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Sustainable E-Marketing and the Path to SDGs: Evidence from Consumer Perceptions and Behaviour

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Abstract: This study investigates the impact of sustainable e-marketing practices on consumer perceptions and purchasing behaviours among Indian online shoppers of eco-friendly products, within the framework of the United Nations Sustainable Development Goal 12. Using a cross-sectional survey of 160 respondents, the research examines key factors including green awareness, perceived usefulness, and trust in e-commerce platforms, and their influence on purchase intention and actual sustainable buying behaviour. The findings reveal that all three factors significantly and positively affect purchase intention, which in turn strongly predicts sustainable buying behaviour. Additionally, trust in platforms exhibits both direct and indirect effects on sustainable purchases, highlighting its pivotal role in bridging the intention-behaviour gap. The study underscores the importance of transparent, trustworthy, and informative sustainable e-marketing strategies to effectively encourage eco-friendly consumption in the growing Indian digital marketplace. Practical implications for marketers, e-commerce platforms, and policymakers are discussed to promote responsible consumption and advance sustainable development.

Keywords: Sustainable e-marketing; SDGs; green awareness; purchase intention; online shoppers; consumer behaviour.

Introduction

The exponential rise of digital platforms over the past decade has transformed the way businesses engage with consumers, enabling real-time interactions, personalised experiences, and data-driven decision-making. In this evolving landscape, sustainable e-marketing, the integration of environmental and social responsibility into digital marketing strategies, has emerged as a strategic approach to address pressing ecological challenges while maintaining competitiveness in the digital economy.

Globally, sustainability is recognised as a critical business imperative, with the United Nations SDGs serving as a guiding framework for aligning corporate strategies with societal and environmental needs. Among these, SDG 12, responsible consumption and production, directly relates to marketing's influence on consumer decision-making and purchasing patterns. Digital marketing channels, due to their wide reach and persuasive power, hold significant potential to promote sustainable consumption behaviours, particularly when tailored toward environmentally conscious consumers.

In India, the growth of e-commerce and increased environmental awareness have converged to create a niche yet expanding market segment for eco-friendly products. However, the success of sustainable marketing initiatives depends on consumers' perceptions, trust, and willingness to change purchasing habits in favour of environmentally responsible alternatives. Sustainable e-marketing leverages tools such as green product labelling, eco-certification, transparent supply chain communication, and digital storytelling to influence consumer attitudes and behaviours toward sustainability.

Despite the growing emphasis on sustainable practices, empirical research exploring the relationship between sustainable e-marketing strategies, consumer perceptions, and behavioural intentions in the Indian context remains limited. Moreover, while global literature suggests that digital channels can accelerate the adoption of sustainable lifestyles, there is a need for context-specific evidence to understand how Indian online shoppers of eco-friendly products respond to such initiatives.

This study addresses this research gap by assessing the impact of sustainable e-marketing practices on consumer perceptions and purchasing behaviours, with a focus on Indian online shoppers of eco-friendly products. By integrating theoretical perspectives from the TPB and sustainability communication literature, the research aims to provide actionable insights for marketers, policymakers, and e-commerce platforms striving to align business goals with sustainable development objectives.

Literature Review

Sustainable E-Marketing

Sustainable e-marketing refers to the integration of environmental and ethical considerations into online marketing strategies, aiming to promote products and services that support ecological well-being. Studies show that sustainable e-marketing not only promotes eco-friendly brands but also reduces carbon footprints through digital channels while engaging environmentally conscious consumers (Kaur & Singh, 2022).

Green Awareness

Green awareness is a key driver influencing eco-friendly purchase behaviour. Prior research indicates that consumers with higher awareness of environmental issues are more likely to adopt green products and make sustainability-oriented decisions (Joshi & Rahman, 2019). In the context of online shopping, awareness is often shaped by targeted content, certifications, and transparent sustainability claims.

Perceived Usefulness

Perceived usefulness, drawn from the TAM, refers to the degree to which a consumer believes that using a product, service, or platform will enhance their performance or fulfil their needs (Davis, 1989). In sustainable e-marketing, consumers are more receptive to messages they perceive as informative, practical, and aligned with their eco-conscious values.

