

The Influence of Environmental Awareness, Eco-Label, Eco-Brand, and Environmental Advertisement on Purchase Intention of Environmentally Friendly Products

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ABSTRACT

The research investigated the influence of environmental awareness, eco-brand, eco-label, and green advertising on consumers' purchase intention toward eco-friendly products, with environmental knowledge examined as a moderating variable. Data were collected from 205 environmentally conscious consumers through an online survey designed to capture their perceptions and purchasing behaviors. The measurement and structural models were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS), enabling a robust evaluation of the relationships among constructs. The results indicate that environmental awareness, eco-brand, eco-label, and green advertising each exert a significant positive influence on consumers' purchase intention. Notably, environmental knowledge plays a moderating role, strengthening the relationship between green advertising and purchase intention. The findings suggest that consumers with higher environmental knowledge are more responsive to green marketing efforts and more likely to engage in environmentally responsible consumption. These findings underscore the importance of consumer knowledge and perception in fostering sustainable purchasing behavior and contribute to the growing literature on green marketing. The research offers practical implications for companies seeking to enhance their green marketing strategies and for policymakers aiming to encourage environmentally responsible consumer behavior through awareness programs and sustainable product labeling. Recommendations for future research include investigating other potential moderating or mediating variables, expanding the scope to include different demographic and cultural contexts, and conducting longitudinal studies to examine how green consumer behavior evolves over time. Highlighting the moderating effect of environmental knowledge can help to build a more comprehensive understanding of sustainable consumption dynamics across diverse markets.

Keywords: environmental awareness, eco-label, eco-brand, environmental advertisement, purchase intention, environmentally friendly products

INTRODUCTION

Climate change, the plastic waste crisis, and the decline in environmental quality have heightened global concern regarding the importance of more sustainable consumption. Amid growing awareness of these

environmental issues, consumers are increasingly demonstrating preferences for products that not only fulfill functional needs but also support environmental preservation (Lavuri et al., 2023; Ornelas Herrera et al., 2025). Companies, such as international coffee brands, have responded to this phenomenon by offering

reusable products, such as tumblers, symbolizing a commitment to sustainability and addressing changes in consumer behaviour (Noh et al., 2024; Darmawan & Suasana, 2020). Environmental awareness is defined as an individual's level of knowledge and concern about the environmental impacts of human activities and the importance of maintaining ecosystem balance (Üzülmez et al., 2023). Recent studies indicate that individuals with higher environmental awareness are significantly more likely to exhibit pro-environmental consumption behaviors. For instance, Vietnamese consumers with heightened environmental awareness are much more inclined to purchase green products, showing a strong positive relationship between awareness and green consumption behavior (Nguyen, 2023).

Additionally, research on green furniture consumers conducted by Sustainable Futures (2024) confirmed that environmental awareness positively influences purchase intention for eco-friendly home products, with this effect mediated by attitudes, subjective norms, and perceived behavioral control (Liang et al., 2024). These findings support the assertion that greater environmental consciousness consistently predicts more sustainable consumption behaviors across varied contexts and product types. In the context of tumblers for international coffee brand, environmental awareness plays a crucial role. Consumers who are conscious of the negative impact of plastic waste are more likely to be motivated to use reusable products, such as tumblers, to participate in pollution-reduction efforts (Dewi Pitaloka Cahyadi & Jaya Agung Widagda, 2023; Lee et al., 2023). Recent empirical studies confirm that environmental concern positively influences green purchase intention, acting as a key psychological driver in consumer behavior. For example, previous research has found that environmental concern directly affects attitudes toward green products and indirectly influences purchase behavior, with perceived environmental responsibility reinforcing this effect (Van Hoang & Le Thanh, 2024).

A report that environmental concern enhances both green trust and attitudes, thereby significantly boosting intentions to buy eco-friendly products (Khan & Qureshi, 2025). Together, these findings demonstrate that consumers with higher levels of environmental concern tend to form stronger trust and more positive attitudes toward green products, thereby increasing their green purchase intention. This overhauled evidence supports the pivotal role of environmental concern in sustainable consumption decisions.

An eco-label is a symbol or statement indicating that a product meets certain environmental standards (Guo et al., 2020). These labels assist consumers in identifying products that are more environmentally friendly than conventional alternatives. According to Wati et al. (2023), eco-labels enhance product credibility, as consumers view them as concrete proof of a producer's environmental commitment. Recent empirical research supports that eco-labels

significantly enhance consumer trust and influence environmentally friendly purchase decisions due to their role as third-party verifications. Consumers in China with higher eco-label knowledge and stronger information acquisition abilities are more likely to trust eco-labels, which in turn increases their willingness to choose sustainable food products (Yang et al., 2024).

Additionally, a cross-cultural study by Lu and Pan (2025) involving over 1,800 consumers across six countries has demonstrated that perceived label credibility, mediated by green trust and environmental concern, has a strong positive effect on green purchase intention. Supporting this, a 2025 systematic review concludes that eco-label functions as quality markers. It can increase consumer confidence and reduce perceived risk, thereby boosting purchase intention toward green products (Panopoulos et al., 2023).

In addition, the concept of an eco-brand has emerged as an essential strategy in modern green marketing. An eco-brand is a brand image built on principles of environmental sustainability, which emphasizes the company's dedication to environmental stewardship and responsible production practices (Zulfikar, 2024; Loučanová et al., 2021). Key elements of an eco-brand include strong associations with environmentally friendly products, organizational commitments to sustainability, and visual symbols that represent green values. By adopting eco-branding, companies can effectively communicate their environmental values to consumers, foster emotional connections, and influence purchasing behaviors toward more sustainable options.

Recent empirical evidence also shows that eco-brands play a pivotal role in shaping consumer trust and influencing green purchase intentions. It is found that green brand knowledge, environmental attitude, and green trust significantly mediate the influence of green marketing components on purchase intention (Tan et al., 2022). Similarly, eco-label and green trust fully mediate the relationship between Theory of Planned Behavior (TPB) constructs and the intention to purchase environmentally friendly appliances, reinforcing the idea that brand credibility directly boosts green purchases. For example, a coffee brand's eco-brand image, built through Corporate Social Responsibility (CSR) initiatives and environmentally friendly materials, can enhance consumers' perceptions of sustainability, trust, and product credibility. It, in turn, differentiates the brand, enhances loyalty, and elevates purchase intention among eco-conscious consumers (Shah et al., 2023). Environmental advertising refers to marketing communication strategies that emphasize the ecological attributes of a product or brand, aiming to inform and educate consumers about the environmental benefits of choosing sustainable products (Lopes et al., 2024). Such advertisements often highlight issues like resource conservation, reduction of carbon footprints, and the promotion of sustainable lifestyles, thereby increasing consumer awareness and shaping environmentally responsible purchasing behaviors (Alamsyah et al., 2021).

Moreover, credible and informative green advertisements significantly shape consumer trust and attitudes, thereby enhancing green purchase intentions. In South Korea, the attractiveness, informativity, and reliability of green ads positively affect consumer purchase intention, especially when moderated by consumer innovativeness (Kim & Cha, 2021). In the case of international coffee brand tumblers, advertisements focusing on the importance of reuse and the reduction of single-use plastics have the potential to create a significant behavioral impact. By framing the product as both environmentally friendly and socially responsible, such campaigns appeal to consumers who value sustainability. This approach encourages an attitude shift toward greener choices and reinforces the intention to purchase products. Contributing to environmental protection by demonstrating how targeted green advertising can directly influence consumer decision-making and foster long-term brand engagement (Coppola et al., 2021).

Next, lifestyle reflects an individual's behavioral patterns, including activities, interests, and opinions in daily life (Brivio et al., 2023). According to Suhaily (2020), consumers' lifestyles greatly influence their product choices, including their choices of environmentally friendly products. As a mediating variable, lifestyle can strengthen or weaken the influence of environmental awareness, eco-labels, eco-brands, and environmental advertising on purchase intention (Nguyen-Viet, 2022). Several studies have shown that consumers who adopt a green lifestyle are more inclined to purchase products aligned with their environmental values, such as environmentally friendly and stylish international coffee brand tumblers (Dewi Pitaloka Cahyadi & Jaya Agung Widagda, 2023). This idea suggests that lifestyle is not merely a reflection of individual preferences but also acts as a bridge connecting personal environmental values with tangible consumption behavior (Liang et al., 2022). In this sense, lifestyle becomes an important mediating factor that shapes how personal beliefs about sustainability are translated into purchasing actions.

Purchase intention refers to a consumer's tendency to buy a specific product based on their perceptions, attitudes, and personal values (Riorini et al., 2023). According to Ferdinand in Putri et al. (2022), purchase intention consists of four dimensions: transactional, referential, preferential, and exploratory. These dimensions describe different forms of purchase motivation, ranging from straightforward purchase decisions to recommendations, brand preferences, and curiosity-driven exploration of new products. Understanding these dimensions provides valuable insight into how consumers make purchasing decisions in the context of environmentally friendly products (Simanjuntak & Purba, 2024).

