

## Green Packaging as a Branding Strategy: How Eco-Friendly Materials Influence Brand Image and Customer Loyalty

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Plastic pollution and rising sustainability awareness have shifted consumer expectations toward environmentally responsible packaging. This study examines how green packaging influences brand equity and customer loyalty, focusing on Quaker Oats Malaysia. It specifically investigates the roles of environmental awareness, customer perception, and willingness to pay, and brand image, with brand equity serving as a mediating variable. A quantitative survey of 150 Malaysian consumers aged 18–44 was conducted and analyzed using multiple regression in SPSS. The results indicate that willingness to pay ( $\beta = 0.323$ ,  $p < 0.01$ ), brand image ( $\beta = 0.745$ ,  $p < 0.001$ ), and brand equity ( $\beta = 0.367$ ,  $p < 0.01$ ) significantly affect customer loyalty and brand strength. Environmental awareness also positively affects brand equity ( $\beta = 0.161$ ,  $p < 0.05$ ) but has no direct effect on loyalty. Mediation analysis confirms that brand equity fully mediates the effects of environmental awareness and brand image on loyalty, explaining 64.6% of the variance in loyalty and 73.4% in equity. These findings emphasize that sustainability-driven brand equity transforms ethical initiatives into customer trust and long-term loyalty, making green packaging both an environmental and strategic advantage for consumer brands.

**Keywords:** Brand Equity; Customer Loyalty; Environmental Awareness; Green Packaging; Sustainability

## **INTRODUCTION**

In the past decade, the escalating issue of plastic pollution has become one of the most critical global environmental challenges, urging both consumers and businesses to shift toward more sustainable practices. The packaging industry, as one of the major contributors to non-biodegradable waste, has been under growing pressure to adopt eco-friendly solutions. Consequently, many brands have begun to integrate green packaging as part of their sustainability and marketing strategies, aiming to align with rising consumer awareness about environmental protection (Biswas & Roy, 2015; Nguyen et al., 2020). Green packaging is not merely a functional response to environmental regulations but also a tool of strategy for building brand image and consumer trust. In emerging markets like Malaysia, where consumer concern for sustainability is growing but still developing, understanding how such initiatives translate into brand loyalty is vital.

Previous research has shown that environmentally friendly packaging positively influences consumers' purchase intentions and brand evaluations. However, the majority of studies have focused primarily on direct relationships, such as between green packaging and purchase intention or between environmental attitudes and willingness to pay (Biswas & Roy, 2015; Chen & Chang, 2013). Far fewer studies have investigated the indirect mechanisms that explain how these perceptions are transformed into customer loyalty. In particular, the mediating role of brand equity, which reflects the accumulated value and emotional connection consumers attach to a brand, has received limited empirical attention. This research gap limits our understanding of how companies are able to enhance sustainability initiatives not only to improve reputation but also to secure customer relationships.

To address this gap, the present study explores how green packaging influences brand equity and customer loyalty, using Quaker Oats Malaysia as a case study. The focus on this brand is strategic, as it represents a well-known company operating in a competitive market where health consciousness and sustainability awareness are increasingly important. By incorporating brand equity as a mediating variable, the study provides a more comprehensive understanding of the psychological and behavioral processes that underlie consumer responses to sustainable marketing practices.

Theoretically, this study employs a complementary framework, namely the theory of planned behavior (TPB), to establish a solid conceptual foundation. According to Ajzen (2020), individual behavior is influenced by three primary determinants: attitude, subjective norms, and perceived behavioral control (PBC). In the context of sustainable consumption, positive attitudes toward eco-friendly packaging and perceived social approval for green behavior enhance consumers' willingness to support such brands, ultimately fostering brand loyalty.

Furthermore, sustainable branding serves as an integrative framework that connects these theoretical perspectives. It emphasizes how environmental initiatives, such as green packaging, contribute not only to ecological outcomes but also to strategic brand positioning (Keller, 2013). When consumers perceive authenticity in a brand's environmental actions, their trust is strengthened, leading to higher brand equity and increased repeat purchase behavior. This research, therefore, extends the sustainable marketing literature by linking behavioral theories with branding outcomes, offering a comprehensive understanding of how consumers interpret and respond to corporate sustainability initiatives.

Aligned with these theoretical insights, the study enriches existing literature by empirically testing the mediating role of brand equity between green packaging and

customer loyalty, an area that remains underexplored in developing economies. From a managerial perspective, the findings provide insights for companies to design and communicate eco-friendly packaging as an integral part of their brand equity strategy rather than treating it merely as a compliance requirement. From a policy perspective, the results are expected to offer recommendations for policymakers in promoting sustainable business practices and encouraging consumers to support environmentally responsible brands.

In summary, this research aims to examine the effects of environmental awareness, customer perception, willingness to pay, and brand image on brand equity and customer loyalty. It also analyzes the mediating role of brand equity in the relationship between eco-packaging and customer loyalty while providing theoretical, managerial, and policy implications for advancing sustainability-oriented branding strategies in emerging markets.

