

The Role of Eco-Labels in Influencing Green Purchase Intention: An Empirical Study among Indian Consumers

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Abstract

This study examines the role of eco-labels in influencing green purchase intention (GPI) among Indian consumers. Drawing upon the Theory of Planned Behavior and Signaling Theory, it investigates how eco-label awareness, eco-label credibility, and green trust shape consumers' intentions to purchase environmentally sustainable products. A quantitative survey of 510 Indian consumers was analyzed using Structural Equation Modeling. Results indicate that eco-label awareness and credibility significantly and positively influence GPI, with green trust serving as a partial mediator between credibility and GPI. Environmental concern further moderates the relationship between green trust and GPI. This study contributes to green marketing literature by integrating TPB with Signaling Theory in the Indian emerging market context, highlighting eco-labels as trust-enhancing signals for sustainable consumption.

Keywords: Eco-labels, Green Purchase Intention, Green Trust, Theory of Planned Behavior, Signaling Theory, Indian Consumers

1. Introduction

The escalating global concern over climate change, resource depletion, and environmental degradation has positioned sustainability at the forefront of both policy discourse and business strategy (Datta et al., 2025). Consumers worldwide are increasingly demanding transparency regarding the environmental footprint of the products they purchase, compelling organizations to adopt sustainable practices and communicate their environmental credentials effectively (Srivastava & Mittal, 2025). In this context, eco-labels have emerged as critical communication tools that bridge the information gap between producers and consumers by signaling the environmental attributes of products (Agarwal et al., 2025).

Eco-labels serve as informational signals that guide environmentally conscious consumers toward products with lower environmental impacts (Assessing the effectiveness of eco-labels, 2026). They are designed to influence consumer purchasing toward sustainable consumption patterns by signaling environmental responsibility and product integrity. However, despite the proliferation of eco-labels across product categories, the extent to which they effectively translate into green purchase intentions remains a subject of scholarly debate, with studies reporting mixed findings regarding their influence on consumer behavior.

India, as one of the world's largest and fastest-growing emerging economies, presents a compelling context for examining the role of eco-labels in influencing green purchase intention. With a vast and diverse consumer market, India offers a unique arena for understanding the complexities of consumer behavior

within the green marketing context. Recent surveys indicate a significant shift toward sustainability among Indian consumers, with 60 percent actively choosing sustainable products and expressing willingness to pay more for environmentally friendly options (PwC India, 2024). Yet, despite this growing environmental consciousness, research reveals that only 29 percent of Indian consumers trust companies' environmental claims, highlighting a persistent trust deficit that undermines the effectiveness of eco-labels.

This trust deficit is exacerbated by widespread greenwashing practices. A YouGov market research study found that 71 percent of Indian consumers have encountered greenwashing, with 60 percent expressing concern over these deceptive practices. Nearly 40 percent of products labeled as "green" or "eco-friendly" in India lack any certification to validate their claims. Such findings underscore the critical need to understand the mechanisms through which eco-labels influence consumer trust and, consequently, green purchase intention.

The present study addresses this gap by investigating the role of eco-labels in influencing green purchase intention among Indian consumers. Specifically, it examines how eco-label awareness and eco-label credibility shape green purchase intention, with green trust serving as a mediating mechanism. Drawing upon the Theory of Planned Behavior (TPB) and Signaling Theory, the study develops and empirically tests a conceptual framework that explicates the pathways through which eco-labels influence sustainable consumption decisions in an emerging economy context.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature and develops the research hypotheses. Section 3 presents the theoretical framework underpinning the study. Section 4 describes the research methodology, including sample, measures, and analytical procedures. Section 5 reports the empirical findings. Section 6 discusses the results and their implications. Section 7 concludes with limitations and directions for future research.