In the case of green products, purchase intention is often influenced by perceived environmental benefits, brand image, and personal values related to

sustainability (Zhuang et al., 2021). The stronger a consumer's perception of a product's environmental credibility is, the higher their intention to purchase will be. This statement highlights the importance of establishing trust and credibility through green marketing strategies (Hasanah & Anjaningrum, 2023). The conceptual model developed in the research suggests that environmental awareness, eco-labels, eco-brands, and environmental advertisements influence purchase intention both directly and indirectly through lifestyle. International coffee brand, as a global corporation, has successfully leveraged these factors to create emotional connections and shared values with its consumers (Rizqiyana & Wahyono, 2020). The company promotes its tumblers not merely as functional drinkware but as lifestyle symbols representing modernity and environmental consciousness. This approach illustrates how effective green marketing strategies can shift consumer behavior toward more sustainable consumption practices (Rahmawati, 2024; Simanjuntak & Purba, 2024).

Despite the growing body of literature on green marketing and consumer behavior, there remains a lack of comprehensive studies that simultaneously examine the roles of environmental awareness, eco-labels, eco-brands, and environmental advertising in influencing purchase intention, particularly within emerging markets such as Indonesia. Moreover, the mediating role of lifestyle has been largely overlooked, even though it can serve as an important bridge between consumers' environmental values and their actual purchasing behavior. Addressing these gaps is crucial, as Indonesia continues to face critical challenges in reducing plastic waste and promoting sustainable consumption patterns. The research contributes to the literature by integrating these variables into a single conceptual framework. It provides practical implications for companies, such as international coffee brand, in designing effective green marketing strategies that can foster eco-friendly purchase intentions.

The research proposes a set of hypotheses to examine both direct and indirect effects among the key variables. Environmental awareness, eco-labels, eco-brands, and environmental advertising are hypothesized to directly influence purchase intention (H1–H4) and to shape consumers' lifestyles (H5–H8). Lifestyle is further expected to have a direct positive effect on purchase intention (H9). In addition, lifestyle is proposed as a mediating variable that indirectly links environmental awareness, eco-labels, eco-brands, and environmental advertising to purchase intention (H10), explaining how environmental values and green marketing efforts are translated into consumers' purchase intentions.

METHODS

The research adopts a quantitative research approach with an associative and causal-comparative design. The quantitative approach is selected because

it enables objective and systematic measurement of relationships between variables using numerical data processed through statistical analysis, consistent with recent methodological perspectives (Laheri et al., 2024). The associative design is appropriate as the primary objective is to examine and empirically test the relationships between the independent variables (environmental awareness, eco-label, eco-brand, environmental advertisement, and lifestyle) and the dependent variable (purchase intention toward an international coffee brand's reusable tumbler). Furthermore, the causal-comparative nature of the research is utilized to explore cause-and-effect relationships to determine the influence of each independent variable on consumer purchase intention, aligning with recent quantitative consumer behavior studies (Simanjuntak et al., 2023).

The research is conducted at International Coffee Brand outlets located in Binjai City from April to May 2025. The selection of Binjai City as the research location is based on its unique market characteristics and relevance to the study objectives. Binjai represents an emerging urban area with a growing environmentally conscious consumer segment, yet it is not a major metropolitan city. This situation provides an opportunity to examine green purchasing behavior in a developing urban context, where exposure to eco-friendly products, such as international coffee brand tumblers, is increasing. Additionally, Binjai offers accessible respondents who meet the study criteria, enabling the collection of representative data to explore consumer perceptions and intentions toward environmentally friendly products.

The research population consists of all international coffee brand consumers who have previously purchased or used a tumbler, totalling 205 individuals. Since the population is manageable in size, a census sampling technique is employed. This approach is deemed appropriate to obtain a comprehensive understanding of consumer preferences in the area (Mohapatra & Chamola, 2020). Data are gathered using a structured questionnaire employing a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), in line with recent questionnaire-based consumer behavior studies. Prior to distribution, the questionnaire has undergone validity and reliability testing through a pilot study.

The operational definitions, indicators, measurement items, and references for each variable are summarized in Table 1. Environmental awareness is operationalized via environmental concern and attitude constructs, as in a Malaysian research using validated scales based on prior literature (Cronbach's $\alpha > 0.86$) (Ibrahim et al., 2021). Indicators for eco-labels, such as recognition of recycling labels, clarity of label information, and awareness of relevant regulations, align with scale items used in sustainability marketing research (Wu et al., 2024). Message credibility, informational effectiveness, and perceived relevance of environmental advertisements are measured reflecting constructs of advertisement credibility and trustworthiness identified in recent communication science reviews (Verleye et al., 2023). Although specific eco-brand symbolic and functional dimensions are less commonly operationalized in the literature, analogous constructs measuring green brand

Table 1 Operationalization of Research Variables

Variable	Operational Definition	Indicators	Sources
Environmental Awareness	Knowledge and concern regarding environmental issues and their impact	(1) Knowledge of environmental issues; (2) Concern for environmental impact; (3) Support for preservation efforts	Ibrahim et al. (2021)
Eco-Label	Symbols/labels showing that products meet environmental standards	(1) Label recognition; (2) Clarity of information; (3) Awareness of regulations	Wu et al. (2024).
Eco-Brand	Brand image associated with environmental sustainability	(1) Perceived green commitment; (2) Green brand trust; (3) Symbolic/functional green values	Simanjuntak et al. (2023)
Environmental Advertising	Marketing communication highlighting the ecological attributes of products	(1) Message credibility; (2) Informational effectiveness; (3) Perceived relevance	Verleye et al. (2023)
Lifestyle	Consumer behavior patterns related to green values	(1) Activities; (2) Interests; (3) Opinions reflecting eco-lifestyle	Akkaya (2021)
Purchase Intention	The tendency to buy eco-friendly products	(1) Referential intention; (2) Preferential intention; (3) Transactional intention; (4) Exploratory intention	Gozali & Tunjungsari (2022)

trust and perceived brand image support the validity of such measures (e.g., green brand knowledge mediating symbolic/functional perceptions) (Simanjuntak et al., 2023). Meanwhile, lifestyle as an intervening variable is assessed based on consumer activities, interests, and opinions (Akkaya, 2021). Lastly, purchase intention is measured using referential, preferential, transactional, and exploratory intentions toward international coffee brand tumblers (Gozali & Tunjungsari, 2022).

The data analysis technique employed is Structural Equation Modeling–Partial Least Squares (SEM-PLS), using SmartPLS 4.0 software. SEM-PLS is selected due to its capability to analyze models with complex latent variables and its minimal dependence on data normality and large sample sizes (Hubona, 2010). The analytical process begins with evaluating the outer model to test convergent validity, discriminant validity, and construct reliability using loading factor values, Average Variance Extracted (AVE), and Composite Reliability (CR).

The outer model analysis is conducted to evaluate how well each indicator represents its corresponding latent construct, ensuring that the measurement items accurately capture the underlying theoretical concept. This evaluation process involves assessing the validity and reliability of reflective indicators, which are critical for confirming the quality of the measurement model. Validity tests assess whether indicators truly measure the intended construct, typically using factor loadings and AVEs to establish convergent validity and discriminant validity to verify that constructs are distinct from one another. Reliability tests, on the other hand, evaluate the consistency of indicators, often using Cronbach's alpha and composite reliability to assess whether the items consistently reflect the same concept. Together, these analyses provide confidence that the measurement model is robust, reducing the risk of measurement error and ensuring that subsequent structural model analysis is based on reliable and valid data (Hair et al., 2021a).

An indicator is considered valid if it has a factor loading greater than 0.60, which demonstrates that the indicator has a strong correlation with its underlying latent construct and contributes meaningfully to the measurement model. Indicators with loading factors below this threshold are considered weak and unreliable because they fail to capture the intended concept accurately and may introduce measurement error into the analysis. Removing such indicators is crucial to enhancing the overall quality and robustness of the model, as retaining poorly performing items can distort relationships among constructs and reduce the model's explanatory power (Hair, 2019). According to Hwang and Sim (2021), ensuring that only indicators that meet this criterion are included not only improves convergent validity but also strengthens the construct's reliability, leading to more accurate and trustworthy results in structural model analysis. This process reflects best practices in PLS-SEM, where careful assessment of measurement indicators directly affects

the validity of the theoretical testing and the practical implications derived from the model.

The validity of reflective indicators is tested by examining the correlation between each item score and the corresponding latent construct score. Reflective measurement models assume that a change in the latent construct will be reflected in changes across all indicators. In other words, the indicators in a reflective construct are interchangeable. Any change or removal of one indicator will impact the others within the same construct (Sharma & Singh, 2025).

Next, the inner model is analyzed to determine the magnitude of the relationships among variables by examining the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2). Hypothesis testing is conducted by analyzing t-statistics and p-values: a hypothesis is considered significant if the t-value exceeds 1.96 and the p-value is less than 0.05 at the 5% significance level. The results of this analysis serve as the basis for concluding the most effective strategies to build consumer purchase intention for environmentally friendly products (Hair et al., 2021a).