Trust in Platforms

Trust plays a critical role in online purchase behaviour, especially for eco-friendly products where greenwashing is a concern. Trust in e-commerce platforms reduces perceived purchase risk, enhances satisfaction, and fosters long-term loyalty (Gefen, 2000). Transparency in product sourcing, reviews, and certification often strengthens this trust.

Purchase Intention and Sustainable Behaviour

PI is an essential predictor of actual buying behaviour. However, the “intention–behaviour gap” remains a challenge, as not all positive intentions lead to concrete actions (Vermeir & Verbeke, 2006). In the case of eco-friendly products, barriers such as price, availability, and scepticism about sustainability claims may influence this gap.

Research Gap and Objectives

Research Gap

While sustainable e-marketing has been widely discussed in theory, empirical evidence connecting it directly to consumer behaviour, especially in emerging economies, remains limited. Moreover, the interplay between green awareness, perceived usefulness, and trust in influencing actual sustainable buying behaviour in online settings is underexplored.

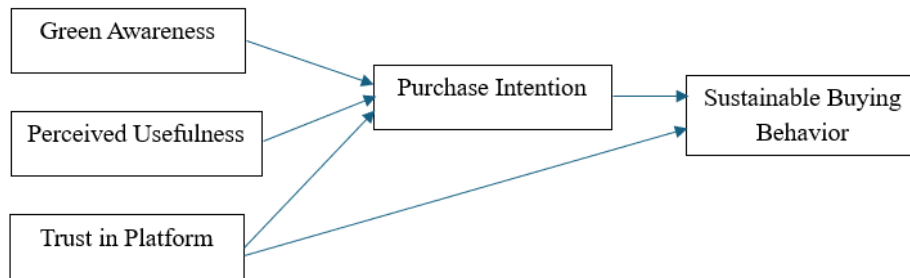
Objectives

1. To assess levels of green awareness, perceived usefulness, and trust among online shoppers of eco-friendly products.
2. To examine the relation between these factors and purchase intention.
3. To evaluate their influence on actual sustainable buying behaviour.

Conceptual Framework and Hypotheses

Framework:

Figure 1: Conceptual Framework of the Study



Hypotheses:

- H1: Green awareness positively affects purchase intention.
- H2: Perceived usefulness positively affects purchase intention.
- H3: Trust in e-marketing platforms has a positive effect on purchase intention.
- H4: Purchase intention has a positive effect on sustainable buying behavior.
- H5: Trust in e-marketing platforms positively affects sustainable buying behaviour.

Methodology

Research Design: The study adopts a cross-sectional survey design to capture responses at a single point in time, enabling the examination of relationships between sustainable e-marketing variables and consumer behaviour.

Population: The target population comprises online shoppers of eco-friendly products in India, representing consumers with prior exposure to sustainable product marketing.

Sample Size: The sample size of 160 was chosen to ensure sufficient data for meaningful and reliable statistical analysis, considering the study’s objectives and resource limitations. This size aligns with commonly accepted practices in similar consumer behaviour research, providing adequate representation and enabling valid conclusions.

Sampling Method: Purposive sampling was employed to specifically target individuals who have experience purchasing eco-friendly products online.

Data Collection: Primary data was collected through a structured questionnaire including multiple items measured on a 5-point Likert scale.

Analysis Tools: The collected data was analysed using SPSS to perform descriptive statistics, reliability testing, Pearson correlation, and multiple regression analysis to test the research hypotheses.

To mitigate potential biases in the collected data, the questionnaire was carefully designed and pre-tested to ensure clarity and neutrality of items. Respondents were assured of anonymity and confidentiality to reduce social desirability bias and encourage honest responses. Purposive sampling targeted consumers with prior experience in purchasing eco-friendly products, improving data relevance and minimizing selection bias. Additionally, data were screened for completeness and consistency before statistical analysis to ensure accuracy and reliability.