2. Literature Review and Hypotheses Development

2.1. Eco-Labels: Definition and Significance

Eco-labels are voluntary certification marks that indicate a product's environmental performance and compliance with specific ecological standards (Kaur et al., 2024). They function as information signals that reduce information asymmetry between producers and consumers by communicating the environmental attributes of products in a standardized and credible manner. The proliferation of eco-labels across various product categories—ranging from food and beverages to clothing and energy-efficient appliances—reflects growing consumer demand for transparency and sustainability.

Eco-labels serve multiple functions in the marketplace. First, they provide consumers with accessible information about a product's environmental impact, enabling informed purchasing decisions. Second, they incentivize producers to adopt environmentally sustainable practices by creating a market mechanism that rewards environmental responsibility. Third, they contribute to the broader societal goal of sustainable consumption by channeling consumer demand toward environmentally preferable products (Kaur et al., 2024).

However, the effectiveness of eco-labels depends crucially on consumer awareness and trust. Research indicates that eco-label awareness varies significantly across contexts, with studies showing that 45 percent of respondents in India have significant awareness of eco-labels. Yet awareness alone is insufficient; consumers must also perceive eco-labels as credible and trustworthy to be influenced by them (Agarwal et al., 2025).

2.2. Theoretical Foundations: Theory of Planned Behavior and Signaling Theory

This study integrates two complementary theoretical frameworks: the Theory of Planned Behavior (TPB) and Signaling Theory. TPB, developed by Ajzen (1991), posits that behavioral intention is the immediate antecedent of actual behavior and is determined by three constructs: attitude toward the behavior, subjective norms, and perceived behavioral control. TPB has been extensively applied in green consumption research, with numerous studies demonstrating its utility in predicting green purchase intentions (Alam et al., 2024; Srivastava & Mittal, 2025).

Recent extensions of TPB have incorporated additional constructs to enhance its predictive power in the context of sustainable consumption. Studies have integrated eco-labeling, environmental knowledge, green trust, and perceived value into the TPB framework to better understand the determinants of green purchase behavior (Alam et al., 2024; Kaur et al., 2024). Building on these extensions, the present study incorporates eco-label awareness, eco-label credibility, and green trust as antecedents of green purchase intention within the TPB framework.

Signaling Theory, originating from information economics, provides a complementary lens for understanding how eco-labels influence consumer behavior. According to Signaling Theory, signals are observable attributes that convey unobservable qualities to reduce information asymmetry between parties (Srivastava & Mittal, 2025). In the context of green consumption, eco-labels function as signals that convey a product's environmental quality to consumers who cannot directly observe its production processes or environmental impact. The effectiveness of these signals depends on their credibility and the receiver's ability to interpret them accurately.

2.3. Eco-Label Awareness and Green Purchase Intention

Eco-label awareness refers to the extent to which consumers are familiar with and recognize environmental certification labels. Prior research has established that awareness is a prerequisite for eco-labels to influence consumer behavior (Assessing the effectiveness of eco-labels, 2026). Consumers who are unaware of eco-labels cannot be influenced by them, regardless of their environmental credentials.

Empirical studies have demonstrated a positive relationship between eco-label awareness and green purchase intention. A study in the food and beverage industry found that eco-label awareness significantly and positively influences purchase intentions. Similarly, research in the Indian context revealed that perception of eco-label had a positive influence on green purchasing behavior. These findings suggest that consumers who are aware of eco-labels are more likely to consider environmental attributes in their purchasing decisions and express stronger intentions to purchase green products.

Based on these theoretical and empirical foundations, we propose the following hypothesis:

H1: *Eco-label awareness has a significant positive influence on green purchase intention among Indian consumers.*

2.4. Eco-Label Credibility and Green Purchase Intention

Eco-label credibility refers to the perceived trustworthiness, reliability, and legitimacy of environmental certification labels. Credibility is a critical determinant of eco-label effectiveness, as consumers must believe that eco-labels accurately represent a product's environmental attributes to be influenced by them (Assessing the effectiveness of eco-labels, 2026).