RESULTS AND DISCUSSION

The outer loading values reflect the strength of the relationship between each indicator and its associated latent construct, serving as a key measure of indicator reliability in SEM. High outer loading values indicate that the observed variable effectively represents the underlying construct, which is essential for ensuring accurate measurement and robust model results (Hair et al., 2021b). According to Hair et al. (2017), an acceptable threshold for outer loadings is typically ≥ 0.70 , as this level suggests that more than half of the variance in the observed variable is explained by the latent construct. Thus, it demonstrates strong indicator reliability. However, values between 0.60 and 0.70 can still be considered acceptable, particularly in exploratory research where model development is in its early stages, and theoretical constructs may not yet be fully established. Including indicators within this acceptable range allows researchers to retain potentially valuable measures that contribute to the overall conceptual framework, provided that other reliability and validity metrics are met. This nuanced approach to interpreting outer loading values ensures both methodological rigor and flexibility in constructing models that balance theoretical soundness with empirical evidence.

As shown in Table 2, the environmental awareness has outer loadings ranging from 0.665 to 0.812. Although indicators X1.1 (0.665) and X1.6 (0.691) are slightly below the ideal threshold, they remain acceptable for early-stage research models. The eco-brand demonstrates very strong results (0.857–0.925), confirming the quality of the measurement of consumer perceptions of eco-friendly branding. Eco-label (0.789–0.868) and environmental advertisement (0.793–0.873) also show high indicator reliability,

supporting the role of eco-label and green advertising in influencing consumer behavior (Thøgersen et al., 2010). The purchase intention has outer loadings of 0.655–0.870. While indicator Y.2 (0.655) is the lowest, the overall construct reliability remains acceptable. Meanwhile, lifestyle exhibits consistent measurement quality (0.725–0.819). The evaluation of outer loadings shows that most indicators meet the recommended threshold (≥ 0.70), indicating good indicator reliability (Marcoulides, 1998).

The measurement model evaluation indicates that most indicators meet the recommended outer

loading threshold (> 0.70), with a few slightly below this value but still acceptable for exploratory research, confirming adequate measurement reliability across all constructs. The constructs of environmental awareness, eco-brand, eco-label, environmental advertisement, lifestyle, and purchase intention demonstrate robust psychometric properties, consistent with established methodological standards in PLS-SEM. Structural model analysis further reveals that environmental awareness, eco-brand, and lifestyle have positive and significant effects on purchase intention. These findings indicate that heightened environmental awareness,

Table 2 Results of Outer Loadings

	Outer loadings
X1.1 \leftarrow Environmental Awareness	0.665
X1.2 \leftarrow Environmental Awareness	0.785
X1.3 \leftarrow Environmental Awareness	0.802
X1.4 \leftarrow Environmental Awareness	0.725
X1.5 \leftarrow Environmental Awareness	0.812
X1.6 \leftarrow Environmental Awareness	0.691
X2.1 \leftarrow Eco-Brand	0.861
X2.2 \leftarrow Eco-Brand	0.879
X2.3 \leftarrow Eco-Brand	0.925
X2.4 \leftarrow Eco-Brand	0.914
X2.5 \leftarrow Eco-Brand	0.857
X2.6 \leftarrow Eco-Brand	0.871
X3.1 \leftarrow Eco-Label	0.789
X3.2 \leftarrow Eco-Label	0.815
X3.3 \leftarrow Eco-Label	0.868
X3.4 \leftarrow Eco-Label	0.842
X3.5 \leftarrow Eco-Label	0.854
X3.6 \leftarrow Eco-Label	0.866
X4.1 \leftarrow Environmental Advertisement	0.814
X4.2 \leftarrow Environmental Advertisement	0.817
X4.3 \leftarrow Environmental Advertisement	0.873
X4.4 \leftarrow Environmental Advertisement	0.852
X4.5 \leftarrow Environmental Advertisement	0.827
X4.6 \leftarrow Environmental Advertisement	0.793
Y.1 \leftarrow Purchase Intention	0.795
Y.2 \leftarrow Purchase Intention	0.655
Y.3 \leftarrow Purchase Intention	0.870
Y.4 \leftarrow Purchase Intention	0.780
Y.5 \leftarrow Purchase Intention	0.753
Y.6 \leftarrow Purchase Intention	0.735
Z.1 \leftarrow Lifestyle	0.802
Z.2 \leftarrow Lifestyle	0.725
Z.3 \leftarrow Lifestyle	0.817
Z.4 \leftarrow Lifestyle	0.819
Z.5 \leftarrow Lifestyle	0.805
Z.6 \leftarrow Lifestyle	0.766

a strong eco-friendly brand image, and sustainable lifestyle orientations play a critical role in enhancing consumers' intentions to purchase environmentally friendly products. The results support prior studies that emphasize the importance of psychological factors and personal values in shaping sustainable consumption behavior.

From a theoretical perspective, these results support the TPB, which posits that attitudes, personal values, and lifestyle orientations strongly influence behavioral intentions (Flavián et al., 2020). Consumers who already practice sustainable lifestyles are more inclined to adopt green products, suggesting that lifestyle functions as both a direct and reinforcing driver of purchase intention. Empirical evidence further confirms that individuals with higher environmental awareness consistently exhibit stronger green purchase intentions, while eco-brand image and lifestyle-aligned green marketing strategies enhance trust and perceived value, particularly among younger consumer segments (Zameer & Yasmeen, 2022). Collectively, these findings highlight the importance of integrated strategies, combining environmental education, credible eco-branding, and lifestyle-based marketing, to foster long-term, environmentally responsible consumption patterns and generate sustained demand for green products.

The AVE is used to evaluate convergent validity, with a threshold value of ≥ 0.50 indicating that a construct explains more than half of the variance in its indicators (Hair et al., 2017). All constructs in the research achieve AVE values above 0.50, confirming adequate convergent validity. Eco-brand (0.785), lifestyle (0.805), and purchase intention (0.766) demonstrate particularly strong convergent validity, indicating that their indicators reliably represent consumer perceptions of green branding, environmentally friendly lifestyles, and purchase intentions as shown in Table 3. Eco-label (0.702) and environmental advertisement (0.688) also show good convergent validity, supporting previous research emphasizing the role of eco-labels (Thøgersen et al., 2010) and green advertising (Flavián et al., 2020) in shaping consumer behavior. Environmental awareness (0.570) also meets the minimum threshold, although future studies may consider refining indicators to improve measurement precision.

Table 3 Average Variance Extracted (AVE) Test Results

	Average Variance Extracted (AVE)
Eco-Brand	0.785
Eco-Label	0.702
Environmental Advertisement	0.688
Environmental Awareness	0.570
Lifestyle	0.805
Purchase Intention	0.766

Overall, these results confirm that all constructs are reliably measured and suitable for further structural analysis, providing a strong foundation for evaluating the hypothesized relationships in the model. In particular, eco brand, lifestyle, and purchase intention demonstrate exceptionally strong measurement quality, as evidenced by high indicator loadings and robust reliability metrics. This result suggests that these constructs are well-defined and consistently interpreted by respondents, making them critical variables in understanding consumer behavior related to sustainable products. The strong reliability of the eco-brand highlights the effectiveness of environmentally focused branding in influencing consumer perceptions. At the same time, the high measurement quality of lifestyle underscores its importance as a mediating factor linking environmental values to purchasing behavior. Similarly, purchase intention, with its strong measurement performance, reflects a clear and stable representation of consumers' willingness to engage in environmentally friendly consumption. These findings indicate that the measurement model is not only statistically sound but also conceptually aligned with sustainability-oriented consumer behavior research, enabling a more accurate and insightful structural model analysis in subsequent stages.

Next, discriminant validity can be assessed using the Fornell-Larcker criterion. According to this method, discriminant validity is established by comparing the square root of the AVE value for each construct with the correlations between that construct and other constructs in the model. A good measurement model demonstrates discriminant validity when the square root of the AVE of a construct is greater than its correlation with any other construct (Hwang & Sim, 2021).

The Fornell-Larcker criterion in Table 4 is applied to evaluate discriminant validity by comparing the square root of each construct's AVE (diagonal values) with its correlations with other constructs (off-diagonal values) (Fornell & Larcker, 1981). Meeting this criterion is crucial because it ensures that each construct shares more variance with its indicators than with other constructs in the model, confirming conceptual uniqueness and reducing the risk of multicollinearity. In the research, all constructs successfully meet the Fornell-Larcker criterion, indicating that the latent variables are not only statistically distinct but also conceptually sound. This outcome strengthens confidence in the measurement model, demonstrating that the constructs, such as eco-brand, eco-label, lifestyle, environmental awareness, environmental advertisement, and purchase intention, are clearly differentiated from one another. Consequently, the model can reliably capture the relationships among these constructs without measurement overlap, providing a robust foundation for structural model testing and supporting the validity of the theoretical framework under examination.

