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SUSTAINABLE TOURISM IN THE DIGITAL ERA: EVALUATING THE EFFECTIVENESS OF GREEN MARKETING INITIATIVES ON CONSUMER BEHAVIOUR

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Abstract

The growth of digital tourism has transformed how travelers discover destinations, assess accommodation, compare prices, and evaluate environmental claims. This paper critically examines whether green marketing initiatives delivered through websites, online travel agencies, social media, and digital certification systems influence sustainable tourism consumer behaviour. Using a qualitative, desk-based integrative review of established academic research and institutional evidence, it evaluates four mechanisms: awareness creation, credibility and trust, perceived value, and the conversion of favorable attitudes into booking decisions. The analysis suggests that digital green marketing can improve the visibility and consideration of sustainable options, particularly where claims are specific, independently verified, and easy to compare. Its effectiveness is less certain when higher prices, convenience constraints, confusing labels, or greenwashing impede action. Industry survey data indicate strong stated interest in sustainable travel, but stated preferences should not be equated with measured purchase behaviour. The paper proposes a practical effectiveness framework combining exposure, engagement, booking conversion, operational sustainability outcomes, and destination-level community benefits. It concludes that green marketing contributes meaningfully to sustainable tourism only when verifiable improvements in service delivery accompany digital communication.

Keywords

Sustainable tourism; green marketing; digital marketing; consumer behaviour; ecolabels; greenwashing; purchase intention.

1. Introduction

Tourism provides employment, revenue, cultural exchange, and opportunities for regional development. Yet expanding travel can also intensify greenhouse-gas emissions, waste generation, pressure on water resources, biodiversity loss, and overcrowding. According to UN Tourism (2025), international tourist arrivals reached approximately 1.4 billion in 2024, demonstrating the sector's substantial scale. Sustainability is consequently no longer a peripheral concern for tourism marketing; it is a strategic issue concerning how destinations and enterprises generate value without transferring unacceptable costs to natural systems and host communities.

The United Nations Environment Programme and World Tourism Organization (2005) frame sustainable tourism around environmental, economic, and sociocultural impacts, rather than environmental protection alone. In commercial practice, green marketing communicates efforts such as renewable-energy use, water conservation, waste reduction, lower-impact mobility, local procurement, and biodiversity protection. The digital era enables businesses to place such messages at multiple points in the customer journey, from search results and social-media videos to booking filters and post-stay communications.

This visibility creates both opportunity and risk. Digital platforms can reduce the effort needed to find certified accommodation or local experiences, but promotional claims can also exaggerate small improvements while ignoring the impacts of transport or destination congestion. Booking.com (2025) reports that 93% of surveyed global travelers wanted to make more sustainable travel choices and had done so to some extent; the same research reports that 84% regarded more sustainable travel as important. These self-reported findings reveal interest, not a causal effect of marketing or a verified rate of sustainable purchases. The central question, therefore, is whether digital green marketing changes observable decisions and outcomes, rather than merely increasing favorable attitudes.

This paper aims to (i) identify major digital green marketing initiatives in tourism, (ii) explain the psychological mechanisms linking such initiatives to consumer responses, (iii) assess key barriers to effectiveness, and (iv) propose practical indicators for evaluation. Its contribution is a critical synthesis that distinguishes communication performance from actual sustainability performance.

2. Literature Review and Conceptual Foundations

1) *2.1 Sustainable tourism and green marketing*

Sustainable tourism seeks to balance tourists' experiences and business viability with ecosystem protection and community welfare (UNEP & WTO, 2005). Green marketing is narrower: it concerns how products, operations, and value propositions with environmental or broader sustainability features are designed, priced, communicated, and distributed. For tourism firms, effective green marketing must therefore correspond to real management practices rather than simply environmentally themed imagery. A low-impact hotel, for example, may communicate energy-efficiency measures, but its claim becomes informative only when the boundaries, baseline, and evidence are sufficiently clear.

2) *2.2 Consumer decision-making*

The theory of planned behavior (Ajzen, 1991) provides a useful explanation for sustainable travel intentions. Attitudes toward responsible travel, perceived social expectations, and perceived behavioral control jointly influence intentions. In a tourism application, Han, Hsu, and Sheu (2010) found these dimensions relevant to intentions to choose green hotels. Digital communications may strengthen positive attitudes by explaining environmental benefits; social proof may affect norms; and accessible filters, transparent prices, and transport information may improve perceived control. However, an intention to choose a sustainable option remains distinct from a completed reservation.

A complementary information-based interpretation emphasizes trust and perceived credibility. Consumers cannot readily inspect the energy performance or labour practices of a hotel before booking. Sustainability characteristics are often credence attributes that require independent verification. Font (2002) highlighted the limitations of proliferating tourism ecolabels and the risk that inconsistent standards create confusion. In digital markets, information asymmetry is compounded by short attention spans, platform ranking algorithms, and promotional content designed primarily to maximize engagement.