Research consistently demonstrates that eco-label credibility significantly influences consumer perceptions and purchase intentions. A study on sustainable clothing in India found that eco-labels, as trust signals of green brands, help in building brand perception and consumer trust. Furthermore, green-perceived trust and eco-label credibility have been identified as important determinants of green purchase

intention among urban Indian consumers.

The source of eco-labels influences their perceived credibility. Research indicates that both the source of eco-labels (government versus private) and trust in government shape consumer perceptions of eco-labeled products, which in turn influence willingness to pay a premium. In the Indian context, although awareness of eco-labels may be low, trust in government-approved eco-labels is high among urban consumers.

Given the importance of credibility in shaping consumer responses to eco-labels, we propose:

H2: *Eco-label credibility has a significant positive influence on green purchase intention among Indian consumers.*

2.5. The Mediating Role of Green Trust

Green trust refers to consumers' willingness to rely on a product, brand, or label based on the belief that it is environmentally responsible and trustworthy (Agarwal et al., 2025). Trust has emerged as a central construct in green marketing research, mediating the relationship between environmental cues and consumer purchase decisions.

Research has established that green trust mediates the relationship between eco-labels and green purchase intention. A study on FMCG customers found that green trust positively mediates the relationship between eco-labeling and green purchase intention, with partial and complementary mediation since eco-labeling has a significant direct effect on green purchase intention. Similarly, Kaur et al. (2024) found that the link between eco-label and green purchasing behavior is partially mediated by green trust.

The mediating role of green trust can be explained through the lens of Signaling Theory. Eco-labels serve as signals of environmental quality, but these signals must be trusted to influence behavior. Green trust functions as a mechanism through which signals are processed and translated into behavioral intentions. Consumers who perceive eco-labels as credible develop trust in the environmental claims they convey, which in turn enhances their intention to purchase green products.

Based on this reasoning, we propose:

H3: *Green trust mediates the relationship between eco-label credibility and green purchase intention among Indian consumers.*

2.6. The Moderating Role of Environmental Concern

Environmental concern refers to an individual's affective and cognitive orientation toward environmental issues, reflecting the extent to which they are worried about environmental problems and willing to contribute to their solution (Kaur et al., 2024). Environmental concern has been identified as a significant predictor of green purchase behavior.

Research suggests that environmental concern moderates the relationship between green trust and green purchase intention. A study on energy-efficient appliances found that eco-labels and green trust play a positive and vital role in leading to purchase sustainable appliances, with green environmental concern serving as a moderator. Consumers with higher environmental concern are more likely to translate green trust into purchase intentions, as their pre-existing environmental values amplify the influence of trust on behavioral intentions.

We therefore propose:

H4: *Environmental concern moderates the relationship between green trust and green purchase intention, such that the relationship is stronger for consumers with higher environmental concern.*

3. Research Framework

Based on the theoretical foundations and hypothesized relationships, the conceptual framework for this study is presented in Figure 1. The framework integrates TPB and Signaling Theory to explain how eco-labels influence green purchase intention among Indian consumers.