Eco-brand ($\sqrt{AVE} = 0.886$) shows stronger internal consistency than its correlations with other

Table 4 Results of Fornell-Lacker

	Eco-Brand	Eco-Label	Environmental Advertisement	Environmental Awareness	Lifestyle	Purchase Intention
Eco-Brand	0.886					
Eco-Label	0.582	0.838				
Environmental Advertisement	0.525	0.774	0.829			
Environmental Awareness	0.430	0.735	0.699	0.755		
Lifestyle	0.590	0.732	0.789	0.643	0.791	
Purchase Intention	0.682	0.815	0.765	0.658	0.828	0.768

constructs (0.430–0.682). Similarly, eco-label ($\sqrt{AVE} = 0.838$) has a higher correlation than its highest correlation (0.815 with purchase intention), and environmental advertisement ($\sqrt{AVE} = 0.829$) exceeds all correlations (0.699–0.789). Environmental awareness ($\sqrt{AVE} = 0.755$) demonstrated lower correlations with other constructs (0.430–0.735), confirming its uniqueness. Lifestyle ($\sqrt{AVE} = 0.791$) is also distinct, although its correlation with purchase intention (0.828) is relatively high, but still below the threshold. Purchase intention ($\sqrt{AVE} = 0.768$) similarly surpasses its inter-construct correlations (0.658–0.828), as shown in Table 3.

Overall, these findings confirm that the constructs are not only internally reliable but also empirically distinct, supporting the adequacy of the measurement model and reducing concerns about multicollinearity among latent variables (Hair et al., 2017).

This distinction is essential because it demonstrates that each construct captures a unique conceptual dimension, allowing for a clearer understanding of the relationships within the model. The absence of high correlations among constructs indicates that the indicators effectively measure separate theoretical concepts, enhancing confidence in both the measurement and structural models. As a result, researchers can proceed with further structural analysis knowing that the risk of biased path coefficients or inflated model fit statistics due to overlapping constructs is minimal. These results reinforce the robustness of the model and its suitability for investigating complex relationships between environmental awareness, eco-brand, lifestyle, and purchase intention within the context of sustainable consumer behavior.

Moreover, cross-loading analysis confirms discriminant validity by ensuring each indicator loads higher on its respective construct compared to other constructs (Hair et al., 2017). The indicators of environmental awareness (X1.1–X1.6) have loadings ranging from 0.665 to 0.813. All loadings are higher than their loadings on other constructs, indicating distinct measurement. The eco-brand (X2.1–X2.6)

indicators show very high loadings (0.860–0.928), indicating strong reliability. Similarly, eco-label (X3.1–X3.6) indicators load between 0.795 and 0.870, and environmental advertisement (X4.1–X4.6) between 0.810 and 0.840, both meeting the criterion for discriminant validity.

The loading values for purchase intention (Y.1–Y.6) range from 0.650 to 0.870, while those for lifestyle (Z.1–Z.6) range from 0.560 to 0.787, as shown in Table 5. These results are considered acceptable for exploratory research, where loading thresholds of 0.60 or higher are often deemed sufficient to retain valuable indicators that contribute to the construct's theoretical representation. Although Y.1 (0.650) and some lifestyle indicators demonstrate relatively lower loading values compared to others, they still meet the minimum requirements and, importantly, do not compromise the distinctiveness or conceptual clarity of the constructs being measured. Retaining these indicators ensures that important dimensions of the constructs are captured without sacrificing the overall validity of the measurement model.

Overall, these findings demonstrate that all constructs in the model are conceptually distinct and are measured with sufficient validity and reliability, as evidenced by acceptable loadings across indicators. This outcome supports both the convergent and discriminant validity of the measurement model, reducing concerns about overlapping constructs and providing confidence for further structural analysis (Henseler et al., 2015). These results underscore the robustness of the model and its capacity to explain complex relationships among consumer behavior variables, such as lifestyle and purchase intention, particularly in studies of environmentally conscious consumption.

Reliability refers to the accuracy, consistency, and precision of a measurement instrument in capturing data (Hwang & Sim, 2021). When research is considered reliable, it means that the research data have been tested for the dependability and consistency of the results. In PLS, reliability can be assessed using two methods: composite reliability and Cronbach's alpha.

Table 5 Results of Cross-Loading Values

	Eco-Brand	Eco-Label	Environmental Advertisement	Environmental Awareness	Lifestyle	Purchase Intention
X1.1	0.290	0.360	0.380	0.665	0.470	0.435
X1.2	0.260	0.512	0.475	0.786	0.457	0.500
X1.3	0.355	0.565	0.568	0.803	0.508	0.545
X1.4	0.338	0.548	0.545	0.724	0.434	0.455
X1.5	0.410	0.690	0.625	0.813	0.546	0.560
X1.6	0.265	0.615	0.540	0.691	0.430	0.450
X2.1	0.865	0.390	0.395	0.305	0.406	0.515
X2.2	0.880	0.515	0.455	0.364	0.510	0.600
X2.3	0.928	0.490	0.415	0.334	0.501	0.620
X2.4	0.918	0.505	0.445	0.361	0.496	0.605
X2.5	0.860	0.575	0.512	0.463	0.619	0.645
X2.6	0.873	0.568	0.490	0.397	0.515	0.612
X3.1	0.545	0.795	0.635	0.565	0.681	0.675
X3.2	0.465	0.820	0.660	0.598	0.660	0.648
X3.3	0.495	0.870	0.755	0.620	0.679	0.715
X3.4	0.500	0.845	0.725	0.588	0.682	0.690
X3.5	0.470	0.855	0.775	0.654	0.711	0.700
X3.6	0.445	0.725	0.735	0.646	0.733	0.590
X4.1	0.445	0.735	0.810	0.585	0.615	0.655
X4.2	0.470	0.720	0.820	0.611	0.689	0.630
X4.3	0.410	0.770	0.790	0.551	0.695	0.690
X4.4	0.445	0.695	0.815	0.642	0.695	0.640
X4.5	0.430	0.685	0.840	0.555	0.690	0.615
X4.6	0.415	0.765	0.820	0.541	0.684	0.800
Y.1	0.460	0.490	0.420	0.341	0.515	0.650
Y.2	0.450	0.665	0.585	0.547	0.669	0.870
Y.3	0.550	0.700	0.615	0.557	0.679	0.785
Y.4	0.470	0.585	0.560	0.488	0.579	0.755
Y.5	0.470	0.490	0.455	0.378	0.560	0.740
Y.6	0.770	0.685	0.675	0.379	0.690	0.705
Z.1	0.575	0.540	0.635	0.522	0.715	0.535
Z.2	0.340	0.650	0.520	0.416	0.705	0.690
Z.3	0.460	0.745	0.675	0.501	0.787	0.775
Z.4	0.555	0.630	0.740	0.671	0.597	0.600
Z.5	0.405	0.645	0.635	0.502	0.587	0.575
Z.6	0.400	0.630	0.600	0.459	0.560	0.560

Composite reliability values for all constructs exceed the recommended threshold of 0.70, indicating strong internal consistency as recommended by Hair et al. (2017). Eco-brand shows the highest reliability (0.962), followed by eco-label (0.940) and environmental advertisement (0.933), confirming that their indicators consistently measure the intended constructs. Lifestyle (0.912) and purchase intention (0.897) also demonstrate excellent reliability, while environmental awareness (0.886), the lowest value,

remains well above the acceptable standard. These results confirm that all constructs are measured reliably, supporting the robustness of the measurement model and ensuring its suitability for further structural analysis, as shown in Table 6.

Cronbach's alpha values for all constructs are above the recommended threshold of 0.70, indicating satisfactory internal consistency (Chan & Lay, 2018). Eco-brand has the highest reliability (0.948), followed by eco-label (0.918) and environmental advertisement

(0.910). They demonstrate excellent consistency among their indicators. Lifestyle (0.880) and purchase intention (0.856) also show strong reliability, confirming their robustness as latent constructs. Environmental awareness (0.840) has the lowest value but remains well above the threshold, indicating adequate reliability for early-stage research models, as shown in Table 7. These results confirm that all constructs are consistently measured and suitable for further structural equation modeling analysis.

Table 6 Results of the Composite Reliability Test

	Composite Reliability (rho_c)
Eco-Brand	0.962
Eco-Label	0.940
Environmental Advertisement	0.933
Environmental Awareness	0.886
Lifestyle	0.912
Purchase Intention	0.897

Table 7 Results of the Cronbach's Alpha Test

	Cronbach's Alpha
Eco-Brand	0.948
Eco-Label	0.918
Environmental Advertisement	0.910
Environmental Awareness	0.840
Lifestyle	0.880
Purchase Intention	0.856

After confirming that the estimated model meets the criteria of the outer model, the next step is to evaluate the structural model (inner model), which examines the relationships among the latent constructs. This process focuses on assessing how well the independent variables explain the variance in the dependent variables and whether the hypothesized paths are statistically significant and meaningful. One of the key indicators used for this evaluation is the R-Square (R^2) value, which reflects the proportion of variance in the endogenous constructs that can be explained by the exogenous constructs included in the model. Higher R^2 values indicate a stronger explanatory power. Hence, it demonstrates that the model effectively captures the key factors influencing the dependent variables (Hair et al., 2021a). In the research, the R^2 values obtained for the constructs under investigation provide insight into the predictive accuracy and overall quality of the structural model. These results serve as an important foundation for interpreting the strength and direction of the hypothesized relationships among environmental awareness, eco-brand, lifestyle, and purchase intention.