## **LITERATURE REVIEW**

### **Theory of Planned Behavior (TPB)**

The TPB, developed by Ajzen in 1991, asserts that the intention to undertake a certain action depends on three primary factors (Ajzen, 2020). First is attitude, which refers to an individual's propensity to respond to a behavior with positive or negative evaluations. Second is normative belief (or subjective norm), reflecting the degree of motivation to conform to perceived social expectations. Third is PBC, which estimates the extent to which consumers believe they can perform the behavior in alignment with their intentions, given internal and external constraints (e.g., resources, opportunities).

### **Customers' Loyalty**

Customer loyalty is an essential element for sustaining competitive advantage and achieving long-term business success. It represents the success and stability of the Quaker Oats brand, reflecting a deeply held commitment by customers to consistently repurchase their preferred products in the future. Loyal customers not only continue to buy despite situational influences or competing marketing efforts that might encourage switching, but their satisfaction also generates positive word-of-mouth recommendations (Al-Adwan et al., 2020).

In the context of eco-friendly branding, customer loyalty is influenced by environmental ethics and sustainable actions. Ghouse et al. (2025) stated that when buyers perceive a product as genuinely environmentally responsible, while also satisfying their preferences and price expectations, they are more likely to make sustainable purchasing decisions and support environmentally friendly brands. Furthermore, Chen (2010) suggested that green satisfaction and green trust act as intermediaries in building green brand equity, which ultimately fosters customer loyalty.

The literature shows that when companies consistently demonstrate their commitment to sustainability, through practices such as using biodegradable packaging or reducing their carbon footprint, buyers are more likely to remain loyal due to their alignment with the brand's environmental values. Similarly, Rahbar and Wahid (2011) observed that eco-friendly labels and packaging significantly influence customer loyalty among environmentally conscious consumers.

### **Brand Equity**

Brand equity is a key asset that drives customer acquisition, loyalty, pricing power, growth, and competitive advantage. Keller (2013) identified five core components of brand equity: brand loyalty, brand awareness, perceived quality, brand associations, and

proprietary assets. In the context of green branding, perceived environmental responsibility can strengthen these dimensions; for instance, sustainable packaging differentiates a brand and builds favorable and lasting associations.

Brand equity adds substantial value to a firm by enhancing its ability to attract and retain customers, command premium pricing, pursue growth opportunities, and maintain a competitive edge (Aaker, 2009). Therefore, identifying and investing in the most effective drivers of brand equity is essential to navigate market challenges and optimize overall brand performance.

According to Chen (2010), environmental claims can enhance green brand equity by increasing perceived sincerity and competence of the brand. Similarly, Cuong et al. (2020) found that elements of brand equity positively influence customer loyalty, suggesting that strong brand equity increases the likelihood of consumers choosing a brand and extending their loyalty to other product lines.

In this study, brand equity functions as a mediating variable linking customer perception, environmental awareness, and willingness to pay more with customer loyalty.

H1: Brand equity is suggested to affect customer loyalty.

### **Customer Perception of Green Packaging**

Customer perception, defined as how individuals interpret product attributes, plays a crucial role in decision-making, with packaging often serving as the first point of contact between the product and the consumer. Nguyen et al. (2020), Savale et al. (2023), and Suhaily et al. (2020) found that eco-friendly packaging significantly shapes both product and brand perception, as visual cues such as natural colors, recycled materials, and eco-labels build associations with quality, trust, and responsibility.

Customer perception also refers to the specific attributes of green-packaged products that align with consumer expectations or preferences, influencing their thoughts and attitudes toward Quaker Oats products (Mitra et al., 2024; Sethi & Malviya, 2025). Positive perceptions enhance the likelihood of customers choosing the Quaker Oats brand over the long term, thereby affecting customer loyalty. Moreover, when green packaging is perceived as genuine rather than a marketing tactic (greenwashing), it strengthens brand credibility. Nguyen et al. (2021) and Popovic et al. (2019) further argued that the perceived environmental friendliness of packaging increases product attractiveness and purchase intention.

In this research, the focus is on how consumers interpret Quaker Oats' packaging features in terms of sustainability and how these perceptions influence brand equity and customer loyalty.

H2: Customer perception is suggested to affect brand equity.

H3: Customer perception is suggested to affect customer loyalty.

### **Willingness to Pay More**

Willingness to pay more reflects perceived quality, reputation, and emotional connection (Han et al., 2020; Ragab et al., 2024). It refers to the maximum amount a buyer is willing to spend on a product or service compared to alternative options. This concept often serves as a proxy for perceived value and brand strength. According to Ragab et al. (2024), willingness to pay more is influenced by perceived quality, brand reputation, and emotional attachment to the brand.

In the context of green marketing, many consumers are willing to pay more for environmentally friendly products. This behavior is particularly evident in communities where individuals have strong trust in green-packaged products, showing greater confidence and willingness to spend on brands like Quaker Oats, whose sustainability practices convey reliability. Heo and Muralidharan (2019) found that younger, environmentally conscious consumers are especially inclined to support green products even at higher prices. Similarly, Hartmann and Ibáñez (2006) demonstrated that green branding can justify price premiums when consumers trust the authenticity of environmental claims, which in turn fosters brand loyalty.

