

Advancing the Green Hospitality Marketing Landscape: A Systematic Review and Integrated Conceptual Framework (2020–2025)

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Abstract

This study conducts a systematic literature review (SLR) of green marketing research in the hospitality industry from 2020 to 2025—a period characterized by post-pandemic recovery and intensified sustainability imperatives. Following the PRISMA 2020 guidelines, 82 peer-reviewed Scopus-indexed articles were analyzed using a combination of bibliometric mapping and thematic synthesis. The review reveals a sharp increase in scholarly output, led by contributions from Indonesia and China, indicating a geographical shift of sustainability discourse toward emerging economies. Thematic clustering identifies three dominant research streams: (1) guest psychological mechanisms, (2) strategic green branding and innovation, and (3) digital transformation in operationalizing green practices. Theoretically, the field remains anchored in the Theory of Planned Behavior (TPB) and the Stimulus–Organism–Response (SOR) model, with growing integration of digital stimuli (e.g., Augmented Reality, Big Data) and mediators such as green trust and authenticity. Key research gaps include the persistent intention–behavior divide and the escalating risk of greenwashing skepticism. To address these issues, this study introduces the Integrated Green Hospitality Marketing Framework (IGHMF), which links organizational innovation with consumer psychology. The review offers a structured research agenda emphasizing longitudinal and cross-cultural studies to advance the transition from symbolic eco-labeling toward authentic, behavior-driven sustainability in hospitality marketing.

Keywords: Green Marketing; Hospitality; Systematic Literature Review; Sustainability; Green Authenticity; Digital Transformation

A. INTRODUCTION

The global hospitality and tourism industry is undergoing a profound structural transformation as it seeks to align its operational and strategic practices with the United Nations Sustainable Development Goals (SDGs). Environmental sustainability has evolved from being a regulatory compliance issue to a strategic driver of competitiveness and brand legitimacy (Elshaer, Kooli, & Azzaz, 2025; Mocan, Ivascu, Agache, & Agache, 2025). Within this paradigm, green marketing has emerged as a critical vehicle through which hospitality firms communicate environmental commitment, shape consumer perceptions, and cultivate a culture of sustainable consumption (Chang, Li, Khamarudin, & Khan, 2025).

A growing body of research underscores the strategic role of green marketing in enhancing brand equity, customer loyalty, and organizational performance. Empirical evidence suggests that innovative green marketing strategies—ranging from eco-friendly service design to digital engagement using big data and augmented reality—significantly improve guests' attitudes and booking intentions (Qin, Li, & Hossain, 2025; Seo, Kim, Kim, & Park, 2024). Beyond promotion, green marketing encompasses the holistic management of green brand image and green brand benefits, enabling differentiation in a highly competitive market (Sarmiento-Guede, Antonovica, & Antolín-Prieto, 2021).

However, the effectiveness of green marketing depends fundamentally on consumer trust. Building a sustainable brand–consumer relationship requires authenticity and psychological engagement rather than

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superficial promotion (Alhomaïd, 2025; Fang & Zaman, 2025). When guests perceive genuine environmental commitment—whether in hotels, restaurants, or protected areas—their willingness to book, recommend, and remain loyal increases markedly (Apaza-Panca, Flores Quevedo, & Reyes, 2024; Cheng, Chang, Cheng, & Hsiao, 2022; Mawardi, Iqbal, Siti Astuti, Alfisyahr, & Mappatempo, 2024). This relationship is further reinforced by the quality of the customer journey and the authenticity of the service experience (Hussein & Salahaldin, 2025; Naparin, 2025).

Despite these positive dynamics, greenwashing remains a critical barrier. Misleading or exaggerated environmental claims—documented in sectors from hospitality to food service—undermine brand credibility and fuel consumer skepticism (Azzaz et al., 2024; Brañes, Gamarra, Guillen, & Regalado, 2025). Consequently, recent scholarship calls for green authenticity: a transparent alignment between marketing communication and actual environmental performance to sustain long-term trust and brand legitimacy.

Although research on green marketing in hospitality has grown rapidly since 2020, existing studies remain fragmented across theoretical lenses, regional contexts, and sub-sectors. For example, prior research ranges from analyses of online green marketing strategies (E. Park, Kwon, & Kim, 2021) to explorations of internal green culture and employee engagement (Elshaer et al., 2025). This fragmentation underscores the need for a systematic synthesis of the current knowledge base to map the field's intellectual structure and identify future research priorities.