The R^2 results show that lifestyle has a value of 0.758 (adjusted R^2 of 0.751), indicating that 75.8% of the variance in lifestyle can be explained by the exogenous variables in the model, as shown in Table 8. Meanwhile, purchase intention has a value of 0.785 (adjusted R^2 of 0.778). It shows that 78.5% of the variance in purchase intention is explained by its influencing variables. According to Hair et al. (2017), R^2 values above 0.75 are categorized as substantial, indicating that the model demonstrates strong predictive power for both endogenous variables.

Table 8 Results of the Coefficient of Determination (R^2) Test

	R-Square	R-Square Adjusted
Lifestyle	0.758	0.751
Purchase Intention	0.785	0.778

The F-square test is used to determine the relative impact of an independent latent variable on a dependent latent variable within the structural model. According to De Sousa Jabbour et al. (2014), the interpretation of F-square values follows specific thresholds. It shows a value of 0.35 for a large effect, 0.15 for a moderate effect, and 0.02 for a small effect. These benchmarks help researchers to understand the magnitude of influence that one construct exerts over another, providing important insights into which variables play the most significant roles within the model and where strategic focus should be directed for theoretical and practical implications.

The F-square results reveal varying contributions of exogenous variables to the endogenous constructs. For lifestyle, the strongest influence is exerted by environmental advertisement (0.205, medium effect), followed by eco-brand (0.145) and eco-label (0.096), which fall within the small to nearly medium effect category, as shown in Table 9. In contrast, environmental awareness (0.002) demonstrates a very small and practically negligible effect.

Lifestyle demonstrates the most substantial contribution to purchase intention, as indicated by a value of 0.178, which represents a medium effect size. This result suggests that individuals' sustainable lifestyle choices strongly influence their intention to purchase eco-friendly products, highlighting the importance of lifestyle-based marketing strategies. In comparison, eco-brand (0.031), eco-label (0.061), and environmental awareness (0.023) show relatively small effect sizes. While these factors influence purchase intention, their impacts are less pronounced compared to lifestyle. Interestingly, environmental advertisement (0.002) exhibits no meaningful direct contribution to purchase intention. It suggests that promotional efforts alone may not be sufficient to drive purchase behavior unless they are linked to deeper lifestyle values.

Overall, these findings underscore the pivotal role of lifestyle in shaping purchase intention, positioning it as a central mediating factor between green marketing efforts and consumer behavior. Moreover, the results suggest that environmental advertisement primarily influences consumer behavior indirectly by shaping eco-conscious lifestyles rather than directly affecting purchase decisions. Meanwhile, environmental awareness, although relevant, contributes only marginally to lifestyle development and purchase behavior. It indicates a need for strategies that go beyond awareness campaigns to foster actionable lifestyle changes aligned with sustainability goals.

Table 9 F-Square Test Results

	F-Square
Eco Brand → Lifestyle	0.145
Eco Brand → Purchase Intention	0.031
Eco Label → Lifestyle	0.096
Eco Label → Purchase Intention	0.061
Environmental Advertisement → Lifestyle	0.205
Environmental Advertisement → Purchase Intention	0.002
Environmental Awareness → Lifestyle	0.002
Environmental Awareness → Purchase Intention	0.023
Lifestyle → Purchase Intention	0.178

The Q-square predictive relevance is a statistical measure used to evaluate the predictive capability of a PLS model (De Sousa Jabbour et al., 2014). In recent studies, the Q-square predictive relevance value is widely used to assess the predictive accuracy of endogenous constructs in SEM-PLS. A model is considered to have predictive relevance when the Q-square value is greater than zero, indicating that the model has sufficient capability to predict the observed data. Furthermore, the magnitude of the Q-square value can be interpreted using established thresholds. According to recent methodological literature, Q-square values of 0.02, 0.15, and 0.35 are generally interpreted as small, medium, and large predictive relevance, respectively. This interpretation allows researchers not only to determine whether the model predicts well but also to quantify the strength of that prediction (Balaskas et al., 2023).

These thresholds are increasingly adopted in business, behavioral, and social science research as benchmarks to interpret the practical relevance of a model's predictive power. Higher Q-square values indicate a model's stronger ability to explain and predict the observed data. It provides greater confidence in its applicability and reliability for decision-making and theoretical validation (Hair et al., 2021a).

The Q-square results indicate the predictive relevance of the structural model for endogenous constructs. The value is calculated using the formula: $Q^2 = 1 - (\text{Sum of Squares Errors (SSE}) / \text{Sum of Squares Observations (SSO)})$. The values greater than zero indicate adequate predictive relevance (Hair et al., 2019). In this model, the exogenous constructs (eco-brand, eco-label, environmental advertisement, and environmental awareness) have Q-square values of 0, which is expected given their role as independent constructs. In contrast, the endogenous constructs, lifestyle and purchase intention, have Q-square values of 0.444 and 0.434, respectively, as shown in Table 10 and Figure 1. These values fall within the medium-to-large category. They indicate that the model demonstrates good predictive capability in explaining variance in lifestyle and purchase intention. These findings strengthen the validity of the research model in examining the relationships among variables.

Table 10 Q-Square Test Results

Variable	Sum of Squares Observations (SSO)	Sum of Squares Errors (SSE)	$Q^2 (=1 - SSE/SSO)$
Eco-Brand	1,230	1,230	0.000
Eco-Label	1,230	1,230	0.000
Environmental Advertisement	1,230	1,230	0.000
Environmental Awareness	1,230	1,230	0.000
Lifestyle	1,230	683.88	0.444
Purchase Intention	1,230	696.18	0.434

In Figure 1, the structural model estimated from data from 205 respondents indicates that variables such as environmental awareness, eco-brand, eco-label, and environmental advertisement significantly influence lifestyle, which, in turn, has a strong impact on purchase intention for environmentally friendly products. The analysis reveals that lifestyle and purchase intention have R-square values of 0.758 and 0.785, respectively-classified as substantial-demonstrating the model's strong explanatory power. The highest path coefficients are found between eco-brand and purchase intention (4.227), and lifestyle and purchase intention (4.129), indicating that perceptions of eco-friendly branding and a sustainable lifestyle are key drivers of consumers' purchase intentions. Environmental advertisement shows the strongest influence on shaping lifestyle (3.670), but has no direct effect on purchase intention (0.005). While eco-label positively affects lifestyle (2.516), its direct impact on purchase intention is minimal (0.035). Environmental awareness also contributes, although

its influence on both endogenous variables is relatively modest. Overall, the findings suggest that brand communication strategies that promote sustainable lifestyles and strengthen eco-brand positioning are more effective in enhancing green product purchase intentions than direct advertising or reliance on eco-label alone.

Next, the structural model analysis reveals several significant relationships. Eco-brand has a positive and significant effect on both lifestyle ($\beta = 0.152$; $t = 3.105$; $p = 0.002$) and purchase intention ($\beta = 0.269$; $t = 4.712$; $p < 0.001$). Similarly, eco-

label significantly influences lifestyle ($\beta = 0.340$; $t = 2.985$; $p = 0.003$) and purchase intention ($\beta = 0.268$; $t = 2.529$; $p = 0.012$). Environmental advertisement strongly and significantly affects lifestyle ($\beta = 0.455$; $t = 4.025$; $p < 0.001$) but does not significantly influence purchase intention ($\beta = 0.005$; $t = 0.052$; $p = 0.959$). Environmental awareness does not significantly affect lifestyle ($\beta = 0.016$; $t = 0.190$; $p = 0.849$) but has a weak yet significant influence on purchase intention ($\beta = 0.102$; $t = 2.021$; $p = 0.044$). Lifestyle has a substantial and significant effect on purchase intention ($\beta = 0.392$; $t = 4.653$; $p < 0.001$), as shown in Table 11.

