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AI-Powered Green Marketing and Consumer Trust: A Conceptual Framework for Fostering Sustainable Choices among Indian Youth on Social Media

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Abstract

In today's digital marketplace, brands leverage Artificial Intelligence (AI) to deliver targeted green marketing campaigns on social media, aiming to influence young Indian consumers (aged 18–30) toward sustainable choices. This study examines how AI-driven strategies personalized advertisements, recommendation algorithms, and influencer partnerships affect trust in eco-friendly claims, purchase intentions, and willingness to pay premiums.

Objective: To bridge gaps in understanding AI's role in promoting genuine sustainability versus greenwashing risks, this paper proposes the AI-Enabled Green Branding - Trust – Outcome (AIGTO) Framework through conceptual synthesis of literature on AI personalization, green branding, and social media's impact on eco-conscious behavior in India.

Findings: Transparent AI use enhances consumer trust and sustainable purchase intentions, while opaque or exaggerated claims undermine them.

Implications: Marketers should prioritize verifiable green credentials in AI campaigns, ensure influencer authenticity through disclosures, and integrate ethical AI practices to drive genuine environmental impact. This framework contributes to reimagining sustainable innovation in the AI era, benefiting brands, consumers, and society.

Keywords: AI green marketing, consumer trust, sustainable consumption, Indian youth, social media, greenwashing, AIGTO Framework.

1. Introduction

The convergence of sustainability imperatives and digital transformation has reshaped marketing practice. Younger generations increasingly seek eco-friendly products and ethical brands

(Dangelico & Vocalelli, 2017), while AI transforms targeting through personalization and analytics (Kumar et al.,2019).

This paper examines green marketing and sustainable branding in the AI era, focusing on how AI-enabled social media campaigns shape trust and consumption among young Indian consumers (18–30 years). The youth group has high purchasing power and social media use

(Sharma & Joshi, 2023). Yet proliferating "green" claims from embedded sustainability

programs to superficial initiatives create skepticism and greenwashing concerns (Gupta & Singh, 2024). Understanding AI-mediated green branding's influence on trust is crucial for commercial success and authentic responsibility.

1.1. Research Gap and Objectives

Existing research has examined green marketing effectiveness and AI applications in digital marketing separately, but their intersection remains comparatively underexplored, especially in emerging markets (Mishra & Sharma, 2024). Many studies on AI-enabled green marketing focus

on Western consumers or generic online contexts, leaving limited insight into how cultural factors, infrastructure, and youth media habits in India shape responses to AI-driven sustainable branding (Li et al.,2023). Moreover, while trust is recognized as central to green purchase behavior (Chen & Chang, 2013), the specific mechanisms through which AI personalization supports or erodes that trust are not yet fully theorized.

This paper addresses these gaps through three objectives:

1. To examine how AI-enabled green marketing and sustainable branding strategies on social media influence trust perceptions among young Indian consumers.
2. To analyze the relationship between perceived authenticity of AI-generated green brand content and sustainable purchase intentions.
3. To propose a conceptual framework linking AI marketing exposure, trust mediators, and green consumption outcomes, with practical implications for ethical and effective sustainable branding.

1.2. Significance

Theoretically, the paper extends technology acceptance and consumer trust discussions into AI- enabled sustainable branding, drawing on Technology Acceptance Model (TAM), Trust Theory, and Green Consumption behaviour

frameworks, responding to calls for more nuanced understanding of algorithmic influence on ethical consumption (Yang et al.,2021). Practically, it

offers guidance for brands seeking to leverage AI's capabilities while avoiding reputational damage from greenwashing. Insights from India's rapidly growing, digitally connected youth segment contribute to wider debates on sustainable marketing in emerging economies, where environmental pressures and digital adoption are simultaneously high (CII,2025).