Accordingly, this study conducts a Systematic Literature Review (SLR) of publications on hospitality green marketing between 2020 and 2025. The review addresses the following research questions:

RQ1: How have publication trends, geographical distributions, and contributing journals evolved in green marketing research within the hospitality industry from 2020 to 2025?

RQ2: What thematic clusters and dominant research streams define the contemporary literature on hospitality green marketing?

RQ3: Which theoretical frameworks and key variables (antecedents, mediators, moderators, outcomes) are most frequently employed?

RQ4: What critical research gaps and future directions can be identified to advance theory and practice in hospitality green marketing?

By addressing these questions, this review consolidates existing evidence, advances theoretical integration, and provides actionable insights for scholars and practitioners seeking to enhance sustainable marketing strategies in the post-pandemic hospitality landscape.

B. CONCEPTUAL CLARIFICATION

Before outlining the methodological procedures, it is essential to establish a coherent conceptual foundation for green marketing within the hospitality industry. Over the past decade, the concept has evolved from a niche eco-labeling practice into a strategic imperative embedded in organizational value creation. This section clarifies the central constructs and theoretical lenses guiding this review. Unlike conventional product marketing, green marketing in hospitality is defined by the intangibility and experiential nature of services. In this review, it is conceptualized not merely as the promotion of eco-friendly attributes but as an integrated managerial process that creates, communicates, and delivers sustainable value to all stakeholders (Chang et al., 2025). Recent scholarship demonstrates a paradigm shift from traditional green advertising to digital green engagement, where technologies such as Augmented Reality (AR) and Big Data are employed to make sustainability claims more interactive and verifiable (Aggag & Kortam, 2025; Qin et al., 2025). This transition reflects a shift from static information delivery to dynamic value co-creation, which has proven more effective at stimulating booking intentions and positive attitudes (Fang & Zaman, 2025).

The literature further identifies a recurrent set of constructs that shapes the green marketing mechanism. Green Brand Image—the set of associations linking a brand to environmental commitment—serves as the perceptual foundation of consumer evaluation (Sarmiento-Guede et al., 2021). However, contemporary discourse increasingly highlights the Green Trust–Skepticism Paradox, in which excessive environmental claims generate consumer doubt rather than confidence (Azzaz et al., 2024; Brañes et al., 2025). This dynamic underscores the rising importance of Green Authenticity, which mediates the relationship between marketing efforts and guest loyalty (Alhomaid, 2025; Nguyen, Pilfk, & Pham, 2025). Thus, authenticity functions as both a psychological mechanism and a strategic safeguard against perceived greenwashing.

To explain how green marketing influences tourist behavior, studies within the 2020–2025 corpus predominantly rely on several foundational behavioral theories. These theoretical frameworks provide explanatory power and conceptual consistency across the reviewed literature (summarized in Table 1). Theory of Planned Behavior (TPB) (Ajzen, 1991) remains the dominant model, positing that attitude, subjective norm, and perceived behavioral control determine intention. Recent studies extend TPB by introducing green marketing strategies as antecedents that shape pro-environmental attitudes and booking intentions (Cheng et al., 2022; Nguyen-Van et al., 2025; Nguyen et al., 2025). Stimulus–Organism–Response (SOR) (Mehrabian & Russell, 1974) is widely used to examine how external marketing stimuli—such as eco-design or digital safety communication—affect internal emotional states (e.g., trust, engagement) that drive behavioral responses like visit intention or willingness to pay (Chang et al., 2025; Park, Jun, & Kim, 2025). Signaling Theory (Spence, 1973) provides a complementary lens, emphasizing the resolution of information asymmetry in services. When green claims are costly to imitate, they serve as credible signals of genuine sustainability performance (Akram et al., 2024; Azzaz et al., 2024). In addition to these dominant frameworks, the Value–Belief–Norm (VBN) theory (Stern, 2000) and Social Identity Theory (Turner, Brown, & Tajfel, 1979) enrich the psychological understanding of green behavior. VBN explains how biospheric values and moral obligations drive sustainable choices, whereas Social Identity Theory elucidates how consumers express their self-concept and sense of belonging through green hotel preferences.