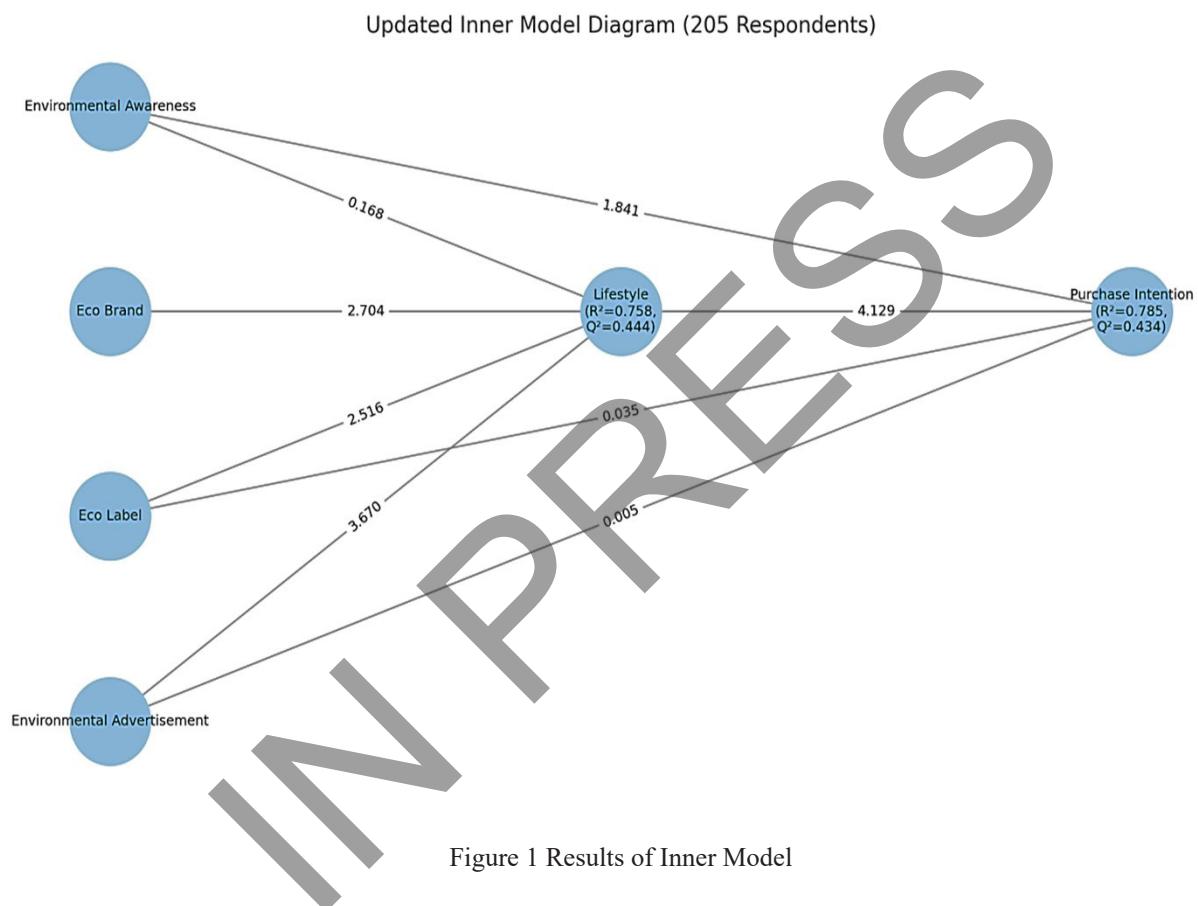


Table 11 Results of the Hypothesis Testing for Direct Effects

Path	Original Sample (O)	T Statistics (O/STDEV)	P-Values
Eco Brand → Lifestyle	0.152	3.105	0.002
Eco Brand → Purchase Intention	0.269	4.712	0.000
Eco Label → Lifestyle	0.340	2.985	0.003
Eco Label → Purchase Intention	0.268	2.529	0.012
Environmental Advertisement → Lifestyle	0.455	4.025	0.000
Environmental Advertisement → Purchase Intention	0.005	0.052	0.959
Environmental Awareness → Lifestyle	0.016	0.190	0.849
Environmental Awareness → Purchase Intention	0.102	2.021	0.044
Lifestyle → Purchase Intention	0.392	4.653	0.000

An eco-brand has a positive and significant effect on lifestyle. H1 is accepted. This finding indicates that the stronger the green brand image is, the greater the likelihood that consumers will adopt a sustainable lifestyle. This result is consistent with Ahmad et al. (2020), finding that positive perceptions of green brands encourage consumers to integrate sustainability values into their daily lives. Thus, strengthening an eco-brand not only enhances corporate image but also shapes long-term consumption behavior.

The results demonstrate that the eco-brand positively and significantly affects purchase intention. H2 is accepted. Consumers who perceive a brand as more environmentally friendly have a stronger intention to purchase green products. This finding is consistent with Zameer and Yasmeen (2022), who have emphasized that a green brand image increases consumer trust and loyalty, thereby strengthening purchase intentions toward eco-friendly products.

Eco-label significantly affects lifestyle. H3 is accepted. Clear and credible eco-labels encourage consumers to adjust their lifestyles toward more sustainable practices. This finding supports Thøgersen et al. (2010) that eco-label enhances awareness and motivate consumers to integrate green values into their daily activities.

Eco-label significantly influences purchase intention. H4 is accepted. The presence of eco-labels provides assurance of quality and credibility. It ultimately increases consumer purchase intentions. This result is consistent with Flavián et al. (2020). Eco-label serves as a credibility signals that strengthen consumer interest in purchasing green products.

The findings reveal that environmental advertisement has a positive and significant effect on lifestyle. H5 is accepted. It indicates that advertisements emphasizing sustainability can shape a more environmentally friendly lifestyle among consumers. This result is consistent with Flavián et al. (2020) that environmental messages in advertisements effectively drive the internalization of sustainability values in consumers' daily lives.

Environmental advertisement does not have a significant effect on purchase intention. H6 is not supported. This finding suggests that although environmental advertising may shape sustainable lifestyles, it does not directly stimulate purchase intentions. This result highlights the importance of advertising strategies that not only inform but also connect sustainability messages with consumers' emotional needs. This finding is consistent with previous research suggesting that environmental advertising often enhances awareness and attitudes but does not always translate directly into purchase intention (Balaskas et al., 2023).

Environmental awareness does not significantly affect lifestyle. H7 is not supported. Awareness of environmental issues alone is not sufficient to drive lifestyle change. This finding points to an awareness-action gap, consistent with the literature that emphasizes the need for external factors, such as

social ecosystems or behavioral incentives, to translate awareness into action (De Sousa Jabbour et al., 2014).

Although modest, environmental awareness has a significant effect on purchase intention. H8 is accepted. Consumers who are more aware of environmental issues tend to show stronger intentions to purchase eco-friendly products. This result aligns with Zameer and Yasmeen (2022) that environmental knowledge enhances the likelihood of supporting green products, although its effect is weaker than branding or lifestyle factors.

Lifestyle significantly affects purchase intention. H9 is supported. Consumers with sustainable lifestyles are more likely to purchase eco-friendly products. This finding supports the TPB (Flavián et al., 2020), which highlights that personal values and internalized attitudes are strong predictors of behavioral intention.

These insights underscore the importance of adopting holistic green marketing strategies that extend beyond merely raising environmental awareness. Instead of relying solely on informational campaigns, marketers should focus on fostering sustainable behaviors by integrating eco-conscious values into consumers' everyday lifestyles. Campaigns designed around lifestyle transformation can effectively shape long-term attitudes and habits, rather than temporary purchasing decisions. By promoting sustainability as part of one's identity and routine, these strategies increase the likelihood of repeated eco-friendly choices. Ultimately, such an approach ensures that green consumption becomes a sustained behavioral norm, not just a sporadic or trend-driven action.

The results of the indirect effect analysis indicate that lifestyle serves as a mediating variable in the relationships among several constructs and purchase intention. The mediation effect of eco-brand on purchase intention through lifestyle is statistically significant, albeit relatively small, with a coefficient of 0.062 and a t-value of 2.498 ($p = 0.013$). A stronger mediation effect is observed in the relationship between eco-label and purchase intention, with a coefficient of 0.138 and a t-value of 2.457 ($p = 0.014$), indicating that perceptions of eco-label encourage sustainable lifestyle choices, which, in turn, enhance consumers' purchase intentions. The greatest mediation effect is found in the relationship between environmental advertisement and purchase intention via lifestyle, with a coefficient of 0.181 and a t-value of 2.675 ($p = 0.008$). It suggests that environmentally oriented advertising effectively promotes eco-friendly lifestyles, thereby influencing purchasing behavior. Conversely, environmental awareness does not exhibit a significant mediation effect on purchase intention through lifestyle, as indicated by its coefficient of 0.007 and t-value of 0.182 ($p = 0.855$). The result implies that environmental awareness alone is insufficient to shape purchase intentions through lifestyle changes, as shown in Table 12.

Overall, these findings underscore the pivotal mediating role of lifestyle, particularly in translating the effects of eco-brand, eco-label, and environmental

Table 12 Results of the Hypothesis Testing for Indirect Effects

Relationship	Original sample (O)	T statistics (O/STDEV)	P values
Eco-Brand → Lifestyle → Purchase Intention	0.062	2.498	0.013
Eco-Label → Lifestyle → Purchase Intention	0.138	2.457	0.014
Environmental Advertisement → Lifestyle → Purchase Intention	0.181	2.675	0.008
Environmental Awareness → Lifestyle → Purchase Intention	0.007	0.182	0.855

advertisement into actual purchase intention. H10 is supported, indicating that lifestyle significantly mediates the relationship between eco-label and purchase intention, eco-brand and purchase intention, as well as between environmental advertisement and purchase intention. The results suggest that eco-branding, eco-labeling, and environmentally focused promotional campaigns are most effective when they influence consumers' daily habits, values, and lifestyle choices, rather than attempting to directly trigger purchase behavior. In this context, a strong eco-brand can foster long-term associations with environmental responsibility and ethical values, which gradually shape consumers' lifestyles and consumption patterns. For example, eco-brand identity can enhance consumers' emotional attachment and trust toward environmentally responsible products, thereby reinforcing sustainable lifestyle orientations (H3 is supported). Similarly, eco-labels can shape how consumers perceive the sustainability and credibility of a product (H4 is supported), while environmental advertisements can inspire lifestyle changes such as reduced plastic use or an increased preference for reusable items (H5 is supported). Collectively, these mechanisms create a stronger and more enduring foundation for green purchasing decisions by embedding sustainability into consumers' lifestyles, rather than relying solely on immediate transactional appeals (Balaskas et al., 2023).