When customers believe that eco-friendly packaging contributes to sustainability, their perceived value increases, influencing both their willingness to pay more and the overall brand equity. This study seeks to determine whether Quaker Oats' green packaging creates such perceived value and willingness among customers, thereby enhancing brand equity and customer loyalty.

H4: Willingness to pay more is suggested to affect brand equity.

H5: Willingness to pay more is suggested to affect customer loyalty.

### **Brand Image**

Brand image is widely recognized as customers' overall perception and subjective evaluation of a brand. Keller (2013) and Zhang (2015) define brand image as a set of associations linked to a brand in consumers' memory. Keller (2013) further explains that brand image is shaped by consumer perceptions that emerge from marketing strategies, product experiences, and external communications.

In the context of green branding, brand image incorporates an environmentally conscious dimension. Chen (2010) posits that a strong green brand image can enhance brand equity, as consumers increasingly prioritize environmental responsibility in their purchasing decisions. Similarly, Hartmann and Ibáñez (2006) emphasize that when companies integrate eco-friendly practices, such as sustainable packaging, into their branding strategies, they create positive impressions among environmentally aware consumers. A positive green brand image not only differentiates a product from competitors but also fosters emotional attachment, which ultimately strengthens customer loyalty.

According to Keller (2013), a favorable brand image builds consumer trust and loyalty, thereby influencing repeat purchases and long-term engagement with the brand.

H6: Brand image is suggested to affect brand equity.

H7: Brand image is suggested to affect customer loyalty.

### **Environmental Awareness**

Environmental awareness refers to the degree of understanding and concern individuals have regarding environmental issues and sustainability practices (Ocho et al., 2025). It is shaped by the emotional involvement of consumers, reflecting their willingness and readiness to act toward ecological solutions, which subsequently influences their brand preferences (Dellarmelin et al., 2018). It encompasses not only knowledge of ecological problems but also the motivation to act responsibly. Zeng et al. (2023) proposed that environmental knowledge, concern, and PBC significantly affect pro-environmental behavior.

Chen et al. (2024) and Rustam et al. (2020) found strong links between environmental awareness and green consumption behavior, suggesting that more informed consumers

are more likely to support sustainable brands. In the context of packaging, environmental awareness influences how consumers evaluate materials, labeling, and disposal methods. Brands that align with these concerns can attract environmentally conscious market segments and foster long-term loyalty. [Maianto et al. \(2024\)](#) also emphasize that green brand positioning is more effective when the target audience exhibits a high level of ecological awareness.

In this research, environmental awareness is examined as an influencing factor that strengthens customer perceptions of Quaker Oats' green packaging and enhances both brand equity and customer loyalty. The hypotheses are summarized as follows:

H8: Environmental awareness is suggested to affect brand equity.

H9: Environmental awareness is suggested to affect customer loyalty.

H10a: There is an effect of environmental awareness on customer loyalty through brand equity.

H10b: There is an effect of perception on customer loyalty through brand equity.

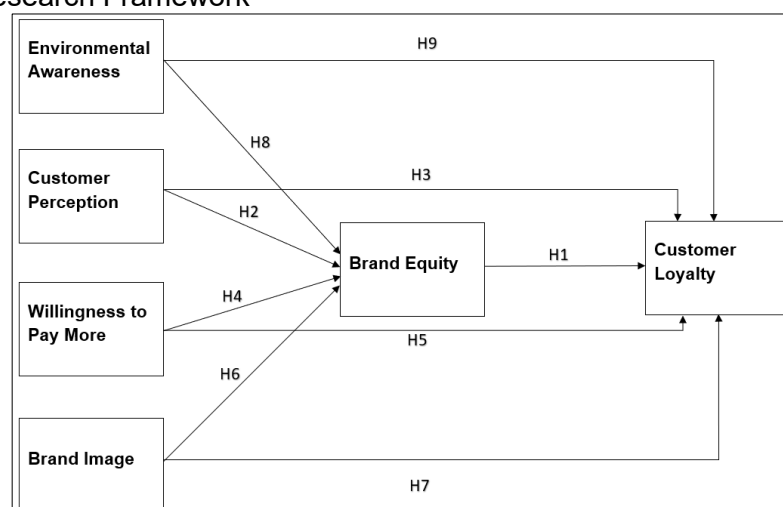
H10c: There is an effect of willingness to pay on customer loyalty through brand equity.

H10d: There is an effect of brand image on customer loyalty through brand equity.

### Research Framework

The research framework ([Figure 1](#)) positions environmental awareness, customer perception, willingness to pay more, and brand image as independent variables; brand equity as the intervening variable; and customer loyalty as the dependent variable.