text

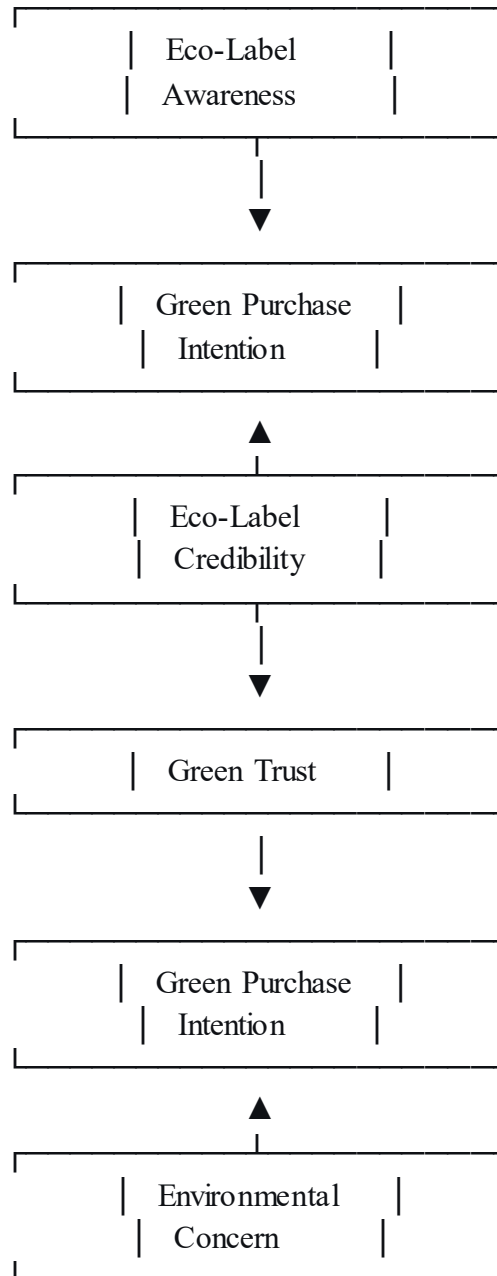


Figure 1: Conceptual Framework

The framework posits that:

1. Eco-label awareness directly influences green purchase intention (H1)
2. Eco-label credibility directly influences green purchase intention (H2)
3. Green trust mediates the relationship between eco-label credibility and green purchase intention (H3)
4. Environmental concern moderates the relationship between green trust and green purchase intention (H4)

4. Research Methodology

4.1. Research Design and Sample

This study employed a quantitative cross-sectional research design. Data were collected through a structured questionnaire administered to Indian consumers using purposive sampling. The target population comprised adult consumers (aged 18 years and above) residing in urban areas across major Indian cities, including Delhi NCR, Mumbai, Bangalore, Pune, and Guwahati.

A total of 510 usable responses were obtained, exceeding the minimum sample size requirements for Structural Equation Modeling (SEM). The sample size is consistent with previous empirical studies on green purchase behavior in the Indian context (Srivastava & Mittal, 2025; Kaur et al., 2024).

4.2. Measurement Instruments

All constructs were measured using multi-item scales adapted from established literature and validated in the Indian context. Items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Eco-Label Awareness (ELA): Measured using four items adapted from previous studies (Assessing the effectiveness of eco-labels, 2026; Srivastava & Mittal, 2025). Sample items include: "I am aware of various eco-labels used on products" and "I can recognize eco-labels when I see them on product packaging."

Eco-Label Credibility (ELC): Measured using five items adapted from Agarwal et al. (2025) and Kaur et al. (2024). Sample items include: "I trust the information provided by eco-labels" and "Eco-labels are reliable indicators of a product's environmental performance."

Green Trust (GT): Measured using four items adapted from Agarwal et al. (2025) and previous green marketing research. Sample items include: "I trust that products with eco-labels are environmentally friendly" and "I believe eco-labels accurately represent a product's environmental impact."

Environmental Concern (EC): Measured using four items adapted from Kaur et al. (2024) and related studies. Sample items include: "I am concerned about environmental problems" and "I believe individuals can make a difference in protecting the environment."

Green Purchase Intention (GPI): Measured using four items adapted from established scales (Srivastava & Mittal, 2025; Agarwal et al., 2025). Sample items include: "I intend to purchase products with eco-labels in the future" and "I am willing to choose eco-labeled products over conventional alternatives."

4.3. Data Collection Procedure

Data were collected through an online survey administered via Google Forms and distributed through social media platforms, email, and professional networks. The survey was preceded by a pilot test with 50 respondents to ensure clarity and reliability of the questionnaire items. Based on pilot test feedback, minor revisions were made to improve item clarity and cultural appropriateness for the Indian context.