In contrast, environmental awareness alone appears insufficient to produce meaningful changes in lifestyle or purchase behavior, suggesting that awareness campaigns must be complemented by actionable strategies and engagement initiatives. This finding is reflected in H6, which is not supported, indicating that environmental advertising does not directly influence purchase intention. Effective strategies may include educational programs, experiential marketing, or community-based sustainability movements that encourage individuals to transform awareness into concrete lifestyle changes. Thus, the research highlights the need for an integrated approach that combines awareness-building with lifestyle-focused interventions to enhance the overall effectiveness of green marketing strategies.

CONCLUSION

The research empirically validates an integrated model linking environmental awareness, eco-brand, eco-label, environmental advertisement, and lifestyle to purchase intention for eco-friendly products. The results confirm that all four factors significantly influence purchase intention, with lifestyle playing a central mediating role that connects these variables to consumers' eco-friendly purchasing behavior. This result highlights lifestyle as a key mechanism through which green marketing strategies can effectively shape consumer decisions. Managerially, businesses should prioritize campaigns that not only raise environmental awareness but also promote eco-friendly lifestyles, supported by credible eco-labeling, strong eco-brand positioning, and persuasive green advertising. Policymakers are likewise encouraged to strengthen regulatory frameworks and educational programs to foster lifestyle changes that sustain eco-friendly consumption.

Despite its contributions, the research is limited by its cross-sectional design and focus on a single cultural context. Future research can explore longitudinal effects, incorporate diverse demographic and cultural settings, and examine additional mediating or moderating variables. Addressing these directions will deepen the understanding of sustainable consumption dynamics and provide more actionable strategies for businesses and policymakers.

AUTHOR CONTRIBUTIONS

Collected the data, K. A. S.; Performed the analysis, O. D. P. S., E. P. A. P., and K. A. S.; Wrote the paper, E. P. A. P. and K. A. S.; and Developed the survey instrument/questionnaire, O. D. P. S. and E. P. A. P.

DATA AVAILABILITY

The authors confirm that the data supporting the findings of the research are available within the article [and/or] its supplementary materials.

REFERENCES

Ahmad, W., Kim, W. G., Anwer, Z., & Zhuang, W. (2020). Schwartz personal values, theory of planned behavior and environmental consciousness: How tourists' visiting intentions towards eco-friendly destinations are shaped? *Journal of Business Research*, 110, 228–236. <https://doi.org/10.1016/j.jbusres.2020.01.040>

Akkaya, M. (2021). Understanding the impacts of lifestyle segmentation & perceived value on brand purchase intention: An empirical study in different product categories. *European Research on Management and Business Economics*, 27(3), 1–11. <https://doi.org/10.1016/j.iedeen.2021.100155>

Alamsyah, D. P., Othman, N. A., & Indriana. (2021). Consumer awareness towards eco-friendly product through green advertising: Environmentally friendly strategy. In *IOP Conference Series: Earth and Environmental Science*. IOP Publishing. <https://doi.org/10.1088/1755-1315/824/1/012043>

Balaskas, S., Panagiotarou, A., & Rigou, M. (2023). Impact of environmental concern, emotional appeals, and attitude toward the advertisement on the intention to buy green products: The case of younger consumer audiences. *Sustainability*, 15(17), 1–19. <https://doi.org/10.3390/su151713204>

Brivio, F., Vigàò, A., Paterna, A., Palena, N., & Greco, A. (2023). Narrative review and analysis of the use of "lifestyle" in health psychology. *International Journal of Environmental Research and Public Health*, 20(5), 1–18. <https://doi.org/10.3390/ijerph20054427>

Chan, S. H., & Lay, Y. F. (2018). Examining the reliability and validity of research instruments using Partial Least Squares Structural Equation Modeling (PLS-SEM). *Journal of Baltic Science Education*, 17(2), 239–251.

Coppola, C., Vollero, A., & Siano, A. (2021). Consumer upcycling as emancipated self-production: Understanding motivations and identifying upcycler types. *Journal of Cleaner Production*, 285. <https://doi.org/10.1016/j.jclepro.2020.124812>

Darmawan, G., & Suasana, I. G. A. K. G. (2020). The role of green packaging mediates the effect of green product on purchase intention of Starbucks tumbler (Study at Starbucks GriyaSantrian). *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 5(3), 128–134.

Dewi Pitaloka Cahyadi, N., & Jaya Agung Widagda, I. G. N. (2023). Attitude towards green memediasi pengaruh environmental concern dan green perceived value terhadap green purchase intention (Studi penggunaan tumbler Starbucks di wilayah Sarbagita Bali). *E-Jurnal Ekonomi dan Bisnis Universitas Udayana*, 1034–1045. <https://doi.org/10.24843/EEB.2023.v12.i06.p02>

De Sousa Jabbour, A. B. L., Jabbour, C. J. C., Latan, H., Teixeira, A. A., & De Oliveira, J. H. C. (2014). Quality management, environmental management maturity, green supply chain practices and green performance of Brazilian companies with ISO 14001 certification: Direct and indirect effects. *Transportation Research Part E: Logistics and Transportation Review*, 67, 39–51. <https://doi.org/10.1016/j.tre.2014.03.005>

Flavián, C., Gurrea, R., & Orús, C. (2020). Combining channels to make smart purchases: The role of webrooming and showrooming. *Journal of Retailing and Consumer Services*, 52, 1–11. <https://doi.org/10.1016/j.jretconser.2019.101923>

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>

Gozali, P. S., & Tunjungsari, H. K. (2022). Faktor-faktor yang memengaruhi purchase intention luxury brand melalui dampak rasional dan emosional. *Jurnal Manajemen Bisnis Dan Kewirausahaan*, 6(5), 554–558. <https://doi.org/10.24912/jmbk.v6i5.20323>

Guo, X., Cheng, L., & Liu, J. (2020). Green supply chain contracts with eco-labels issued by the sales platform: profitability and environmental implications. *International Journal of Production Research*, 58(5), 1485–1504. <https://doi.org/10.1080/00207543.2019.1658911>

Hair, J. F. (2019). When to use and how to report the results of PLS-SEM. 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>

Hair Jr., J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021a). *Partial Least Squares Structural Equation Modeling (PLS-SEM) using R*. Springer. <https://doi.org/10.1007/978-3-030-80519-7>

Hair Jr., J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021b). Evaluation of reflective measurement models. In *Partial Least Squares Structural Equation Modeling (PLS-SEM) using R: A workbook* (pp. 75–90). Springer International Publishing.

Hair, J. F., Hult M., G. T., Ringle, C. M., & Sarstedt, M. (2017). A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>

Hasanah, I., & Anjaningrum, W. D. (2023). Purchase intention: Strong effects of green advertising attributes, para-social relationships, and perceived credibility. *Distribusi - Journal of Management and Business*, 11(1), 33–46. <https://doi.org/10.29303/distribusi.v11i1.267>

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43,

115–135. <https://doi.org/10.1007/s11747-014-0403-8>

Hubona, G. S. (2009). Structural Equation Modeling (SEM) using SmartPLS software: Analyzing path models using Partial Least Squares (PLS) based SEM. In *AMCIS 2009 Proceedings*.