**Figure 1.** Research Framework



### RESEARCH METHOD

#### Research Design

A quantitative explanatory design was utilized to test the causal relationships among environmental awareness, customer perception, willingness to pay, brand image, brand equity, and customer loyalty. The explanatory approach was chosen to examine the hypothesized mediating role of brand equity using statistical analysis. Data were gathered through a structured online questionnaire distributed to respondents who had prior experience purchasing Quaker Oats Malaysia products.

#### Population and Sampling

The population of this study comprised consumers of Quaker Oats Malaysia, particularly those aged 18–44 years who are aware of sustainability issues. Using purposive

sampling, 150 valid responses were collected through online platforms such as WhatsApp, Instagram, and email. This sample size meets the minimum requirement for multivariate analysis, as suggested by [Hair et al. \(2019\)](#), who recommended at least five to ten observations per variable. The overall response rate was approximately 83% after excluding incomplete or inconsistent responses during the data-cleaning process.

### Data Collection Procedure

Data were obtained through an online questionnaire distributed between May and June 2024. The questionnaire consisted of two sections: (1) demographic information (age, gender, education, and income level) and (2) statements measuring the study constructs. Before distributing the questionnaire to all respondents, a pilot test involving 30 participants was conducted to ensure the clarity and reliability of the measurement items. Minor wording adjustments were made based on the feedback received.

### Measurement of Variables

All constructs in this study were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Each construct was adapted from established instruments used in prior studies to ensure consistency and content validity. The items were slightly modified to fit the context of Quaker Oats Malaysia and its green packaging initiatives. [Table 1](#) presents the measurement constructs, number of items, example statements, and their respective sources.

**Table 1.** Measurement of Variables and Sources

| Construct                    | N | Statement Example                                                          | Source                                       |
|------------------------------|---|----------------------------------------------------------------------------|----------------------------------------------|
| Environmental Awareness (EA) | 4 | "I am aware of the environmental impact of product packaging."             | <a href="#">Nguyen et al. (2020)</a>         |
| Customer Perception (CP)     | 4 | "I believe Quaker Oats packaging is environmentally friendly."             | <a href="#">Biswas &amp; Roy (2015)</a>      |
| Willingness to Pay (WTP)     | 3 | "I am willing to pay more for eco-friendly packaging."                     | <a href="#">Ghazali et al. (2017)</a>        |
| Brand Image (BI)             | 4 | "Quaker Oats has a positive sustainable brand image."                      | <a href="#">Chen (2010)</a>                  |
| Brand Equity (BE)            | 4 | "I prefer Quaker Oats over other brands because of its green initiatives." | <a href="#">Keller (2013)</a>                |
| Customer Loyalty (CL)        | 4 | "I intend to repurchase Quaker Oats products in the future."               | <a href="#">Hartmann &amp; Ibáñez (2006)</a> |

All measurement items demonstrated acceptable internal consistency, with Cronbach's alpha values exceeding 0.70, indicating strong reliability. Furthermore, content and construct validity were ensured by adapting items from previously validated scales and conducting a pilot test prior to full-scale data collection.

### Data Analysis Technique

Data were analyzed using SPSS version 26. Descriptive statistics were first applied to summarize respondents' profiles. Classical assumption tests were conducted before performing regression analysis, including tests for normality (Kolmogorov–Smirnov test), multicollinearity (Variance Inflation Factor, VIF < 10), and autocorrelation, to ensure that the data met the regression assumptions.

Multiple linear regression was employed to test the direct effects, while mediation analysis followed the [Baron and Kenny \(1986\)](#) approach, supported by Sobel testing to confirm indirect relationships. The regression model is represented as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 M + \varepsilon$$

Where:

$Y$ = Customer Loyalty

$X_1$ = Environmental Awareness

$X_2$ = Customer Perception

$X_3$ = Willingness to Pay

$X_4$ = Brand Image

$M$ = Brand Equity

The regression results indicated that the model met all required statistical criteria and supported most of the proposed hypotheses.

## RESULTS

**Table 2.** Respondent's Demography

| Response                     | Frequency (N) | Percentage (%) |
|------------------------------|---------------|----------------|
| Age (years old)              |               |                |
| Under 18                     | 1             | 0.7            |
| 18-24                        | 136           | 90.7           |
| 25-34                        | 8             | 5.3            |
| 35-44                        | 4             | 2.7            |
| 45+                          | 1             | 0.7            |
| Nationality                  |               |                |
| Malaysian                    | 112           | 74.7           |
| Non-Malaysian                | 38            | 25.3           |
| Gender                       |               |                |
| Female                       | 101           | 67.3           |
| Male                         | 49            | 32.7           |
| Highest Level of Education   |               |                |
| Secondary                    | 7             | 4.7            |
| Diploma                      | 15            | 10.0           |
| Bachelor Degree              | 113           | 75.3           |
| Master                       | 2             | 1.3            |
| Doctoral                     | 5             | 3.3            |
| Other                        | 8             | 5.3            |
| Occupation                   |               |                |
| Self-employed                | 4             | 2.7            |
| Student                      | 130           | 86.7           |
| Unemployed                   | 2             | 1.3            |
| Student Working Professional | 14            | 9.3            |