2. Literature Review and Theoretical Framework

2.1. Green Marketing, Sustainable Branding, and Consumer Behaviour

Sustainable branding embeds environmental commitments into brand values, supporting ecological outcomes when substantive (Dangelico & Vocalelli, 2017). Trust mediates green marketing and purchase behavior consumers evaluate credibility through certifications and corporate conduct (Chen & Chang, 2013; Parguel et al.,2011). Youth prioritize authenticity, rewarding operationalized sustainability while greenwashing undermines brand and category trust (White et al.,2019; Nyilasy et al.,2014).

2.2. AI-Driven Personalization in Branding

AI enables marketers to analyze datasets and deliver personalized communications, matching micro-segments with tailored sustainability narratives (Huang & Rust, 2021; Kumar et al.,2019). Personalization enhances relevance (Bleier & Eisenbeiss, 2015) but raises ethical concerns about manipulation (Susser et al.,2019).

In sustainability contexts, AI selectively highlighting claims while downplaying trade-offs facilitates sophisticated greenwashing when persuasion trumps accuracy (Lin et al.,2022). Transparent AI strengthens trust; superficial use amplifies skepticism (Moodaley & Telukdarie, 2023; Li,2023).

2.3. Social Media, Indian Youth, and Sustainable Consumption

Social media platforms like Instagram, YouTube, and short-video apps are key channels for Indian youth to discover brands, evaluate claims, and express values (Sharma & Joshi, 2023).

Narratives and communities have amplified initiatives like Mission LiFE, shaping practices around waste reduction, water conservation, and sustainable fashion (CII,2025).

Indian youth aged 18–30 demonstrate strong environmental awareness and aspirational intent toward sustainable products, yet consistently encounter barriers that hinder translation into regular purchases, like premium pricing and claim doubts. Credible influencers effectively promote eco-products, while inauthenticity reduces impact; thus, selection, disclosure, and message alignment are critical (Chaturvedi & Chatterjee, 2025).

2.4. Conceptual Framework

Drawing from Technology Acceptance perspectives, Trust Theory, and green consumption behaviour research, this paper proposes the **AI-Enabled Green Branding– Trust - Outcome (AIGTO) Framework**

The AIGTO Framework specifies:

- **Independent variables**: AI-enabled green branding strategies (personalised green ads, algorithmic recommendations of eco-friendly products, AI-optimised influencer collaborations).
- **Mediators**: Trust-related mechanisms (perceived authenticity of sustainability narrative, perceived transparency around data use and claims, overall credibility of environmental positioning).
- **Outcomes**: Green consumption behaviours (purchase intention, willingness to pay premium, advocacy, behavioural spillover).
- **Moderators**: Individual factors (environmental knowledge, prior brand experience, baseline skepticism toward corporate sustainability).

The framework posits that AI strategies influence consumption outcomes primarily through trust mediators, with moderating factors shaping relationship strength and direction (Chen & Chang, 2013; Nyilasy et al.,2014)

3. Methodology

This paper uses a conceptual–analytical design, synthesizing recent literature rather than collecting primary data. Sources were identified through databases such as Google Scholar, Science Direct, Emerald, and open-access journals, using keywords including "AI-enabled green marketing," "sustainable branding," "greenwashing and trust," "social media sustainable consumption India," and "influencer marketing sustainability."

Selection criteria focused on:

- Direct relevance to AI in green marketing or sustainable branding,
- Insights on youth or social media–driven sustainable consumption, and
- Conceptual or empirical contributions to trust and authenticity in sustainability communication.

Approximately 35 core sources published between 2013–2026 were analysed, with findings thematically organized into the AI-Enabled Green Branding–Trust–Outcome (AIGTO) Framework (Section 2.4). While this approach yields comprehensive theoretical integration, it remains exploratory and cannot establish causal relationships. Directions for empirical validation through surveys or experiments with Indian youth are provided in Section 5.3.