Hwang, E. J., & Sim, I. O. (2021). The structural equation modeling of personal aspects, environmental aspects, and happiness among older adults living alone: A cross-sectional study. *BMC Geriatrics*, 21, 1–11. <https://doi.org/10.1186/s12877-021-02430-4>

Ibrahim, H., Mariapan, M., Lin, E. L. A., & Bidin, S. (2021). Environmental concern, attitude and intention in understanding student's anti-littering behavior using structural equation modeling. *Sustainability*, 13(8), 1–12. <https://doi.org/10.3390/su13084301>

Khan, N. L., & Qureshi, I. H. (2025). Impact of Environmental Concern on Green Purchase Intention: A Mediation Model Using Green Trust. *Asian Journal of Economics, Business and Accounting*, 25(3), 538–550. <https://doi.org/10.9734/ajeba/2025/v25i31729>

Kim, W., & Cha, S. (2021). How attributes of green advertising affect purchase intention: The moderating role of consumer innovativeness. *Sustainability*, 13(16), 1–10. <https://doi.org/10.3390/su13168723>

Laheri, V. K., Lim, W. M., Arya, P. K., & Kumar, S. (2024). A multidimensional lens of environmental consciousness: towards an environmentally conscious theory of planned behavior. *Journal of Consumer Marketing*, 41(3), 281–297. <https://doi.org/10.1108/JCM-03-2023-5875>

Lavuri, R., Roubaud, D., & Grebnevych, O. (2023). Sustainable consumption behaviour: Mediating role of pro-environment self-identity, attitude, and moderation role of environmental protection emotion. *Journal of Environmental Management*, 347. <https://doi.org/10.1016/j.jenvman.2023.119106>

Lee, J., Lim, S. H., Batul, A., Sharma, B., Singh, K., Khor, W., Raveendran, K. D. A., Kong, M. C., Kooli, S., Pradhan, S., & Kee, D. M. H. (2023). Greening Starbucks: Investigating the relationship between consumer green awareness and purchase intentions in Malaysia. *Journal of the Community Development in Asia*, 6(3), 283–298. <https://doi.org/10.32535/jcda.v6i3.2500>

Liang, H., Wu, Z., & Du, S. (2024). Study on the impact of environmental awareness, health consciousness, and individual basic conditions on the consumption intention of green furniture. *Sustainable Futures*, 8, 1–11. <https://doi.org/10.1016/j.sfr.2024.100245>

Liang, J., Li, J., & Lei, Q. (2022). Exploring the influence of environmental values on green consumption behavior of apparel: A chain multiple mediation model among Chinese Generation Z. *Sustainability*, 14(19), 1–26. <https://doi.org/10.3390/su141912850>

Lopes, P. R., Rosário, A. T., & Rosário, F. S. (2024). Sustainable brand advertising—The green advertising for Generation Z, a qualitative LRSB analyze. *Platforms*, 2(2), 84–100. <https://doi.org/10.3390/platforms2020006>

Loučanová, E., Šupín, M., Čorejová, T., Repková-Štofková, K., Šupínová, M., Štofková, Z., & Olšiaková, M. (2021). Sustainability and branding: An integrated perspective of eco-innovation and brand. *Sustainability*, 13(2), 1–10. <https://doi.org/10.3390/su13020732>

Lu, Y., & Pan, D. (2025). The impact mechanism of eco-labels on consumer purchase intention in international trade: A cross-cultural psychological perspective. *Environment and Social Psychology*, 10(5), 1–32.

Marcoulides, G. A. (Ed.). (1998). *Modern methods for business research*. Psychology Press. <https://doi.org/10.4324/9781410604385>

Mohapatra, S. C., & Chamola, S. K. (2020). Sampling in research series 1: Basic concepts in estimating sample size. *Journal of Advanced Research in Medical Science & Technology*, 7(1), 17–21.

Nguyen-Viet, B. (2022). Understanding the influence of eco-label, and green advertising on green purchase intention: The mediating role of green brand equity. *Journal of Food Products Marketing*, 28(2), 87–103. <https://doi.org/10.1080/10454446.2022.2043212>

Nguyen, D. D. (2023). Evaluating the consumer attitude and behavioral consumption of green products in Vietnam. *Sustainability*, 15(9), 1–16. <https://doi.org/10.3390/su15097612>

Noh, Y., Kim, M. J., & Kim, D. Y. (2024). The effect of brand lovemark on reusable cups in coffee shops: Machine use intention, willingness to pay a deposit, and green brand loyalty. *Sustainability*, 16(3), 1–17. <https://doi.org/10.3390/su16031113>

Ornelas Herrera, S. I., Baba, Y., Kallas, Z., Meers, E., Michels, E., Hajdu, Z., & Spicnagel, A. M. (2025). The role of environmental attitudes and consumption patterns in consumers' preferences for sustainable food from circular farming system: A six EU case studies. *Agricultural and Food Economics*, 13, 1–27. <https://doi.org/10.1186/s40100-025-00350-0>

Panopoulos, A., Poulis, A., Theodoridis, P., & Kalampakas, A. (2023). Influencing green purchase intention through eco labels and user-generated content. *Sustainability*, 15(1), 1–17.

Putri, S. I., Yulianti, E., Saputra, G. G., & Ningrum, H. F. (2022). Faktor penentu minat beli konsumen melalui e-commerce berbasis marketplace. *Jurnal Ilmiah Poli Bisnis*, 14(1), 29–40. <https://doi.org/10.30630/jipb.v14i1.734>

Rahmawati, D. (2024). How eco-conscious choices are shaping Generation Z's tumbler market. *Commercium :Journal of Business and Management*, 2(4), 227–239. <https://doi.org/10.61978/commercium.v2i4.364>

Riorini, S. V., Pakpahan, A. K., Sembiring, R. J., & Kurniawan, A. (2023). The antecedents of consumer purchase intention. In *Proceedings of the 3rd International Conference on Management*

and Communication (ICMC 2023) (pp. 312–325). European Publisher. <https://doi.org/10.15405/epsbs.2023.11.02.23>

Rizqiyana, I., & Wahyono. (2020). The influence of eco-brand, eco-labelling and environmental advertisement on consumer purchasing behavior through brand image. *Management Analysis Journal*, 9(2), 211–220. <https://doi.org/10.15294/maj.v9i2.28510>

Shah, R., Modi, A., Muduli, A., & Patel, J. D. (2023). Purchase intention for energy-efficient equipment appliances: extending TPB with eco-labels, green trust, and environmental concern. *Energy Efficiency*, 16. <https://doi.org/10.1007/s12053-023-10111-x>

Sharma, N., & Singh, N. P. (2025). Formative & reflective measurement models. *Southeast Asian Business Review*, 3(2), 87–102. <https://doi.org/10.20473/sabr.v3i2.71007>

Simanjuntak, M., Nafila, N. L., Yuliati, L. N., Johan, I. R., Najib, M., & Sabri, M. F. (2023). Environmental care attitudes and intention to purchase green products: Impact of environmental knowledge, word of mouth, and green marketing. *Sustainability*, 15(6), 1–16. <https://doi.org/10.3390/su15065445>

Simanjutak, O. D. P., & Purba, R. R. (2024). *Analysis of the influence of digital marketing strategy through Search Engine Optimization (SEO) in increasing sales of MSME products in Indonesia*. EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis, 12(4), 4251–4260. <https://doi.org/10.3767/ekombis.v12i4.7136>

Suhaily, L., Darmoyo, S., Boentoro, S., & Anasthashia, E. (2020). The impact of green product innovation, green perceived quality to purchase intention moderated by lifestyle on stainless steel straw. *International Journal of Applied Business and International Management*, 5(2), 13–25.

Tan, Z., Sadiq, B., Bashir, T., Mahmood, H., & Rasool, Y. (2022). Investigating the impact of green marketing components on purchase intention: The mediating role of brand image and brand trust. *Sustainability*, 14(10), 1–15. <https://doi.org/10.3390/su14105939>

Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing*, 44(11-12), 1787–1810. <https://doi.org/10.1108/03090561011079882>

Üzülmez, M., İştin, A. E., & Barakazı, E. (2023). Environmental awareness, ecotourism awareness and ecotourism perception of tourist guides. *Sustainability*, 15(16), 1–20. <https://doi.org/10.3390/su151612616>

Van Hoang, D., & Le Thanh, T. (2024). Relationship between environmental concern, green perceived value and green purchase behaviour: The moderating role of price consciousness. *Organizations and Markets in Emerging Economies*, 15(2(31)), 248–287. <https://doi.org/10.15388/omee.2024.15.12>

Verleye, G., De Ruyck, A., Vermeulen, W., & Schoenaers, I. (2023). Credibility of green advertising: Six elements that drive credibility in green advertising. *Frontiers in Communication*, 8, 1–13. <https://doi.org/10.3389/fcomm.2023.1056020>

Wati, N. W. K., Astari, A. A. E., & Mulyani, P. A. (2023). Pengaruh eco labeling dan green marketing mix terhadap green product purchase intention (Studi kasus pada Agro Wisata Abian Salak Desa Sibetan, Bebandem Kab. Karangasem). *Jurnal Review Pendidikan Dan Pengajaran*, 6(4), 438–444.

Wu, X., Zhong, C., Chen, H., & Zou, X. (2024). Assessment on the environmental concern level and driving mechanism of beach recreationists based on the new ecological paradigm scale. *Sustainability*, 16(8), 1–17. <https://doi.org/10.3390/su16083292>

Yang, Y., Xue, F., & Qiao, G. (2024). The impact of information acquisition ability on consumers' trust in eco-labels in China: Insight of food sustainability. *Frontiers in Sustainable Food Systems*, 8, 1–13. <https://doi.org/10.3389/fsufs.2024.1449848>

Zameer, H., & Yasmeen, H. (2022). Green innovation and environmental awareness driven green purchase intentions. *Marketing Intelligence & Planning*, 40(5), 624–638. <https://doi.org/10.1108/MIP-12-2021-0457>

Zhuang, W., Luo, X., & Riaz, M. U. (2021). On the factors influencing green purchase intention: A meta-analysis approach. *Frontiers in Psychology*, 12, 1–15. <https://doi.org/10.3389/fpsyg.2021.644020>

Zulfikar, I. (2024). Sustainable marketing strategy: Building brand image and customer loyalty in the eco-friendly era. *Jurnal Ekonomi*, 13(03), 1737–1750.