**Table 2** presents the demographic profile of the respondents. The majority of participants were aged between 18 and 24 years old (90.7%), followed by those aged 25–34 years (5.3%), 35–44 years (2.7%), while respondents under 18 and above 45 years each represented 0.7%. In terms of nationality, most respondents were Malaysian (74.7%), with 25.3% being non-Malaysian. The sample consisted predominantly of female respondents (67.3%), compared to 32.7% male respondents. Regarding educational background, the majority held a bachelor's degree (75.3%), while 10.0% had a diploma, 4.7% completed secondary education, 3.3% held a doctoral degree, 1.3% had a master's degree, and 5.3% reported other educational qualifications. As for occupation, most respondents were students (86.7%), followed by student working professionals (9.3%), self-employed individuals (2.7%), and unemployed respondents (1.3%).

**Table 3.** Cronbach's Coefficient Alpha and Zero-Order Correlations of Variables

| Variables          |                         | 1       | 2       | 3       | 4       | 5       | 6       |
|--------------------|-------------------------|---------|---------|---------|---------|---------|---------|
| 1                  | Environmental Awareness | 0.825   |         |         |         |         |         |
| 2                  | Customer Perception     | 0.717** | 0.856   |         |         |         |         |
| 3                  | Willingness to Pay More | 0.527** | 0.694** | 0.783   |         |         |         |
| 4                  | Brand Image             | 0.614** | 0.771** | 0.651** | 0.855   |         |         |
| 5                  | Brand Equity            | 0.625** | 0.704** | 0.526** | 0.843** | 0.874   |         |
| 6                  | Customer Loyalty        | 0.547** | 0.703** | 0.677** | 0.718** | 0.710** | 0.881   |
| Number of Items    |                         | 5       | 4       | 4       | 5       | 5       | 5       |
| Mean               |                         | 4.2027  | 4.1017  | 3.9267  | 4.2360  | 4.2107  | 4.0960  |
| Standard Deviation |                         | 0.63330 | 0.72068 | 0.75504 | 0.63036 | 0.66141 | 0.74283 |

Note: N = 150; \*p < .05, \*\*p < .01, \*\*\*p < .001. The diagonal entries represent Cronbach's alpha.

Table 3 shows that Quaker Oats achieved a good to excellent level of reliability across all variables, as all Cronbach's alpha values exceed the threshold of 0.70. Environmental awareness ( $\alpha = 0.825$ ), customer perception ( $\alpha = 0.856$ ), brand image ( $\alpha = 0.855$ ), brand equity ( $\alpha = 0.874$ ), and customer loyalty ( $\alpha = 0.881$ ) demonstrate excellent internal consistency. Although willingness to pay more ( $\alpha = 0.783$ ) is slightly lower than the other constructs, it still indicates a satisfactory level of reliability, confirming that all measurement items are consistent and reliable for further analysis.

**Table 4.** Regression Analysis

| Variables               |                         | Customer Loyalty | Brand Equity |
|-------------------------|-------------------------|------------------|--------------|
| 1                       | Environmental Awareness | -0.032           | 0.161*       |
| 2                       | Customer Perception     | 0.187            | 0.086        |
| 3                       | Willingness to Pay More | 0.323**          | -0.104       |
| 4                       | Brand Image             | 0.074            | 0.745***     |
| 5                       | Brand Equity            | 0.367**          |              |
| R <sup>2</sup>          |                         | 0.646            | 0.734        |
| F Value                 |                         | 52.583           | 100.196      |
| Durbin-Watson Statistic |                         | 1.843            | 2.132        |

Note: N = 150; \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

Table 4 shows that brand equity and willingness to pay more significantly influence customer loyalty, supporting hypotheses H1 ( $\beta = 0.367$ ,  $p < 0.01$ ) and H5 ( $\beta = 0.323$ ,  $p < 0.01$ ). Furthermore, hypothesis H6 ( $\beta = 0.745$ ,  $p < 0.001$ ) is supported, indicating a strong positive relationship between brand equity and brand image. Environmental awareness also exhibits a significant positive relationship with brand equity, thereby supporting H8 ( $\beta = 0.161$ ,  $p < 0.05$ ).

In contrast, hypotheses H2, H3, H4, H7, and H9 were not supported. The results indicate that customer perception of green packaging did not significantly affect brand equity or customer loyalty, leading to the rejection of H2 ( $\beta = 0.086$ ) and H3 ( $\beta = 0.187$ ). Additionally, willingness to pay more showed no significant relationship with customer loyalty, resulting in the rejection of H4 ( $\beta = -0.104$ ). The findings also reveal that brand image and environmental awareness did not significantly influence customer loyalty, thereby rejecting H7 ( $\beta = 0.074$ ) and H9 ( $\beta = -0.032$ ). Despite these rejections, the overall model demonstrates strong explanatory power.