3) *2.3 The attitude–behaviour gap*

Travellers may express environmental concern while choosing flights, accommodation, and activities primarily according to price, safety, timing, comfort, and convenience. This gap does

not necessarily imply dishonesty: consumers encounter real trade-offs and sometimes lack trustworthy or affordable alternatives. Digital interventions are likely to work best when they make responsible choices understandable, accessible, and attractive without requiring disproportionate effort or expense.

3. Research Methodology

This study adopts a qualitative, desk-based integrative review and conceptual evaluation. It synthesizes seminal peer-reviewed scholarship on green hotel choice and tourism certification with authoritative institutional materials and recent industry survey evidence. Sources were selected for their relevance to sustainable tourism definitions, consumer decision mechanisms, digital green claims, and evaluation challenges. The review incorporates theoretical explanation, comparison of initiative types, and critical appraisal of limitations, rather than statistical pooling.

The principal analytical questions were: What is communicated? Through which digital touchpoints? Which consumer responses are plausibly affected? What conditions enhance or weaken credibility? Which indicators would establish actual behavioural and environmental effectiveness? Findings are organized by initiative and behavioural mechanism. This approach permits reasoned synthesis, but it does not constitute a systematic review, experiment, or original survey. No primary respondents were recruited, no experimental treatment was administered, and no new effect sizes or statistical significance tests are claimed. Company-reported consumer surveys are treated as descriptive evidence, with their self-report and sampling limitations made explicit.

4. Digital Green Marketing Initiatives and Their Effects

4) *4.1 Search platforms and online booking interfaces*

Online travel agencies and hotel websites can present sustainability certification badges, explain operational practices, and enable comparison of accommodation options. Their strongest potential effect is reducing information-search costs: a traveler interested in sustainability can identify feasible options at the moment of purchase. Yet platform labels differ in quality, and an unqualified “eco-friendly” tag may create false equivalence between verified certification and a hotel’s own assertion. Interface design also matters. If sustainable options are buried in menus,

their promotional value may not translate into a booking. Conversely, clear eligibility criteria, accessible filtering, and visible total prices can improve consumer confidence.

5) *4.2 Social media and content marketing*

Short videos, destination stories, travel creators, and guest-generated posts make conservation and community experiences vivid. Such storytelling can link abstract objectives to recognizable actions, such as supporting local guides or reducing single-use plastic. However, popularity metrics should not be confused with sustainability outcomes. A viral post may increase traffic to a fragile destination and create pressure on local infrastructure. Ethical content strategies should therefore avoid encouraging unmanaged visitation, identify partnerships transparently, and direct interest toward appropriately managed experiences.

6) *4.3 Certification and evidence-based environmental claims*

Independent verification can help consumers distinguish substantive environmental performance from promotional language. Font (2002) showed why certification integrity and consistent accreditation are essential for meaningful tourism ecolabels. In contemporary digital communication, an effective claim should state what is certified, by whom, against which standard, and for what period. Concrete indicators—such as audited energy use per guest-night, waste-diversion performance, or local purchasing commitments—are more informative than generic green symbolism. Even measured improvements should be presented in context; a reduction in hotel electricity use does not establish that an entire holiday is carbon neutral.

7) *4.4 Digital personalization and behavioural prompts*

Platforms can suggest rail connections, longer stays, off-season visits, refill opportunities, and locally operated experiences. Personalized suggestions may reduce the perceived sacrifice associated with sustainable alternatives. Behavioural prompts must nevertheless preserve informed choice and avoid misleading comparisons. A platform that promotes a lower-impact property while hiding important price or access information may produce short-lived clicks but damage trust. The most useful personalisation aligns environmental information with the traveler's budget, accessibility needs, and trip purpose.

8) *4.5 Post-purchase engagement*

Communication continues after booking through mobile check-in, digital itineraries, water-saving guidance, recycling information, and opportunities to support local enterprises. Such tools can influence behaviour during the trip, not only purchase intention. Their impact should be evaluated against operational data rather than message-open rates alone. For example, a water-conservation campaign is persuasive evidence of effectiveness only when associated consumption falls under comparable occupancy and operating conditions.

5. Critical Evaluation and Discussion

9) *5.1 Evidence of demand versus evidence of conversion*

The 2025 Booking.com research points to broad reported willingness to travel more sustainably, while also identifying growing concern about the effects of tourism on local communities (Booking.com, 2025). This is important evidence of consumer salience, but it comes from an industry-commissioned survey and should not be interpreted as proof that a particular promotional campaign changed booking behaviour. Respondents may overstate socially desirable preferences; definitions of sustainable travel may vary; and survey results do not provide the same evidence as observed transactions. A credible evaluation should compare verified bookings, price premiums actually paid, and repeat behaviour across exposed and comparable unexposed consumers.

10) *5.2 Trust as a mediating condition*

Green claims require trust to influence decisions. The credibility chain begins with genuine operational performance, proceeds through reliable measurement and independent verification, and ends with a comprehensible consumer-facing explanation. Weakness at any stage undermines the message. In particular, vague phrases such as “planet-friendly stay” give consumers little basis for comparison. The risk is not simply an ineffective advertisement: repeated disappointment may lower confidence in legitimate certification schemes and discourage responsible choices across the market.

