brand Equity.**

Ajzen's (1991) TPB explains that individual behavior is influenced by intentions formed by three main components: attitude, norms, and perceived control. Green practices implemented by companies can shape consumers' beliefs, positive attitudes, and emotional responses. The implementation of green practices demonstrates a company's desire to achieve sustainable development goals and protect the environment through marketing practices that contribute to the welfare of society (Mathur et al., 2025). When companies consistently implement green practices, consumers perceive the brand as committed to sustainability, responsible growth, and environmental care (Sander et al., 2021). This elicits a positive emotional response because consumers feel that the sustainability values promoted by the brand align with their own values (Mai et al., 2023). This alignment of values increases trust, pride, and satisfaction, thereby strengthening the psychological relationship between consumers and the brand (Ko & Jeon, 2024). In the long term, consumers' psychological relationship with brands rooted in trust, sincerity, and honesty will develop into deep green brand attachment because consumers feel that these brands not only have quality products but also have sustainability values and demonstrate sincere empathy (Xu et al., 2021). Accordingly, green brand attachment acts as a mediator that explains the relationship between green practices and consumer-based green brand equity (Khan et al., 2022). Green brand attachment encourages consumers to develop a strong and unique relationship with the brand (Wang, 2024). This creates associations with the brand, enhances positive perceptions, and influences consumer-based green brand equity (Chen, 2010; Lin et al., 2011). Thus, green practices can positively influence consumer-based green brand equity through green attachment (Khan et al., 2022). **H<sub>4</sub>: Green Brand Attachment Mediates the Relationship between Green Practices and Consumer-Based Green Brand Equity.**

Figure 1 shows the model framework regarding factors that influence consumer-based green brand equity. Green practices and green brand attachment have a positive effect on consumer-based green brand equity. Furthermore, green brand attachment mediates the relationship between green practices and consumer-based green brand equity.

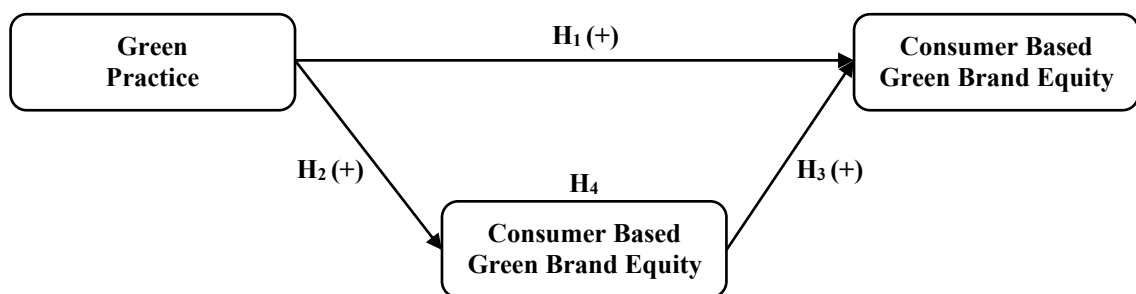


Figure 1. Research Model

### 3. Research Methodology

The population in this study was Wardah consumers in Indonesia, with a sample size of 155. According to Hair et al. (2010), the sample size should be between 100 and 500 people, and this study met the sample size requirement. The sample was selected using purposive sampling with several respondent criteria: age between 18 and 60 years, use of Wardah products, and concern about environmental issues. The questionnaire was distributed online through social media platforms, such as Instagram, WhatsApp, and Telegram, via Google Forms to collect data. Participation was voluntary, and no incentives were offered. Each



variable had indicator items that were assessed using a Likert scale 1-5. Green practice has 4 indicators from Khan et al. (2022), consumer-based green brand equity has 4 indicators from Khan et al. (2022), and green brand attachment has 3 indicators from Khan et al. (2022).

The data were measured for validity and reliability, and regression tests were conducted using Smart-PLS. An indicator item is considered valid if its correlation value is greater than 0.7 (Ghozali, 2021). Invalid indicator items were removed from the respondent data. A reliability test was then conducted, where a variable was considered reliable if the Cronbach's alpha value exceeded 0.6 and the composite reliability was above 0.7 (Ghozali, 2021). Next, a hypothesis test was conducted on the respondent's data. According to Ghozali (2021), the hypothesis is accepted if the p-value is lower than 0.05.