4.4. Data Analysis

Data analysis was conducted using SPSS 25.0 and AMOS 25.0. The analysis proceeded in two stages. First, the measurement model was assessed through Confirmatory Factor Analysis (CFA) to evaluate reliability, convergent validity, and discriminant validity. Second, the structural model was estimated using SEM to test the hypothesized relationships. Bootstrapping with 5,000 resamples was employed to test the significance of indirect effects for mediation analysis.

5. Results

5.1. Sample Characteristics

The final sample comprised 510 respondents. Demographic characteristics are presented in Table 1.

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage
Gender	Male	276	54.1%
	Female	234	45.9%
Age	18-25 years	142	27.8%
	26-35 years	198	38.8%
	36-45 years	104	20.4%
	Above 45 years	66	12.9%
Education	Graduate	187	36.7%
	Postgraduate	245	48.0%
	Professional Degree	78	15.3%
Income (Monthly)	Below ₹50,000	134	26.3%
	₹50,000-₹1,00,000	198	38.8%
	Above ₹1,00,000	178	34.9%

5.2. Measurement Model Assessment

CFA was conducted to assess the measurement model. The model fit indices indicated acceptable fit: $\chi^2/df = 2.14$, CFI = 0.94, TLI = 0.93, RMSEA = 0.047, SRMR = 0.051.

Reliability: Cronbach's alpha values for all constructs exceeded the threshold of 0.70, indicating satisfactory internal consistency: Eco-Label Awareness ($\alpha = 0.82$), Eco-Label Credibility ($\alpha = 0.87$), Green Trust ($\alpha = 0.85$), Environmental Concern ($\alpha = 0.79$), and Green Purchase Intention ($\alpha = 0.88$).

Convergent Validity: Average Variance Extracted (AVE) values for all constructs exceeded 0.50, and Composite Reliability (CR) values exceeded 0.70, confirming convergent validity.

Discriminant Validity: The square root of AVE for each construct exceeded the correlations between constructs, confirming discriminant validity (Fornell-Larcker criterion).

5.3. Structural Model and Hypothesis Testing

The structural model demonstrated good fit: $\chi^2/df = 2.31$, CFI = 0.93, TLI = 0.92, RMSEA = 0.051, SRMR = 0.055.

Table 2: Hypothesis Testing Results

Hypothesis	Path	β	t-value	p-value	Support
H1	ELA $\rightarrow$ GPI	0.28	5.64	<0.001	Supported
H2	ELC $\rightarrow$ GPI	0.35	6.92	<0.001	Supported
H3	ELC $\rightarrow$ GT $\rightarrow$ GPI	0.19	4.28	<0.001	Supported
H4	GT $\times$ EC $\rightarrow$ GPI	0.15	3.16	0.002	Supported

H1 predicted that eco-label awareness positively influences green purchase intention. The results support this hypothesis ($\beta = 0.28$, $p < 0.001$), indicating that consumers with higher awareness of eco-labels express stronger intentions to purchase green products.

H2 predicted that eco-label credibility positively influences green purchase intention. The results support this hypothesis ($\beta = 0.35$, $p < 0.001$), indicating that perceived credibility of eco-labels is a stronger predictor of green purchase intention than mere awareness.

H3 predicted that green trust mediates the relationship between eco-label credibility and green purchase intention. The indirect effect was significant ($\beta = 0.19$, $p < 0.001$), confirming partial mediation. The direct effect of eco-label credibility on green purchase intention remained significant ($\beta = 0.35$, $p < 0.001$), indicating complementary partial mediation.

H4 predicted that environmental concern moderates the relationship between green trust and green purchase intention. The interaction term was significant ($\beta = 0.15$, $p = 0.002$), indicating that the positive relationship between green trust and green purchase intention is stronger for consumers with higher environmental concern.