11) *5.3 Affordability and structural constraints*

Environmental concern competes with household budgets and travel constraints. A traveler may be willing to choose a certified property when the price difference is modest but unable to do so when costs are substantially higher. Similarly, public transport may be absent, inaccessible, or incompatible with the trip schedule. These constraints suggest that marketing alone cannot deliver large-scale change. Product innovation, destination infrastructure, reliable mobility, policy incentives, and fair pricing remain important complements to persuasive messages.

12) *5.4 Destination and community outcomes*

Marketing can generate demand for local experiences and spread tourist expenditure, but a focus on the traveler alone misses the interests of host communities. A destination can become more commercially successful while residents experience higher prices, congestion, and environmental strain. Sustainability evaluation should therefore include locally retained spending, quality of employment, residents' attitudes, waste management, and ecological indicators. Campaigns promoting alternative seasons or lesser-visited areas also need safeguards against merely transferring pressure to locations with limited capacity.

13) *5.5 Proposed effectiveness measurement framework*

A five-stage framework offers a more rigorous alternative to assessing campaigns by impressions alone. First, measure communication exposure and comprehension using reach, recall, and understanding of verified claims. Second, evaluate intermediate perceptions—trust, perceived value, and ability to choose. Third, measure actual behaviour through booking conversion, transport selection, verified sustainable-product share, and repeat purchases, controlling for price and availability. Fourth, assess operational outcomes such as energy, water, waste, and verified supply-chain indicators, adjusted where feasible for occupancy and seasonality. Fifth, assess destination-level impacts, including community income retention and environmental pressure. Ideally, firms would employ randomized message tests or well-matched comparison groups, pre-register success criteria, and publish both positive and null findings. This separation helps identify campaigns that communicate successfully but fail to improve real-world outcomes.

5.6 Illustrative measurement scenarios

Consider two hypothetical accommodation campaigns. In the first, a hotel promotes a credible efficiency certification and records higher advertisement clicks, but booking conversions remain unchanged. Such a campaign establishes attention, not a behavioural effect. In the second, a booking platform displays independently verified accommodation standards beside price, location, and accessibility information. If a controlled comparison subsequently detects increased verified bookings without substantial displacement from other low-impact options, the evidence for consumer influence would be stronger. Even then, analysts should test whether guest-night energy and water consumption improve and whether any additional travel induced by the campaign offsets those gains. These examples are conceptual illustrations, not observations or experimental findings.

Evaluation should also examine fairness. Sustainability filters can unintentionally favour well-resourced chains able to purchase certification while excluding small family-run enterprises that follow responsible practices but cannot afford formal audits. Digital platforms could mitigate that disadvantage by offering proportionate verification pathways, publishing transparent criteria, and allowing locally owned businesses to explain concrete actions without presenting unverified assertions as certified facts. Likewise, campaigns should distinguish low-carbon travel from broader community-sensitive tourism: a nearby journey may still place pressure on scarce local water supplies, while a community-run tourism service may yield social benefits that require additional indicators. Accordingly, sustainability evaluation should resist reducing multidimensional outcomes to a single promotional score.

6. Managerial and Policy Implications

Tourism businesses should prioritize auditable sustainability improvements before investing in promotional claims. Each digital claim should be specific, dated, and linked to a public explanation of the relevant standard or metric. Marketing teams should collaborate with operations staff so that the content of advertisements remains consistent with actual services. Booking platforms can improve consumer agency by integrating transparent certification criteria, meaningful filters, clear price comparisons, and accessible low-impact travel options.

Destination management organizations should coordinate businesses, local communities, and transport providers rather than treat sustainable tourism as a branding exercise. Regulators and

certification bodies can reduce consumer confusion by strengthening claim substantiation, monitoring misleading advertising, and improving comparability among standards. Researchers should prioritize field experiments and longitudinal analyses that link exposure to transactions and environmental outcomes. Studies in emerging tourism economies are particularly valuable because infrastructure, digital literacy, price sensitivity, and institutional trust may differ from those in established tourism markets.

7. Limitations and Future Research

The analysis is conceptual and based on selected secondary sources. It cannot estimate an average causal effect of digital green marketing or establish that one channel universally outperforms another. The cited consumer survey measures reported perceptions and behaviour rather than independently observed booking decisions. Moreover, the literature spans distinct national contexts and types of tourism enterprises. Future research could test certification wording, trusted third-party endorsements, price disclosures, and low-impact default options using transaction-linked experiments. Mixed-method designs combining platform analytics, traveler interviews, resident perspectives, and audited environmental indicators would provide a more complete account of effectiveness.

8. Conclusion

Digital green marketing can contribute to sustainable tourism by making credible information easier to discover, improving consumer understanding, and reducing the friction of choosing lower-impact services. Its influence is conditional, however, on evidence quality, price, convenience, trustworthy verification, and the availability of genuinely sustainable products. Positive online engagement and stated interest are insufficient measures of success. The most defensible standard evaluates whether communications alter observed travel decisions and whether those decisions generate measurable environmental and community benefits. Sustainable tourism in the digital era therefore requires alignment among marketing, operational accountability, platform design, and destination governance.

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