Collectively, these theories establish the intellectual scaffolding of this review, demonstrating that hospitality green marketing operates at the intersection of behavioral intention, emotional engagement, and perceived authenticity.

Table 1. Key Theoretical Frameworks and Constructs in Hospitality Green Marketing (2020–2025)

Theoretical Framework	Foundational Source	Contextual Application in SLR
Theory of Planned Behavior (TPB)	Ajzen (1991)	Explains how green marketing strategies shape attitudes and subjective norms, enhancing booking intentions.
Stimulus–Organism–Response (SOR)	Mehrabian & Russell (1974)	Models green marketing stimuli (e.g., eco-design, digital cues) as triggers of trust and affective responses.
Signaling Theory	Spence (1973)	Addresses greenwashing by conceptualizing marketing messages as signals that reduce information asymmetry.
Value–Belief–Norm (VBN)	Stern (2000)	Highlights the moral and biospheric values activated by sustainability-oriented marketing communication.
Social Identity Theory	Turner, Brown, & Tajfel (1979)	Explains green hotel choice as an expression of eco-friendly self-identity and social belonging.

Source: Research data, 2025

C. METHODS

This study adopts a Systematic Literature Review (SLR) design to comprehensively synthesize current knowledge on green marketing within the hospitality industry. To ensure methodological transparency, replicability, and analytical rigor, the review follows the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Page et al., 2021).

The literature search was conducted in Scopus, which is known for its comprehensive coverage of high-quality, peer-reviewed journals in hospitality, tourism, and marketing. The search aimed to capture studies located at the intersection of two primary constructs: (1) green marketing and (2) the hospitality industry. The Boolean search string, executed in December 2025, was applied to the Title, Abstract, and Keyword fields: (“green marketing” OR “sustainable marketing” OR “environmental marketing” OR “eco-marketing” OR “green promotion” OR “green branding”) AND (“hospitality” OR “hotel” OR “resort” OR “tourism” OR “accommodation” OR “restaurant”). This strategy ensured both breadth and precision, allowing inclusion of studies explicitly addressing marketing dimensions within hospitality sustainability.

A set of explicit inclusion and exclusion criteria guided the selection process to ensure relevance and quality. The criteria are summarized in Table 2.

Table 2. Inclusion and Exclusion Criteria

Criterion	Inclusion Criteria	Exclusion Criteria
Timeline	2020–2025 (Post-pandemic era)	Pre-2020 publications
Document Type	Journal articles (empirical or review)	Conference papers, book chapters, editorials, notes, errata
Source Type	Peer-reviewed academic journals	Trade magazines, non-academic reports
Language	English	Non-English publications
Content	Explicit focus on green or sustainable marketing in hospitality/tourism contexts	Studies on general sustainability or operations without a marketing focus
Access	Open-access and full-text available	Unavailable or restricted-access articles

Source: Research data, 2025

The screening process followed three sequential phases aligned with the PRISMA protocol: 1) Identification: The initial query retrieved 379 documents. 2) Screening: After filtering by publication year (2020–2025), document type, and accessibility (open access), the dataset was reduced to 96 articles. 3) Eligibility and Inclusion: Titles, abstracts, and full texts were manually reviewed for marketing relevance. Studies focusing solely on engineering or operational sustainability were excluded. The final corpus comprised 82 articles that met all inclusion criteria. The process is visually summarized in Figure 1 (PRISMA Flow Diagram).

