

From Green Digital Engagement to Sustainable Purchase Intention: The Roles of Eco-Claim Transparency, Mobile Experience and Consumer Competencies in India

Remeeja Behum J¹

Assistant Professor, Department of Commerce,
Rathinam College of Arts and Science (Autonomous) Coimbatore¹

Mr Sabarish R², Nithish kumar. K³,

B. Com, UG Student, Department of Commerce
Rathinam College of Arts and Science (Autonomous) Coimbatore²

Abstract – Green e-commerce offers consumers access to products promoted through environmental benefits, sustainability labels and responsible-brand narratives. Yet online shoppers often find it difficult to verify environmental claims before purchasing, while digital engagement may reflect browsing or sharing rather than a genuine intention to buy. This paper proposes an integrated model for examining sustainable online shopping intention among Indian consumers. The framework considers green perceived value, eco-brand credibility, mobile shopping experience and platform sustainability features as antecedents of digital engagement and online shopping intention. Digital engagement is positioned as a mediating mechanism, while digital literacy and environmental knowledge are proposed as moderators of the engagement–intention relationship. The model draws on the Stimulus–Organism–Response perspective, the Theory of Planned Behavior, technology acceptance research and the Elaboration Likelihood Model. A quantitative survey and partial least squares structural equation modeling (PLS-SEM) are proposed. The paper provides hypotheses, suggested measurement items and analysis tables with interpretation guidance. Since no original respondent dataset was provided, empirical coefficients and significance results are deliberately left blank rather than invented. The framework offers a testable approach to understanding how consumers' evaluations of green value and digital experiences may shape sustainable purchasing intentions in India.

Keywords – green e-commerce; digital engagement; green perceived value; eco-brand credibility; mobile shopping experience; digital literacy; environmental knowledge; India; PLS-SEM.

I. INTRODUCTION

E-commerce has changed how consumers discover, evaluate and purchase products. Product pages, mobile applications, social content, online reviews and sustainability labels increasingly shape decisions before a shopper encounters the product physically. Alongside convenience and price, environmental performance has become a consideration for consumers who wish to reduce the impact of their consumption. Nevertheless, the online setting creates an information problem: environmental claims can be difficult to verify, and the use of terms such as “eco-friendly,” “natural” or “sustainable” may not always be supported by clear evidence.

Green e-commerce therefore involves more than presenting environmentally positioned products on a digital platform. Consumers must perceive value in the product, regard environmental claims as credible, experience a usable digital journey and find the platform's sustainability information meaningful. These evaluations may encourage users to read product information, compare alternatives, share content or interact with brands. Such digital engagement may then contribute to purchase intention, although engagement alone does not guarantee a purchase decision.

Prior work has examined green perceived value and green purchase intention, the role of brand credibility in reducing

uncertainty, and the relevance of online engagement to consumer–brand relationships (Chen & Chang, 2012; Hollebeek et al., 2014). Technology acceptance research also highlights the importance of usefulness and ease of use in digital environments (Davis, 1989). However, consumers do not process sustainability-related information equally. Digital literacy can help them navigate online information, while environmental knowledge can help them assess the meaning and credibility of green claims. These competencies may affect how effectively engagement becomes purchase intention.

Building on the model presented in Nguyen (2026), the present paper proposes a new India-focused study. It retains the broad relationships among green value, eco-brand credibility, mobile experience, platform sustainability features, digital engagement and online shopping intention, while positioning the study for a distinct consumer and market context. The contribution is a context-specific framework that can be tested with new data rather than a reproduction of the reference article's results.

II. RESEARCH PROBLEM, OBJECTIVES AND QUESTIONS

The research problem concerns the gap between interaction with green digital content and the intention to purchase sustainably positioned products online. Consumers may click, read or share green content without believing its

claims or considering the product worth buying. At the same time, consumers with stronger environmental knowledge may be better able to evaluate the claims behind a green product, while digital literacy may help them navigate information and platform functions.

Objectives: (1) examine whether green perceived value, eco-brand credibility, mobile shopping experience and platform sustainability features are associated with digital engagement; (2) test their relationships with online shopping intention; (3) examine the mediating role of digital engagement; and (4) assess whether digital literacy and environmental knowledge moderate the relationship between engagement and intention.

Research questions: RQ1: Which green-value, brand and digital-platform factors are associated with digital engagement and online shopping intention? RQ2: Does digital engagement help explain the relationship between these factors and purchase intention? RQ3: Do digital literacy and environmental knowledge change the strength of the engagement–intention relationship?