The  $R^2$  value for customer loyalty is 0.646, indicating that 64.6% of the variance in customer loyalty is explained by the independent variables. Similarly, the  $R^2$  value for brand equity is 0.734, suggesting that 73.4% of the variance in brand equity is accounted for by the predictors. These results underscore the crucial role of environmental awareness, customer perception, willingness to pay more, brand image, and brand equity in shaping customer loyalty toward Quaker Oats' green-packaged products.

**Table 5.** The Direct and Indirect Effects of Independent Variables on the Mediating Variable

|   | Independent Variables   | Direct Effect  | Indirect Effect | Conclusion                     |
|---|-------------------------|----------------|-----------------|--------------------------------|
| 1 | Environmental Awareness | -0.032 (n.s.)  | 0.059*          | Full mediation (indirect only) |
| 2 | Customer Perception     | 0.187 (n.s.)   | 0.032 (n.s.)    | No mediation                   |
| 3 | Willingness to Pay More | 0.323** (sig.) | -0.038 (n.s.)   | No mediation (direct only)     |
| 4 | Brand Image             | 0.074 (n.s.)   | 0.273*** (sig.) | Full mediation (indirect only) |

Note: N = 150; \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

Table 5 presents the direct and indirect effects of environmental awareness, customer perception, willingness to pay more, and brand image on customer loyalty through brand equity. The findings reveal varying mediation patterns among the four predictors.

First, environmental awareness shows a nonsignificant direct effect on customer loyalty ( $\beta = -0.032$ , n.s.) but a significant indirect effect through brand equity ( $\beta = 0.059$ ,  $p < 0.05$ ). This result indicates full mediation, meaning that environmental awareness influences customer loyalty only when mediated by brand equity. Thus, H10a is supported.

Second, customer perception has neither a significant direct effect ( $\beta = 0.187$ , n.s.) nor an indirect effect ( $\beta = 0.032$ , n.s.), implying that brand equity does not mediate the relationship between customer perception and customer loyalty. Consequently, H10b is not supported.

Third, willingness to pay more demonstrates a significant direct effect on customer loyalty ( $\beta = 0.323$ ,  $p < 0.01$ ) but a nonsignificant indirect effect through brand equity ( $\beta = -0.038$ , n.s.), indicating no mediation and a direct-only effect. Therefore, H10c is not supported.

Finally, brand image exhibits a nonsignificant direct effect ( $\beta = 0.074$ , n.s.) but a strong and significant indirect effect through brand equity ( $\beta = 0.273$ ,  $p < 0.001$ ). This pattern suggests full mediation, where brand equity fully transmits the influence of brand image on customer loyalty. Accordingly, H10d is supported.

## DISCUSSION

The study reveals that green packaging, brand equity, and customer loyalty are interrelated, each shaping consumer behavior and showing how sustainable practices strengthen brand perception and retention.

### H1: Brand Equity on Customer Loyalty

The findings confirm that brand equity significantly strengthens customer loyalty by fostering trust and satisfaction, particularly through sustainable practices such as eco-friendly packaging. These efforts enhance the overall customer experience, leading to higher levels of loyalty. This result is consistent with [Agu et al. \(2024\)](#) and [Dananjoyo &](#)

Udin (2023), who found that strong brand equity built on sustainability increases satisfaction and reinforces loyalty. Desta and Amantie (2024) also argued that when a brand possesses high equity, consumers are more likely to trust the brand and perceive its products or services as being of superior quality. Brand equity creates a positive and satisfying experience, and it is this satisfaction that ultimately drives loyalty. This aligns with the TPB, which posits that strong and sustained purchase intentions toward green products, shaped by green brand equity, serve as the foundation for customer loyalty toward brands that adopt environmentally friendly practices. Furthermore, research indicates that green consumption values can moderate the effects of brand experience and brand personality on brand loyalty.

## **H2: Customer Perception on Brand Equity**

This result reveals that while customer perception contributes to the overall brand image, its influence on brand equity is not particularly strong. Although consumers may recognize the brand's sustainability efforts, these perceptions alone do not substantially enhance brand equity without reinforcement from key factors such as product quality, pricing, and consistent brand messaging. This finding is consistent with Iglesias et al. (2019), who suggested that customer perception must be supported by other elements to effectively strengthen brand equity.

However, this result does not align with the TPB. Even when customers hold positive perceptions and favorable attitudes toward a brand, their intention to act (e.g., purchasing the brand's products) may be constrained by subjective norms, such as social pressure or expectations from others, or by PBC. Moreover, brand equity is significantly shaped by external influences, including brand management strategies, market dynamics, and competitor activities. In such situations, customer perception may become less relevant, as these external factors can exert a stronger impact on brand equity, either positively or negatively.

## **H3: Customer Perception on Customer Loyalty**

The findings indicate that while customer perception may influence brand equity, it does not have a strong impact on customer loyalty. Buyer loyalty is more strongly driven by factors such as product quality, pricing, and overall customer experience rather than perception alone. This supports the arguments of Adewole (2024) and Dananjoyo & Udin (2023), who emphasized that customer perception can shape brand equity but does not necessarily translate into greater loyalty without alignment with other reinforcing factors.