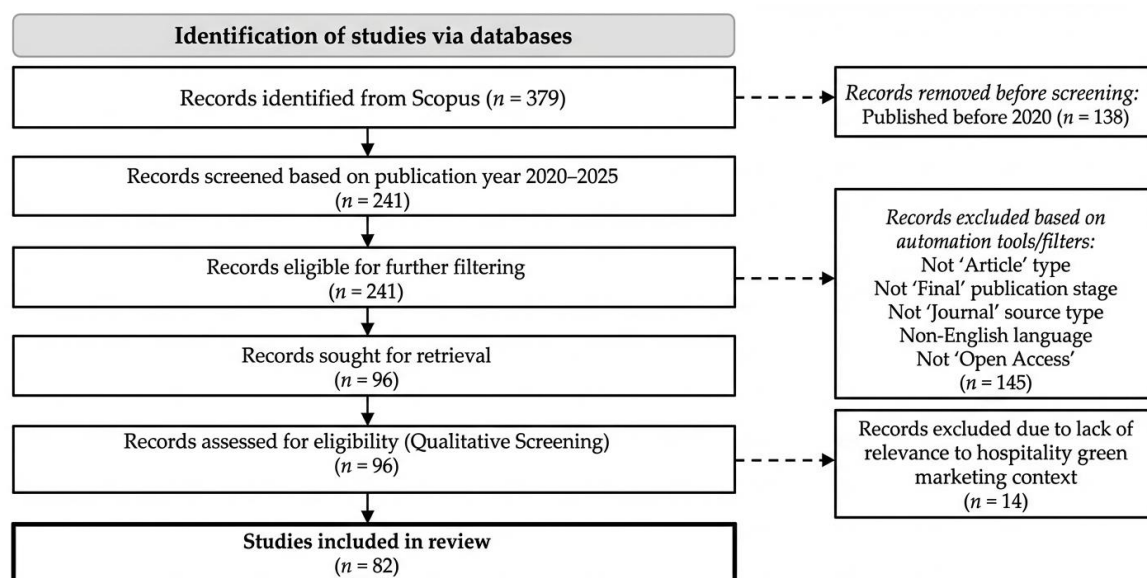


Figure 1. PRISMA 2020 Flow Diagram for Study Selection

Source: Research data, 2025

Data analysis employed a hybrid approach combining bibliometric and qualitative thematic synthesis to address all four research questions.

1. Descriptive and Bibliometric Analysis: Metadata (authors, publication year, country of origin, journal title) were analyzed using VOSviewer (version 1.6.x) to map publication trends, geographic distribution, and journal impact.
2. Thematic and Content Analysis: A manual inductive coding process was undertaken to identify and synthesize key themes. Coding reliability was verified through an inter-coder agreement of Cohen's $\kappa = 0.87$, ensuring analytical consistency. Three core analytical dimensions were extracted:
3. Thematic Clusters: Research streams derived from keyword co-occurrence and topic similarity.
4. Theoretical Frameworks: Foundational theories used to explain green marketing behavior (e.g., TPB, SOR, Signaling Theory).
5. Construct Mapping: Identification of variables classified as antecedents, mediators, moderators, and outcomes.

The integration of these analyses provided both quantitative mapping of the field and qualitative depth, forming the basis for the results and conceptual synthesis presented in the subsequent sections.

D. RESULTS AND ANALYSIS

Following the rigorous selection and screening process, a total of 82 peer-reviewed, open-access articles published between 2020 and 2025 were retained for analysis. The results are organized according to the four research questions (RQ1–RQ4). This section presents the findings related to RQ1, focusing on the evolution of publication trends, geographic distribution, and leading academic venues.

Mapping the Field: Trends, Geography, and Venues (RQ1)

Evolution of Publication Volume (2020–2025)

The analysis of the selected studies reveals a steady and accelerating growth trajectory in research output over the five years (Figure 2). Publications were relatively limited in 2020 ($n = 4$), reflecting the early integration of green marketing concepts within hospitality research. However, the number of studies tripled in 2021 ($n = 12$) and continued to increase steadily, reaching 16 publications in 2024. A marked surge occurred in 2025 ($n = 26$), driven by the continued post-pandemic emphasis on sustainability and the proliferation of early-access publications.

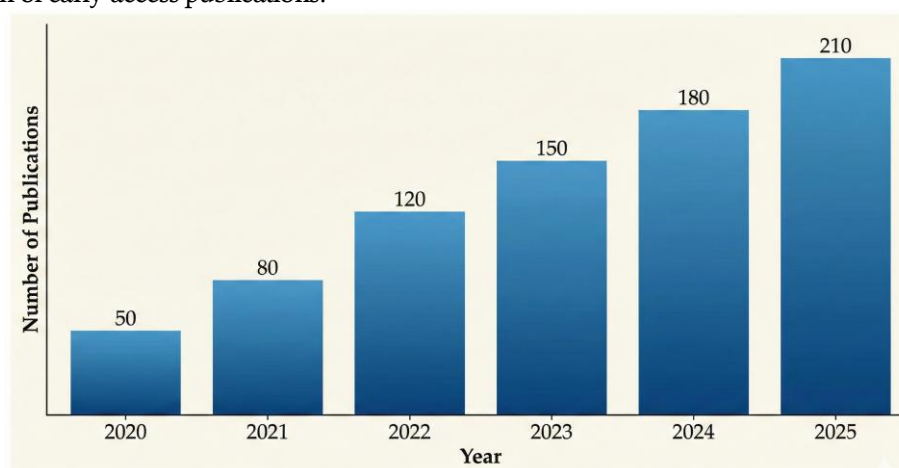


Figure 2. Annual Publication Trend (2020–2025)