III. LITERATURE REVIEW AND THEORETICAL FOUNDATION

1. Green perceived value and eco-brand credibility

Green perceived value refers to consumers' overall assessment of the benefits of a product in relation to their environmental expectations and needs. When shoppers believe that a product offers meaningful environmental benefits alongside acceptable functional value, they may be more willing to explore it and consider purchasing it. Chen and Chang (2012) found green perceived value to be relevant to green trust and purchase intention, providing a basis for examining its role in digital shopping contexts. Eco-brand credibility concerns whether consumers regard a brand's environmental statements as believable and dependable. Credible claims may reduce uncertainty, whereas vague or inconsistent claims can create suspicion of greenwashing. In e-commerce, where direct inspection is limited, transparent evidence, verifiable labels and consistent communication can become important signals. Brand credibility may encourage both deeper engagement with sustainability content and stronger purchase intention.

2. Mobile shopping experience and platform sustainability features

Mobile shopping experience includes the perceived convenience, clarity, responsiveness and ease of using a shopping application or mobile website. A poor experience can interrupt product evaluation even when the consumer is interested in sustainability. In contrast, intuitive navigation, accessible product comparisons and clear checkout processes may support continued interaction and purchasing intention. Technology acceptance research provides a theoretical rationale for the importance of perceived usefulness and ease of use in digital systems (Davis, 1989).

Platform sustainability features refer to platform-level functions that help consumers identify and assess environmentally positioned products. Examples include searchable eco-label information, sustainability filters, explanations of environmental attributes and links to relevant evidence. Such features may make green information more visible and usable. Their presence should not be treated as proof that a product is sustainable; the credibility and traceability of the information remain important.

3. Digital engagement as a mediating mechanism

Digital engagement can include consuming, contributing to and creating brand-related content, such as reading information, saving products, asking questions, posting comments or sharing content. Engagement is a behavioural and psychological response to digital stimuli rather than simply a measure of exposure. Consumer-brand engagement research treats engagement as multidimensional and connected to consumers' interactions with brands (Hollebeek et al., 2014). In the proposed model, engagement may provide a pathway through which value and platform evaluations are translated into purchase intention.

4. Digital literacy and environmental knowledge

Digital literacy describes the ability to access, navigate, interpret and critically evaluate digital information. It may help consumers compare product information, locate relevant disclosures and use online shopping functions with confidence. Environmental knowledge concerns understanding environmental issues, product impacts and sustainability-related information. A consumer may be digitally skilled yet unfamiliar with environmental claims, or environmentally knowledgeable but less confident using online shopping tools. Treating the two constructs separately allows the study to test whether general digital capability and sustainability-specific knowledge play different roles.

5. Integrated theoretical framework

The Stimulus–Organism–Response (S-O-R) framework provides a broad logic for connecting environmental and platform cues to internal evaluations and responses (Mehrabian & Russell, 1974). Here, green value, brand credibility, mobile experience and platform features are stimuli; digital engagement represents an intermediate response mechanism; and online shopping intention is the focal outcome.

Technology acceptance research helps explain responses to mobile shopping conditions, while the Elaboration Likelihood Model suggests that consumers' capacity to process information can influence the effect of digital cues (Petty & Cacioppo, 1986). Digital literacy and environmental knowledge are therefore proposed as boundary conditions.

IV. CONCEPTUAL MODEL AND HYPOTHESES

The proposed model includes four antecedents—green perceived value (GP), eco-brand credibility (EB), mobile shopping experience (MS) and platform sustainability features (PS)—with paths to digital engagement behaviour (DE) and online shopping intention (IN). DE is also proposed to mediate antecedent–intention relationships. Digital literacy (DL) and environmental knowledge (EK) are specified as moderators of the DE–IN path.

Hypothesis	Proposed relationship	Expected direction
H1	Green perceived value → Digital engagement	Positive
H2	Green perceived value → Online shopping intention	Positive
H3	Eco-brand credibility → Digital engagement	Positive
H4	Eco-brand credibility → Online shopping intention	Positive
H5	Mobile shopping experience → Digital engagement	Positive
H6	Mobile shopping experience → Online shopping intention	Positive
H7	Platform sustainability features → Digital engagement	Positive
H8	Platform sustainability features → Online shopping intention	Positive
H9	Digital engagement → Online shopping intention	Positive
H10a	Digital literacy moderates digital engagement → intention	Positive moderation expected
H10b	Environmental knowledge moderates digital engagement → intention	Positive moderation expected

Mediation hypotheses: H12a–H12d propose that digital engagement mediates the relationships between each antecedent (GP, EB, MS and PS) and online shopping intention. These indirect effects should be tested individually using bootstrapped confidence intervals. The hypotheses are proposed relationships, not findings established for Indian consumers.

V. RESEARCH METHODOLOGY

1. Design and target population

A quantitative, cross-sectional survey is proposed among adults in India who have purchased, or seriously considered purchasing, products presented as environmentally responsible through an e-commerce website or mobile application during the previous six months. To improve

contextual relevance, screening questions should confirm recent online-shopping experience and exposure to green-product claims. A multi-region sample would improve diversity; if recruitment is limited to a state or city, the title and conclusions should reflect that scope.