#### 4. Result and Discussion

##### Characteristics of Respondent

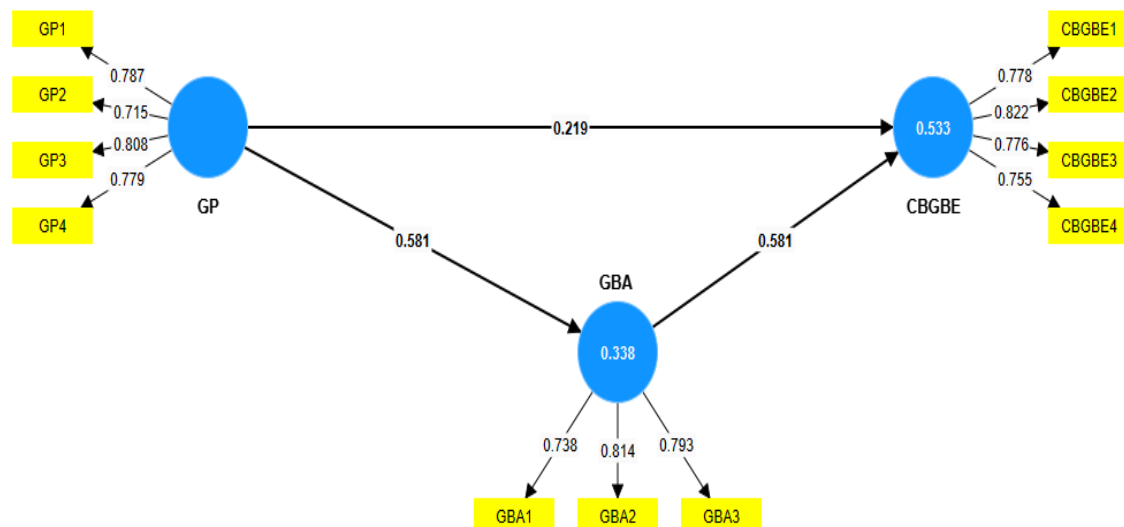
Table 1 presents the respondents' characteristics. Based on gender, the majority of respondents were women (105 respondents, 88.39%). Based on age, the majority of respondents were in the 18-30 age range, with 135 respondents (87.09%). Based on education, most respondents had a bachelor's degree (104 respondents, 67.74%).

**Table 1. Characteristics of Respondents**

Characteristics	Description	Frequency	Percentage
Gender	Male	18	11.61
	Female	105	88.39
Age	18-30	135	87.09
	31-40	14	9.03
	41-50	6	3.88
	51-60	0	0
	61-70	0	0
Education Level	High School	31	20
	Diploma	10	6.45
	Bachelor	104	67.74
	Master/Postgraduate	10	6.45

##### Validity Test

Figure 2 and Table 2 show the validity test values for each variable: green practice and consumer-based green brand equity. and green brand attachment. According to Ghozali (2021), the validity value must be above 0.7. The instruments in this study had a discriminant validity value above 0.7; therefore, the variables in this study were valid and could be used.



**Figure 2. Measurement Model**



**Table 2. Validity Test Result**

Indicator	Green Practice	Green Brand Attachment	Consumer Based-Green Brand Equity
GP1	0.787		
GP2	0.715		
GP3	0.808		
GP4	0.779		
GBA1		0.738	
GBA2		0.814	
GBA3		0.793	
CBGBE1			0.778
CBGBE2			0.822
CBGBE3			0.776
CBGBE4			0.755

### Reliability Test

Table 3 presents the results of the reliability tests. Based on the reliability test results, the green practice and consumer-based green brand equity variables were declared reliable because the Cronbach's alpha value exceeded 0.6 and the composite reliability value exceeded 0.7. The green brand attachment variable had a Cronbach's alpha value of 0.681 and a composite reliability (rho\_a) value of 0.682. This value is still below 0.7, indicating that the internal consistency is not yet fully strong. However, green brand attachment has a composite reliability value (rho\_c) of 0.825 and an AVE value of 0.612, which meets the criteria of Ghozali (2021) and Hair et al. (2020). Therefore, it is still acceptable and considered reliable.

**Table 3. Reliability Test Result**

Variable	Cronbach's Alpha	Composite Reliability (rho a)	Composite Reliability (rho c)	Average Variance Extracted (AVE)
Green Practice	0.775	0.777	0.856	0.597
Green Brand Attachment	0.681	0.682	0.825	0.612
Consumer Based-Green Brand Equity	0.790	0.792	0.864	0.613

### Hypothesis Test

Table 4 presents the results of the hypotheses. Based on the hypothesis test results, all the hypotheses were accepted. All hypotheses showed a positive direction and had p-values below 0.5. Green practices and green brand attachment positively affect consumer-based green brand equity. Green brand attachment served as a mediator between green practices and consumer-based green brand equity.

**Table 4. Hypothesis Test Result**

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
Green Practice → Consumer Based-Green Brand Equity	0.556	0.558	0.069	8.118	0.012
Green Practice → Green Brand Attachment	0.581	0.583	0.070	8.357	0.000
Green Brand Attachment → Consumer Based-Green Brand Equity	0.581	0.580	0.084	6.934	0.000
Green Practice → Green Brand Attachment → Consumer Based-Green Brand Equity	0.338	0.338	0.065	5.174	0.000