A customer may intend to remain loyal based on their perception; however, unexpected circumstances, shifts in personal priorities, or more attractive offers from competitors can undermine that intention. Therefore, while positive perceptions may shape purchase intentions, they do not guarantee sustained loyalty. The intention to purchase, influenced by perception, can also be moderated by contextual variables such as price or promotional activities.

## **H4: Willingness to Pay More on Brand Equity**

Despite finding a strong effect of willingness to pay more on buyer loyalty, the results indicate that willingness to pay more does not directly influence brand equity. This suggests that consumers' readiness to spend more on eco-friendly products does not necessarily enhance the perceived value or overall equity of the brand. This finding aligns with Ng et al. (2014), who examined the relationship between consumers' willingness to pay a premium for sustainability and brand equity. They found that although consumers are willing to pay more for environmentally friendly products, such willingness does not always translate into stronger brand equity, especially when other critical factors, such as brand image and product quality, are not equally emphasized.

This outcome is not fully consistent with the TPB. While the willingness to pay more may generate an intention to spend more, such an intention may not materialize into actual purchase behavior if it is not supported by favorable social influences (subjective norms) or sufficient resources and capabilities (PBC).

#### **H5: Willingness to Pay More on Customer Loyalty**

This hypothesis is supported by the positive effect of consumers' willingness to pay more for eco-friendly products on customer loyalty. A key factor underlying this relationship is the alignment between consumer values and the brand's sustainable practices, which reinforces loyalty. Consumers who are willing to pay higher prices for eco-friendly packaging tend to exhibit stronger brand commitment, highlighting the importance of targeting this environmentally conscious segment. This finding is consistent with [Rossanty and Nasution \(2025\)](#), who asserted that consumers willing to pay more for eco-friendly products remain loyal to brands that align with their personal values.

The result is also consistent with the TPB, which posits that when consumers possess a positive attitude toward a brand, based on perceived quality, value, or image, combined with supportive social influences (subjective norms) and the perceived ability and opportunity to purchase (PBC), they are more likely to form strong behavioral intentions. These intentions, in turn, manifest as sustained customer loyalty.

#### **H6: Brand Image on Brand Equity**

The results of this research indicate a strong effect of brand image on brand equity. A key factor is that a positive, sustainability-driven brand image enhances consumer perceptions, leading to greater brand equity. This finding supports theories suggesting that a robust brand image, particularly one grounded in environmental responsibility, strengthens brand equity by fostering trust and satisfaction. [Ha et al. \(2022\)](#) found that sustainability initiatives positively influence brand equity, with brand image serving as an intervening variable in this relationship. Similarly, [Tran \(2023\)](#) demonstrated that sustainability practices enhance brand equity by improving brand image and consumer trust.

Brand image also significantly shapes consumers' beliefs, attitudes, social norms, and perceptions of control toward a brand. Consistent with the TPB, these beliefs act as the primary drivers of consumers' behavioral intentions, such as intentions to purchase, recommend, or remain loyal. These behavioral intentions subsequently translate into actual behaviors that strengthen and reinforce brand equity, reflected in increased sales performance and sustained customer loyalty.

#### **H7: Brand Image on Customer Loyalty**

This study finds that although Quaker Oats' brand image is generally positive, it does not significantly drive customer loyalty. Consumers may recognize the brand for its heritage and health-oriented positioning; however, this recognition does not necessarily translate into repeat purchasing behavior or emotional commitment. Factors such as price sensitivity, the availability of alternatives, and perceived value appear to play a more decisive role in determining loyalty. This finding aligns with [Khoironi et al. \(2018\)](#), who observed that while brand image influences customer satisfaction, it has a limited direct effect on loyalty unless reinforced by high product quality and competitive pricing.

Social pressure and environmental influences may serve as stronger drivers of consumer behavior than individual perceptions of brand image. For instance, when social norms encourage experimentation or brand switching, a positive brand image alone may not be sufficient to sustain loyalty. Consequently, this result does not fully support the TPB, as

behavioral intentions toward a brand may be overridden by external social influences and situational factors.

#### **H8: Environmental Awareness on Brand Equity**

The analysis confirms that environmental awareness has a positive influence on brand equity. Eco-friendly packaging and sustainability initiatives enhance brand perception, which in turn strengthens overall brand equity. This finding is consistent with previous research indicating that environmentally conscious consumers tend to assign greater value to brands that actively demonstrate ecological responsibility (Brochado et al., 2017). Similarly, Ahmed et al. (2025) found that eco-conscious business practices elevate both brand value and equity by fostering consumer trust and admiration.

This result aligns with the theoretical framework of the TPB, as increased environmental awareness shapes consumers' attitudes and intentions toward brands that engage in sustainable practices. Furthermore, growing health consciousness among consumers has intensified attention toward the environmental attributes of products, reinforcing the importance of sustainability as a key determinant of brand equity.