2. Sampling and data collection

Purposive screening followed by convenience or quota-based recruitment may be feasible, but the sampling approach and its limitations must be reported transparently. Determine the required sample size through an a priori power analysis or a justified PLS-SEM procedure that considers the most complex endogenous construct, expected effect size and statistical power. Do not insert a sample count until the survey has been completed and invalid responses removed.

3. Instrument development

Use a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), subject to pilot testing. The illustrative items below are starting points, not a validated instrument. Review them against established measures, obtain expert feedback, conduct a pilot, and document any wording changes. If the questionnaire is translated, use translation and independent back-translation. Obtain appropriate institutional approval and informed consent before collecting data.

Construct	Illustrative item	Suggested items
Green perceived value	Buying this product would provide meaningful environmental benefits relative to its cost.	3–4
Eco-brand credibility	I believe this brand's environmental claims are believable and supported by evidence.	3–4
Mobile shopping experience	The mobile shopping process makes it easy to find and evaluate green products.	3–4
Platform sustainability features	The platform provides clear tools and information for identifying sustainability-related product attributes.	3–4
Digital engagement	I actively read, compare, save, comment on or share information about green products online.	3–5
Online shopping intention	I intend to purchase environmentally responsible products through online channels in the near future.	3–4
Digital literacy	I can locate, compare and critically evaluate information presented on	3–4

	shopping websites and apps.	
Environmental knowledge	I understand how product choices and environmental claims relate to environmental impacts.	3–4

4. Data analysis procedure

Use a suitable statistical package for data screening and descriptive analysis, followed by SmartPLS or another justified SEM package for measurement and structural modelling.

Report missing-data handling, response exclusions, sample characteristics and checks for common-method concerns. For reflective constructs, assess indicator loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE) and discriminant validity, including HTMT where appropriate. For the structural model, report collinearity, path coefficients, bootstrapped confidence intervals, R^2 , f^2 and predictive relevance where relevant. Test mediation through bootstrapped indirect effects and moderation through interaction terms and simple-slope interpretation. Follow current PLS-SEM reporting guidance (Hair et al., 2022; Henseler et al., 2015).

Table 4. Structural Model and Hypothesis Testing

Hypothesis/path	β	SE	t-value	p-value	Interaction	Decision
H1: GP $\rightarrow$ DE	.24	.07	3.43	.001		Supported
H2: GP $\rightarrow$ IN	.18	.07	2.57	.010		Supported
H3: EB $\rightarrow$ DE	.16	.07	2.29	.022		Supported
H4: EB $\rightarrow$ IN	.12	.06	2.00	.046		Supported
H5: MS $\rightarrow$ DE	.21	.06	3.50	.001		Supported
H6: MS $\rightarrow$ IN	.09	.06	1.50	.139		Not supported
H7: PS $\rightarrow$ DE	-.08	.05	1.60	.110		Not supported
H8: PS $\rightarrow$ IN	-.19	.06	3.17	.002		Supported
H9: DE $\rightarrow$ IN	.39	.07	5.57	.001		Supported
DE $\times$ EK $\rightarrow$ IN	.08	.05	1.60	.110		Moderation not supported

Interpretation: In this hypothetical example, digital engagement has a positive association with purchase intention ($\beta=.39$, $p=.001$).

Green-product perception, environmental benefits and marketing stimuli are positively associated with digital engagement. Price sensitivity has a negative association with purchase intention ($\beta=-.19$, $p=.002$). Marketing stimuli and price sensitivity do not show statistically significant relationships with digital engagement in this example. Reporting note:

The coefficients, standard errors, test statistics and confidence intervals above are illustrative. They should be estimated using the chosen analysis method, such as PLS-SEM with bootstrapping. Report $\sqrt{R^2}$, $\sqrt{f^2}$, and collinearity statistics from the actual model output as well.

Table 5. Mediation Analysis

Indirect path	Indirect effect	Bootstrapped SE	95% CI	p-value	Illustrative conclusion
GP $\rightarrow$ DE $\rightarrow$ IN	.094	.031	[.040, .162]	.003	Supported
EB $\rightarrow$ DE $\rightarrow$ IN	.062	.027	[.014, .120]	.021	Supported
MS $\rightarrow$ DE $\rightarrow$ IN	.082	.029	[.030, .145]	.006	Supported
PS $\rightarrow$ DE $\rightarrow$ IN	-	.022	[-.082, .006]	.096	Not supported

Interpretation: In this illustrative example, digital engagement mediates the relationships between green-product perception, environmental benefits and marketing stimuli and purchase intention because their bootstrapped confidence intervals exclude zero. The indirect effect involving price sensitivity is not statistically significant because its confidence interval includes zero.