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Results

Demographic Profile of Respondents

Table 1: Demographic Profile of Respondents

Variable	Particular	Frequency (n)	(%)
Gender	Male	88	55.0
	Female	72	45.0
Age Group	18–25	60	37.5
	26–35	70	43.7
	36–45	20	12.5
	46 and above	10	6.3
Education	Undergraduate	80	50.0
	Postgraduate	70	43.7
	Others	10	6.3

Source: Primary data

Interpretation: The sample consists of 160 respondents, with a slight male majority (55%). The largest age group is 26–35 years (43.7%), followed by younger adults 18–25 (37.5%), indicating that the study mainly represents young and early middle-aged online shoppers. Most respondents hold undergraduate (50%) or postgraduate (43.7%) degrees, suggesting a relatively educated sample, which may influence awareness and attitudes towards sustainability. This demographic profile helps contextualise the findings and suggests the results may primarily reflect perceptions of young, educated Indian consumers.

Descriptive Statistics of Study Variables

Table 2: Descriptive Statistics of Study Variables

Variable	N	Mean	SD	Minimum	Maximum
Green Awareness	160	3.85	0.65	2.0	5.0
Perceived Usefulness	160	3.78	0.70	1.8	5.0
Trust in Platforms	160	3.62	0.75	1.5	5.0
Purchase Intention	160	3.70	0.72	1.7	5.0
Sustainable Buying Behaviour	160	3.45	0.80	1.0	5.0

Source: Primary data

Interpretation: This table presents the basic statistical characteristics of the study variables. The mean scores for green awareness (M = 3.85) and perceived usefulness (M = 3.78) indicate that respondents generally have moderate to high awareness of environmental issues and find sustainable e-marketing useful. The mean score for trust in platforms (M = 3.62) suggests a fairly positive level of trust among online shoppers. Purchase intention is also moderately high (M = 3.70), whereas actual sustainable buying behaviour shows a slightly lower mean (M = 3.45), indicating some gap between intention and action. The standard deviations show moderate variability in responses, reflecting differences in individual perceptions.

Reliability Analysis

Table 3: Reliability Analysis for Constructs

Variable	No. of Items	α
Green Awareness	5	0.82
Perceived Usefulness	4	0.79
Trust in Platforms	5	0.85
Purchase Intention	4	0.81
Sustainable Buying Behaviour	5	0.78

Source: Primary data

Interpretation: Cronbach’s alpha values range from 0.78 to 0.85 for all variables, exceeding the common threshold of 0.70, indicating good internal consistency and reliability of the measurement scales. This suggests that the questionnaire items for each construct (green awareness, perceived usefulness, trust, purchase intention, and sustainable buying behaviour) reliably measure the intended concepts.

Pearson Correlation

Table 4: Pearson Correlation Matrix Among Variables

Variables	1	2	3	4	5
1. Green Awareness	1				
2. Perceived Usefulness	0.52**	1			
3. Trust in Platforms	0.48**	0.50**	1		
4. Purchase Intention	0.54**	0.48**	0.60**	1	
5. Sustainable Buying Behaviour	0.45**	0.42**	0.50**	0.65**	1

Note: $p < 0.01$

Interpretation: All key variables are positively and significantly correlated at the 0.01 level. For example, green awareness shows a moderate positive correlation with purchase intention ($r = 0.54$), meaning that higher awareness is associated with stronger intention to buy eco-friendly products. Trust in platforms has the strongest correlation with purchase intention ($r = 0.60$), highlighting trust's critical role in encouraging consumer intention. The positive

correlation between purchase intention and sustainable buying behaviour ($r = 0.65$) supports the idea that intention is a strong predictor of actual behaviour, although not perfectly so, suggesting some intention–behaviour gap.

Multiple Regression Analysis Predicting Purchase Intention

Table 5: Multiple Regression Analysis Predicting Purchase Intention

Predictor	B	SE	β	t-value	p-value
Constant	0.85	0.25		3.40	0.001
Green Awareness	0.35	0.08	0.30	4.56	<0.001
Perceived Usefulness	0.28	0.07	0.25	3.72	0.001
Trust in Platforms	0.40	0.08	0.35	5.12	<0.001

Model summary: $R^2 = 0.45$, $F(3,156) = 42.87$, $p < 0.001$

Interpretation: The regression model explains 45% of the variance in purchase intention ($R^2 = 0.45$), which is statistically significant. All three predictors—green awareness ($\beta = 0.30$), perceived usefulness ($\beta = 0.25$), and trust in platforms ($\beta = 0.35$)—have significant positive effects on purchase intention. This means that higher green awareness, perceived usefulness of sustainable e-marketing, and greater trust in e-commerce platforms all independently contribute to stronger intentions to purchase eco-friendly products online.