#### **H9: Environmental Awareness on Customer Loyalty**

While environmental awareness contributes to brand equity, it does not directly translate into customer loyalty. Although consumers appreciate brands that demonstrate environmental responsibility, their loyalty tends to be driven more by product quality, price competitiveness, and overall satisfaction. Hence, while environmental awareness enhances brand perception, it alone is insufficient to sustain long-term loyalty. This finding is consistent with Suki (2017), who observed that customer loyalty is primarily influenced by satisfaction rather than environmental concern.

This research supports the TPB, as it demonstrates that strong and reputable brands can generate social appeal. Consumers may perceive that associating with or purchasing from such brands is approved or even encouraged by their social circles (friends, family, or colleagues). This perception reinforces the subjective norms surrounding the brand, which, in turn, can strengthen consumers' behavioral intentions and brand-related loyalty.

#### **H10: Brand Equity as a Mediator**

Brand equity serves as a mediating variable in the relationships between environmental awareness, brand image, and customer loyalty. The results indicate that customer loyalty increases when either environmental awareness or brand image enhances brand equity. Consumers who value environmental responsibility and hold favorable perceptions of a brand's image tend to attribute greater importance to brand equity (Iglesias et al., 2019; Ng et al., 2014). In turn, strong brand equity fosters loyalty, not merely because of environmental appeal or visual image, but because consumers feel a genuine alignment with the brand's integrity, values, and authenticity. Without robust brand equity, the influence of environmental awareness and brand image on loyalty would be considerably weaker.

Environmentally conscious consumers also tend to exhibit higher trust and attachment toward brands that reflect sustainable values. However, environmental awareness alone does not directly generate loyalty; rather, it shapes brand perceptions and reinforces positive associations such as responsibility, ethics, and trustworthiness. These factors collectively form brand equity. Once this equity is established, reflected through strong reputation, credibility, and consistent environmental commitment, customers are more likely to maintain enduring loyalty toward the brand.

Adopting biodegradable and recyclable packaging to reduce the environmental footprint and strengthen the brand image. Consumers favor eco-friendly products, and studies show green packaging boosts loyalty and sales (Sethi et al., 2025). Promoting such efforts builds trust and long-term growth. Partnerships with environmental groups and governments enhance recycling, credibility, and brand value, while local sustainability projects foster positive perceptions and attract eco-conscious customers.

## **CONCLUSION**

This study set out to examine how green packaging influences brand equity and customer loyalty in the context of Quaker Oats Malaysia. Specifically, it tested ten hypotheses (H1–H10) addressing the effects of environmental awareness, customer perception, willingness to pay, and brand image on brand equity and customer loyalty, as well as the mediating role of brand equity. Quantitative data were analyzed using multiple regression and mediation tests.

The results revealed that brand equity (H1), willingness to pay more (H5), brand image (H6), and environmental awareness (H8) significantly influence the model, while customer perception (H2, H3) and direct effects of brand image and environmental awareness on loyalty (H7, H9) were not significant. These findings indicate that customer loyalty is primarily shaped by brand equity and willingness to pay more, while the influence of environmental awareness and brand image on loyalty operates indirectly. The mediation analysis further confirmed that brand equity fully mediates the relationships between environmental awareness and customer loyalty (H10a) and between brand image and customer loyalty (H10d), but no mediation occurs for customer perception (H10b) or willingness to pay more (H10c).

These results underscore the strategic role of brand equity as the bridge between sustainability-oriented perceptions and loyalty behavior. Theoretically, they extend signaling theory by confirming that eco-friendly packaging functions as a credible signal of authenticity, and they reinforce green brand equity theory by demonstrating that environmental responsibility enhances brand value and loyalty through strengthened brand equity.

From a managerial perspective, companies should align sustainability practices with brand identity, ensuring that green packaging and environmental claims are consistent, transparent, and credible. Managers are encouraged to leverage brand equity as a communication platform to transform sustainability values into customer trust and commitment. Policymakers may further support these initiatives through incentives for sustainable packaging adoption and campaigns promoting eco-conscious consumer behavior.

In conclusion, this study demonstrates that sustainability-driven brand equity is central to fostering customer loyalty. In emerging markets such as Malaysia, environmental awareness and brand image alone are insufficient; their impact materializes only through strong brand equity that embodies authenticity, credibility, and alignment with consumer values. Thus, sustainability not only reinforces ethical responsibility but also strengthens competitive advantage and long-term brand resilience.

## **LIMITATION**

The sample was dominated by young, educated respondents; self-reported surveys may introduce bias, and the cross-sectional design limits the ability to observe changes over time. While focusing on Quaker Oats provides a global perspective, it overlooks local brand challenges, cultural factors, and comparisons with conventional packaging.

Although price was identified as a key barrier, potential solutions such as cost-saving innovations or alternative business models were not explored. Future research should address these gaps to provide a more comprehensive understanding of sustainable packaging adoption.

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#### DECLARATION OF CONFLICTING INTERESTS

The authors declare that no potential conflicts of interest related to the authorship, research, and publication of this paper. This paper is original work by the authors and has neither been published elsewhere nor submitted for consideration elsewhere.

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