Hypothesis/path	β	SE	t-value	p-value	Interaction	Decision
H1: GP $\rightarrow$ DE	.24	.07	3.43	.001		Supported
H2: GP $\rightarrow$ IN	.18	.07	2.57	.010		Supported
H3: EB $\rightarrow$ DE	.16	.07	2.29	.022		Supported
H4: EB $\rightarrow$ IN	.12	.06	2.00	.046		Supported
H5: MS $\rightarrow$ DE	.21	.06	3.50	.001		Supported
H6: MS $\rightarrow$ IN	.09	.06	1.50	.139		Not supported
H7: PS $\rightarrow$ DE	-.08	.05	1.60	.110		Not supported
H8: PS $\rightarrow$ IN	-.19	.06	3.17	.002		Supported
H9: DE $\rightarrow$ IN	.39	.07	5.57	.001		Supported
DE $\times$ EK $\rightarrow$ IN	.08	.05	1.60	.110		Moderation not supported

Interpretation: The illustrative positive interaction between digital engagement and digital literacy ($\beta=.14$, $p=.005$) suggests that the relationship between digital engagement and purchase intention becomes stronger at higher levels of digital literacy. The interaction between digital engagement and environmental knowledge is not statistically significant ($p=.110$); therefore, moderation is not supported for that relationship in this example.

VI. DISCUSSION FRAMEWORK

The final discussion should follow the observed data, not the expected direction of the hypotheses. If green perceived value is associated with engagement and intention, the result would suggest that consumers respond to perceived environmental benefits when these benefits are meaningful and credible. If eco-brand credibility is important, the

findings would be consistent with the argument that verifiable environmental communication reduces uncertainty. A relationship between mobile shopping experience and engagement would indicate that interface usability may support consumers' continued interaction with green product information.

The moderation analysis should be interpreted independently for digital literacy and environmental knowledge. A stronger digital-literacy interaction would suggest that general information-navigation skills matter in the engagement–intention process; a stronger environmental-knowledge interaction would suggest that sustainability-specific understanding is especially relevant. Neither conclusion should be drawn unless the interaction coefficients and confidence intervals support it.

Practical Implications

E-commerce businesses should make sustainability information specific, accessible and verifiable rather than relying on broad green slogans. Brands can support credibility by linking claims to recognised standards, explaining what an environmental label means and avoiding unsupported absolute claims. Platforms can improve product filters, comparison functions and mobile navigation so consumers can locate and evaluate information without excessive effort. Engagement features should encourage meaningful evaluation—such as product comparisons and informed questions—rather than treating clicks or shares as proof of purchase readiness.

Consumer education is also relevant. Digital-literacy initiatives can help shoppers navigate platforms and assess online information, while environmental education can help them interpret sustainability labels and product claims. For public agencies and consumer-protection bodies, clear guidance on environmental claims and accessible complaint channels can help reduce confusion. These are theory-informed recommendations; the empirical results should determine which priorities receive the greatest emphasis.

Limitations and Future Research

A cross-sectional survey can identify associations but cannot establish temporal causality. Convenience or quota sampling may limit representativeness, and self-reported engagement and intention may differ from observed purchases. Future research could use longitudinal designs, compare product categories or regions, test actual purchasing behaviour, and investigate perceived greenwashing, price sensitivity, environmental concern or perceived risk as additional variables. Researchers should also consider whether measurement items operate equivalently across languages and demographic groups.

VII. CONCLUSION

This paper proposes an integrated framework for studying sustainable purchase intention in Indian e-commerce. It connects green perceived value, eco-brand credibility, mobile shopping experience and platform sustainability

features with digital engagement and online shopping intention, while considering digital literacy and environmental knowledge as potential boundary conditions. The proposed model can help distinguish exposure to green content from the more active engagement that may accompany purchase consideration. The present document is a research-ready draft and analysis framework, not a report of completed empirical findings. Valid results and conclusions should be added only after the original data are collected and analysed.

REFERENCES

1. Chen, Y.-S., & Chang, C.-H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, 50(3), 502–520. <https://doi.org/10.1108/00251741211216250>
2. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
3. Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2022). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer. <https://doi.org/10.1007/978-3-030-80519-7>
4. 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>
5. Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, 28(2), 149–165. <https://doi.org/10.1016/j.intmar.2013.12.002>
6. Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
7. Nguyen, K. Q. T. (2026). Green consumer behavior in e-commerce: The mediating role of digital engagement and the moderating effects of literacy and environmental knowledge. *Heliyon*, 12, e45511. <https://doi.org/10.1016/j.heliyon.2026.e45511>
8. Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. Springer. <https://doi.org/10.1007/978-1-4612-4964-1>