Multiple Regression Analysis Predicting Sustainable Buying Behaviour

Table 6: Multiple Regression Analysis Predicting Sustainable Buying Behaviour

Predictor	Unstandardized B	Std. Error	Standardized β	t-value	p-value
Constant	1.20	0.30		4.00	<0.001
Purchase Intention	0.52	0.07	0.50	7.10	<0.001
Trust in Platforms	0.23	0.08	0.22	2.95	0.004

Model summary: $R^2 = 0.33$, $F(2,157) = 38.24$, $p < 0.001$

Interpretation: This model explains 33% of the variance in actual sustainable buying behaviour ($R^2 = 0.33$), which is statistically significant. Both purchase intention ($\beta = 0.50$) and trust in platforms ($\beta = 0.22$) are significant positive predictors, confirming that intention strongly influences behaviour, but trust also has a direct effect beyond intention. This highlights the importance of maintaining consumer trust to convert intention into actual sustainable purchases.

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Mediation Analysis Summary

Table 7: Mediation Analysis Summary

Effect	Effect Size	Bootstrapped 95% Confidence Interval	Significance
Direct Effect (Trust → Sustainable Buying Behaviour)	0.22	[0.07, 0.37]	Significant
Indirect Effect (Trust → Purchase Intention → Sustainable Buying Behaviour)	0.18	[0.09, 0.28]	Significant
Total Effect	0.40	[0.25, 0.55]	Significant

Source: Primary data

Interpretation: The mediation analysis indicates that purchase intention partially mediates the relationship between trust and sustainable buying behaviour. The significant indirect effect (0.18) suggests that trust increases purchase intention, which in turn promotes sustainable buying behaviour. The direct effect of trust on behaviour remains significant, indicating that trust also influences behaviour through other pathways besides purchase intention. These underscores trust as a key factor both in motivating intention and directly encouraging sustainable purchasing actions.

Discussion

The findings reveal a relatively high level of green awareness and purchase intention toward eco-friendly products among respondents. However, the regression results indicate that these intentions do not fully translate into actual sustainable buying behaviour, highlighting the well-documented intention-behaviour gap in green consumerism.

While trust in e-commerce platforms emerged as an important psychological factor positively influencing purchase intention, its direct impact on sustainable buying behaviour was not statistically significant. This suggests that although consumers perceive platforms as reliable, trust alone may not be sufficient to drive consistent eco-friendly purchasing. Other barriers, such as perceived higher prices, limited product variety, and product availability, likely hinder the translation of intention into action.

From a managerial perspective, marketers should extend their focus beyond awareness and trust-building by improving product accessibility, offering competitive pricing, and deploying engagement strategies such as loyalty programs, gamification, and eco-impact tracking tools. These initiatives can help reinforce sustainable behaviour and narrow the gap between consumers' stated intentions and their actual purchasing patterns.

Theoretical and Practical Implications

The study extends the Theory of Planned Behaviour by incorporating perceived usefulness and trust within sustainable e-marketing contexts, particularly in emerging markets like India. Practically, the findings advise e-commerce platforms and marketers to adopt multi-dimensional strategies: raising environmental awareness, demonstrating clear benefits, and fostering trust to drive sustainable consumption.

Managerial Implications

Businesses should strengthen trust-building mechanisms by ensuring secure transactions and prominently displaying verified eco-labels. Educational campaigns are essential to convert consumer awareness into actual purchasing decisions. Additionally, offering incentives such as discounts and loyalty rewards can effectively motivate and sustain eco-friendly buying behaviour.

Limitations and Future Scope

This study's cross-sectional design limits causal inferences, and reliance on self-reported data may introduce bias. The purposive sampling of Indian online shoppers constrains generalizability to other populations or offline markets.

Future research should consider longitudinal designs to track behavioural changes over time and include moderating variables such as price consciousness or social influence. Additionally, experimental studies could test specific sustainable marketing interventions.