## Discussion

### The Effect of Green Practice on Consumer-Based Green Brand Equity

The results of the above study show that green practices positively affect consumer-based green brand equity. The results of this hypothesis are based on the TPB developed by Ajzen (1991), in which green practices act as external stimuli that influence and shape consumer-based green brand equity. The results of this study are consistent with those of previous studies from González-Viralta et al. (2023). They explain that consumer perceptions of brands are not only shaped by product quality but are also reinforced by companies' green practices, thereby increasing consumer-based green brand equity (Ha, 2022). Consumers who recognize the ethical value of consistent green practices by brands, such as the use of environmentally friendly raw materials, energy efficiency, and responsible waste management, consider these brands more credible and trustworthy than their competitors (Amir & Daryal, 2024). The credibility of green arguments, consistency in fulfilling environmental promises, and the brand's ability to address environmental issues increase consumer-based green brand equity, such as associations, positive perceptions, and loyalty to the brand (Khan et al., 2022). If a brand fails to meet the promised green practice standards, consumers will doubt its commitment to sustainability, thereby reducing consumer-based green brand equity (Li & Sun, 2022). Consumers with high consumer-based green brand equity exhibit positive behaviors, such as recommending the brand to others, sharing positive experiences, and remaining loyal to the brand because it aligns with their sustainability values (Mehdikhani & Valmohammadi, 2022). Wardah demonstrates the implementation of green practices through the use of environmentally friendly raw materials, efficient production processes, and sustainable campaigns. This influences consumers' positive perceptions of their brand, thereby increasing their consumer-based green brand equity. Thus, green practices have been proven to play an important role in building consumer-based green brand equity.

### The effect of green practice on green brand attachment

The results of the above study show that green practices positively affect green brand attachment. Wardah's green practices have been shown to increase consumers' green brand attachment. Wardah creates the perception that its products engage in green practices, which encourages consumer attachment. Green practices are efforts made by companies to provide environmentally friendly products throughout the entire process, from production and packaging to distribution (Reddy et al., 2023). Consumers tend to trust and feel secure with brands that meet their expectations and are committed to sustainability issues, thereby encouraging green brand attachment (Javed et al., 2024). The formation of green brand attachment makes consumers more attached, emotional, and loyal to the brand (Li & Sun, 2022). Companies that only make green claims without actual green practices weaken consumers' green brand attachment (Amer & El, 2023). The results of this hypothesis are supported by TPB, which explains green practices as external stimuli that influence consumer attitudes and effectiveness, thereby forming green brand attachment. Previous research has confirmed that consistent green practices can influence green brand attachment (Bekar et al., 2020; Khan et al., 2022).

### The Effect of Green Brand Attachment on Consumer Based-Green Brand Equity

The results of the above study show that green brand attachment positively affects consumer-based green brand equity. The TPB is consistent with this hypothesis. According to the TPB, consumer attitudes and affections can shape a person's intentions and behavior. Green brand attachment refers to the cognition and affection formed from the emotional relationship between consumers and brands, the ability of brands to build emotional closeness with consumers, and their unique value (Chen et al., 2017). Consumers who experience positive emotional responses in the form of green brand attachment from consumer interactions with the brand show satisfaction, loyalty, and association with the brand (Hasan et al., 2025). This combination ultimately encourages consumer-based green brand equity (Khan et al., 2022). According to Su and Teo (2025), green brand attachment influences consumer-based green



brand equity, which acts as the foundation for a long-term and deep relationship between consumers and brands, thereby providing competitive advantages for companies. The results of this hypothesis are consistent with those of Khan et al. (2022) and Mehdikhani and Valmohammadi (2022), who found that green brand attachment strengthens green brand equity based on consumers. Wardah builds green brand attachment through religious and eco-friendly values in its marketing activities. This emotional attachment leads consumers to perceive Wardah as a brand aligned with ethical values and sustainability. Thus, the higher the green brand attachment felt by consumers towards Wardah, the higher the consumer-based green brand equity Wardah.

### **Green Brand Attachment Mediates the Effect of Green Practice on Consumer-Based Green Brand Equity**

The fourth hypothesis suggests that green practices have a positive effect on consumer-based green brand equity through green brand attachment. The results of this hypothesis are consistent with TPB theory. According to TPB, green practices can influence consumer-based green brand equity through green brand attachment. Wardah's green practices, such as the use of environmentally friendly raw materials and campaigns, can influence consumers' green brand attachment. This attachment ultimately encourages consumer-based green brand equity. Green brand attachment links consumer affection for the green practices of the company, thereby strengthening consumer perceptions of the quality, credibility, and sustainability of the brand (Khan et al., 2022). Consumers with green brand attachment develop loyalty, associative attitudes, and willingness to repurchase, thereby increasing consumer-based green brand equity (Hasan et al., 2025). The results of this study are in line with those of Khan et al. (2022), who found that green brand attachment is a mediator that strengthens the relationship between green practices and consumer-based green brand equity.

## **5. Conclusion**

The findings of this study indicate that all four hypotheses were accepted. The results show that green practices positively affect green brand attachment and consumer-based green brand equity. The study found that green brand attachment positively affects consumer-based green brand equity. Green brand attachment partially mediates the relationship between green practices and consumer-based green brand equity. Respondents in this study only focused on certain areas, and the questionnaire was filled out by a limited number of respondents. Therefore, this study can be developed by increasing the number of respondents and expanding the research objectives. Future research can also add other variables to predict consumer-based green brand equity.

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