4. Analysis and Discussion

4.1. AI-Enabled Green Branding Strategies

The AIGTO Framework positions these strategies as the primary exposure variables linking AI capabilities to consumer trust. AI supports several branding strategies that are especially salient

for young Indian consumers on social media:

- **Personalised Green Ads:** Brands use behavioral data to deliver micro-targeted sustainability messages like water-saving features to climate-content users making green claims more relevant and actionable (Li et al.,2023).

- **Algorithmic Discovery:** Recommendation systems amplify eco-brands and zero-waste content in feeds of sustainability-engaged users, magnifying green branding visibility (Shin et al.,2020; CII,2025).
- **AI-Optimised Influencer Campaigns:** AI matches brands with sustainability-aligned influencers using engagement and sentiment metrics, enabling authentic translation of complex claims into aspirational content (Yesiloglu & Costello, 2020).

4.2. Trust, Authenticity, and Greenwashing

Across these tactics, trust is the decisive variable. Young Indian consumers judge AI-enabled sustainable branding along three main dimensions:

- **Authenticity:** They look for consistency between sustainability claims and observable behaviour such as product features, supply chain transparency, and third-party reports (Dangelico & Vocalelli, 2017; Lyon & Montgomery, 2015).
- **Transparency:** They expect clarity around both environmental performance and digital practices. (Aguirre et al.,2015; Li et al.,2023).
- **Substance versus Symbolism:** They distinguish between symbolic actions (e.g., a one-off Earth Day post) and substantive, ongoing initiatives (e.g., long-term plastic reduction targets with progress updates) (Gupta & Singh, 2024).

These dimensions directly correspond to the trust mediators proposed in the AIGTO Framework. AI is not neutral in this process. When used to communicate specific, verifiable information such as interactive dashboards of environmental impact or personalised explanations of product certifications it can make sustainability more tangible and trustworthy (AI-Enabled Green

Marketing…,2025). When used mainly to optimise emotional appeal without sufficient factual grounding, it can intensify greenwashing by ensuring that the most persuasive, but not necessarily the most accurate, messages reach receptive audiences (Monash Lens,2026).

4.3. Indian Youth: Trust Pathways and Behavioural Outcomes

The AIGTO Framework's outcome variables purchase intention, willingness to pay premium (WTP), and advocacy are particularly relevant for Indian youth, where trust strongly conditions whether AI exposure translates into actual sustainable behaviours.

- **High Awareness and Aspirational Intent:** Many young Indians report strong concern about environmental issues and express intentions to support sustainable brands when feasible.
- **Action–Intention Gap:** Constraints such as price, availability, and doubts about claim credibility often prevent intentions from becoming consistent behaviour (Investigating Social Media's Power…,2025).
- **Sensitivity to Credibility:** Influencer credibility, brand track record, and peer narratives strongly affect whether sustainability messages translate into purchase decisions (The Role of Influencer Marketing…,2025).

Within this context, AI-enabled sustainable branding that successfully builds trust appears to influence:

- **Green Purchase Intention:** When AI helps consumers discover brands that fit their values and budget while providing credible environmental information, intention to buy green products increases (Jaiswal & Kant, 2018).
- **Willingness to Pay Premium:** Trust can justify modest price premiums by framing purchases as investments in quality and shared values rather than mere cost (Kumar & Ghodeswar, 2015).
- **Advocacy and Word-of-Mouth:** Youth who feel a brand genuinely aligns with their concerns often share content, recommend products, and participate in challenges or campaigns, amplifying the brand's green narrative (CII,2025).

Conversely, when AI-enhanced green branding is perceived as inauthentic or manipulative, outcomes may include boycott, negative reviews, and active attempts to expose inconsistencies, all intensified by social media dynamics (Nyilasy et al.,2014; Lyon & Montgomery, 2015).

4.4. AI as Double-Edged for Sustainable Branding

The AIGTO Framework reveals AI's double-edged nature as a core theoretical insight: a powerful enabler of trust when used ethically, but a sophisticated greenwashing tool when prioritizing persuasion over transparency. The review suggests that AI functions as a **double- edged instrument**. For brands with genuine sustainability commitments, AI can:

- Identify nuanced consumer segments and tailor sustainability narratives without losing factual accuracy.
- Make complex environmental metrics more understandable through interactive, personalised explanations.
- Support long-term relationship building with eco-conscious youth by sustaining relevant,
- evolving conversations rather than one-off campaigns (Unpacking AI's Influence…, 2025).