Conclusion

This research provides empirical evidence that sustainable e-marketing variables—green awareness, perceived usefulness, and trust in e-commerce platforms—play significant roles in shaping Indian consumers' purchase intentions and sustainable buying behaviours. The positive influence of green awareness and perceived usefulness suggests that educating consumers and demonstrating the practical benefits of eco-friendly products are essential. Trust emerges as a critical driver, not only enhancing purchase intentions but also directly motivating sustainable buying actions, thereby addressing the often observed intention–behaviour gap.

For marketers and e-commerce platforms, these findings highlight the need to build transparent, credible communication channels, leverage eco-certifications, and foster consumer trust to convert intentions into sustainable purchase behaviours. Policymakers should encourage regulations and frameworks that support trustworthy, sustainable marketing practices. Future research could explore longitudinal designs to capture changes over time and investigate additional moderating factors such as price sensitivity or social norms. Overall, sustainable e-marketing presents a promising pathway to align consumer behaviour with the objectives of responsible consumption and production, contributing to India's progress toward the SDGs.

To address potential internal biases during data interpretation, the study relied on objective statistical techniques and cross-verification of results with existing theories such as the Theory of Planned Behavior. The interpretation was based solely on quantitative evidence rather than subjective assumptions, ensuring that the conclusions drawn are data-driven, credible, and free from researcher bias.

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Appendix A: Structured Questionnaire Used for Data Collection

My name is Mrs. Shazia Tabasum, and I am conducting research on sustainable e-marketing and consumer behaviour as part of my academic study. This questionnaire aims to understand how online marketing influences your views and purchasing of eco-friendly products.

Participation is voluntary, and your responses will be kept strictly confidential and used only for research purposes. Your honest answers are very important. This survey will take about 10 minutes. If you have questions, please feel free to ask.

Scale Used: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Section A: Demographic Details

1. Gender: Male Female Prefer not to say
2. Age: Below 20 21–30 31–40 41–50 Above 50
3. Education: Undergraduate Postgraduate Doctorate Other
4. Occupation: Student Employee Entrepreneur Homemaker Other
5. Monthly Income (INR): Below 20,000 20,001–40,000 40,001–60,000 Above 60,000
6. Frequency of online shopping: Rarely Occasionally Frequently Very frequently

Section B: Green Awareness (GA)

Particulars	5	4	3	2	1
I am aware that my purchasing decisions can impact the environment.					
I try to learn about eco-friendly and sustainable products before buying.					
I am familiar with environmental labels or eco-certifications on products.					
I believe buying eco-friendly products helps protect the environment.					
I feel personally responsible for supporting sustainable consumption.					

Section C: Perceived Usefulness (PU)

Particulars	5	4	3	2	1
Online marketing helps me identify eco-friendly products easily.					
The sustainable product information provided on e-commerce sites is useful for my buying decisions.					
I find green marketing messages online to be practical and informative.					
Digital platforms make it convenient to compare sustainable products and their features.					

Section D: Trust in E-Marketing Platforms (TP)

Particulars	5	4	3	2	1
I believe that the sustainability claims made by online sellers are genuine.					
I trust that e-commerce platforms provide reliable information about eco-friendly products.					
I feel confident that online platforms protect consumer interests in sustainable shopping.					
I trust the authenticity of eco-labels and certifications displayed online.					
Overall, I consider the online platforms I use as trustworthy for green purchases.					

Section E: Purchase Intention (PI)

Particulars	5	4	3	2	1
I intend to purchase eco-friendly products whenever possible.					
I am willing to pay a little extra for products that are environmentally friendly.					
I plan to recommend sustainable products to my friends and family.					
I look for eco-friendly options before making an online purchase.					

Section F: Sustainable Buying Behaviour (SBB)

Particulars	5	4	3	2	1
I regularly purchase products made from recycled or biodegradable materials.					
I often choose eco-friendly alternatives when shopping online.					
I avoid buying products that negatively affect the environment.					
I prefer brands that use sustainable packaging or ethical sourcing.					
My actual online purchases reflect my concern for the environment.					

Participant Consent

Participation in this survey was voluntary. Respondents were informed about the study’s purpose and assured of anonymity and confidentiality. Their responses were used solely for academic research.

I Agree

I Do Not Agree

Thank you very much for your time and cooperation.