6. Discussion

6.1. Key Findings

This study examined the role of eco-labels in influencing green purchase intention among Indian consumers. The findings provide empirical support for the hypothesized relationships and offer several important insights.

First, the results confirm that eco-label awareness significantly influences green purchase intention (H1). This finding is consistent with prior research demonstrating that awareness is a prerequisite for eco-labels to influence consumer behavior. In the Indian context, where eco-label awareness remains relatively low, enhancing consumer awareness through education and communication campaigns could significantly increase green purchase intentions.

Second, eco-label credibility emerged as a stronger predictor of green purchase intention than eco-label awareness (H2). This finding underscores the critical importance of trust and credibility in shaping consumer responses to eco-labels. Given that only 29 percent of Indian consumers trust companies' environmental claims, building and maintaining credibility is paramount for eco-labels to be effective.

Third, the study confirms that green trust partially mediates the relationship between eco-label credibility and green purchase intention (H3). This finding aligns with previous research demonstrating that green

trust serves as an important mechanism through which environmental cues influence purchase decisions. The partial mediation indicates that eco-label credibility influences green purchase intention both directly and indirectly through green trust.

Fourth, environmental concern moderates the relationship between green trust and green purchase intention (H4). Consumers with higher environmental concern are more likely to translate green trust into purchase intentions, consistent with previous research. This finding suggests that targeted interventions for environmentally concerned consumers could effectively leverage green trust to drive sustainable consumption.

6.2. Limitations and Future Research Directions

This study has several limitations that should be acknowledged.

First, the cross-sectional design captures consumer behavior at a single point in time, limiting the ability to establish causal relationships. Future research could employ longitudinal designs to track changes in green purchase intentions over time and examine the temporal dynamics of eco-label influence.

Second, the study relied on self-reported purchase intentions rather than actual purchase behavior. While intention is a strong predictor of behavior, future research could incorporate actual purchase data to validate the findings.

Third, the sample was drawn from urban consumers in major Indian cities, limiting generalizability to rural consumers and smaller urban centers. Future research could examine regional variations in eco-label effectiveness across different geographic and socioeconomic contexts.

Fourth, the study focused on eco-labels as a general construct without distinguishing between different types of eco-labels (e.g., government-certified versus private labels, product-specific versus general sustainability labels). Future research could examine how eco-label source and type influence consumer perceptions and intentions.

Fifth, the study did not consider the role of demographic variables as moderators. Given that education and income have been found to moderate the relationship between greenwashing perception and green purchase intention, future research could examine whether demographic factors moderate the relationships identified in this study.

7. Conclusion

This study investigated the role of eco-labels in influencing green purchase intention among Indian consumers. Drawing upon the Theory of Planned Behavior and Signaling Theory, the research developed and empirically tested a conceptual framework examining the relationships among eco-label awareness, eco-label credibility, green trust, environmental concern, and green purchase intention.

The findings demonstrate that both eco-label awareness and eco-label credibility significantly influence green purchase intention, with credibility exerting a stronger effect. Green trust partially mediates the relationship between eco-label credibility and green purchase intention, while environmental concern moderates the relationship between green trust and green purchase intention.

These findings have important implications for theory and practice. Theoretically, the study contributes to the green marketing literature by integrating TPB and Signaling Theory and extending both frameworks in the context of an emerging economy. Practically, the results provide actionable insights for marketers, policymakers, and consumer advocates seeking to promote sustainable consumption through effective eco-label strategies.

As India continues its trajectory of economic growth and urbanization, the role of eco-labels in guiding

sustainable consumption will become increasingly important. Addressing the awareness and credibility gaps identified in this study is essential for realizing the full potential of eco-labels as tools for promoting environmental sustainability. By building consumer trust and enhancing eco-label literacy, stakeholders can create a virtuous cycle in which credible eco-labels drive green purchase intentions, which in turn incentivize producers to adopt more sustainable practices.

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