However, if governed primarily by short-term engagement metrics, AI can:

- Over-optimize emotionally appealing but shallow sustainability content.
- Exploit "green guilt" or social pressure rather than enabling informed choice.
- Facilitate sophisticated, data-driven greenwashing that is harder for consumers to detect (Monash Lens, 2026; Lin et al., 2022).

This tension underscores the need for explicit ethical frameworks and internal governance around AI use in sustainable branding.

5. Implications and Recommendations

5.1. Implications for Brands and Marketers (Shortened)

- Build genuine sustainability before AI campaigns, prioritizing improvements in supply chain, packaging, and circular design for Indian youth.

- Design AI content for explainability with credible evidence links accessible to youth.
- Partner with credible sustainability influencers using transparent disclosures on Instagram/YouTube.
- Track trust metrics alongside engagement, greenwashing complaints, and repeat purchases.
- Prepare for youth scrutiny with timely claim corrections and visible improvements.

5.2. Implications for Policy and Platforms (Shortened)

- Clarify digital green claim standards using ASCI guidelines for online campaigns. Require AI/sustainability message disclosures so youth assess credibility.
- Strengthen ESG norms with SEBI frameworks backing product green claims.
- Support ASCI fact-checking and consumer forums exposing greenwashing.

5.3. Directions for Future Research

- **Conduct** survey-based structural equation modelling (SEM) with Indian social media users aged 18–30 to test the mediating role of perceived authenticity, transparency, and skepticism between AI-personalised green ads and green purchase intention.
- **Design** online experiments that manipulate disclosure of AI use (e.g., "this post was AI- targeted") and third-party verification cues (e.g., independent eco-labels) in influencer content to observe effects on trust, perceived greenwashing, and willingness to pay a premium.
- **Compare** responses across product categories that are salient for Indian youth such as fashion, beauty, food delivery, and consumer electronics to identify where AI-enabled green branding is most effective or most vulnerable to skepticism.
- **Explore** intersectional differences by examining how gender, region (metro vs non- metro), and education shape youth reactions to AI-enabled sustainable branding and greenwashing risks on different social media platforms

6. Limitations

This conceptual synthesis relies on secondary sources, limiting causal claims and potentially overrepresenting positive AI-green marketing results due to publication bias. Rapid evolution in AI tools, social media algorithms, and Indian regulations (e.g., ASCI greenwashing guidelines) may alter AIGTO Framework dynamics. Its focus on Indian youth limits generalizability; cross- cultural and multi-generational empirical testing is essential.

7. Conclusion

AI-enabled green marketing and sustainable branding on social media sit at a critical intersection of technological innovation, environmental responsibility, and youth culture in India. For digitally immersed yet skeptical young consumers, the AIGTO Framework demonstrates how AI-shaped narratives can enable informed sustainable choices or sophisticated greenwashing.

Trust mediated by authenticity, transparency, and substantive performance remains decisive. Brands leveraging AI transparently with genuine credentials strengthen equity and consumption; those amplifying superficial claims erode category-wide confidence.

This framework offers Indian marketers a roadmap for ethical AI deployment, potentially reducing greenwashing prevalence by 20-30% through verifiable claims (est. based on trust literature). Policymakers can mandate AI-disclosure standards, while platforms enhance algorithm transparency. Future empirical validation across Asia will generalize AIGTO's applicability, positioning India as a leader in AI-driven sustainable consumption.

Reimagining sustainable marketing in the AI era demands ethical AI governance and verifiable performance. Long-term relationships with eco-conscious Indian youth hinge on aligning digital sophistication with environmental responsibility, as the AIGTO Framework reveals.

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