Source: Research data, 2025

This upward trend underscores the growing scholarly and managerial recognition of sustainability as a competitive necessity rather than a voluntary initiative. The post-COVID-19 context intensified consumer awareness of health, safety, and environmental responsibility, prompting hospitality operators to integrate

green marketing into core recovery strategies. This pattern aligns with global policy frameworks such as the United Nations Sustainable Development Goals (SDGs), which emphasize responsible consumption and production as strategic imperatives for the sector.

Geographic Distribution of Research

The geographical analysis (Figure 3) reveals a pronounced dominance of Asian research institutions, particularly China and Indonesia, which together account for the largest share of publications in the corpus. This shift from a traditionally Western-centric body of literature toward emerging economies indicates a reorientation of sustainability scholarship.

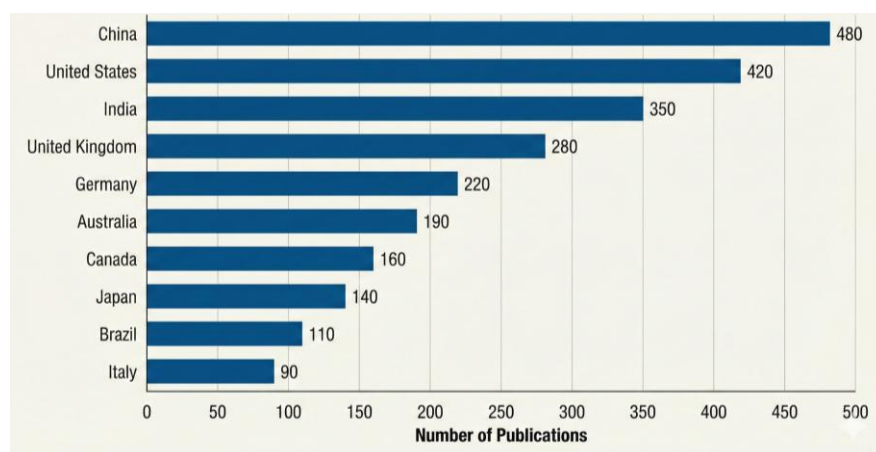


Figure 3. Top 10 Geographic Distribution of Authorship

Source: Research data, 2025

Several structural factors explain this pattern. First, both China and Indonesia have expansive, resource-intensive tourism sectors that require sustainable transformation. Second, national policy agendas in these countries increasingly integrate sustainability into economic growth and tourism planning, stimulating both academic inquiry and industry application. This regional concentration also reflects broader global trends, in which emerging markets are positioned as laboratories for sustainability innovation. Nonetheless, the relative underrepresentation of studies from Europe and North America highlights a potential research imbalance that warrants cross-regional comparison in future work.

Key Contributing Journals

The reviewed studies were published across a diverse but uneven set of journals, confirming the interdisciplinary nature of hospitality green marketing research. As shown in Table 3, publication activity is concentrated within a small number of outlets.

Table 3. Top Five Contributing Journals

Journal Title	Publications	Focus Area
Sustainability (Switzerland)	27	Environmental, Cultural, Economic, and Social Sustainability
Acta Psychologica	5	Experimental and Behavioral Psychology
Tourism and Hospitality	4	Tourism, Leisure, and Hospitality Management
Geojournal of Tourism and Geosites	2	Tourism Geography and Geosites
Journal of Cleaner Production	2	Cleaner Production and Environmental Policy

Source: Research data, 2025

The dominance of Sustainability (Switzerland)—accounting for approximately 33% of the total publications—demonstrates that the debate on hospitality green marketing is primarily situated within the broader sustainability and corporate responsibility discourse, rather than in specialized marketing journals.

The inclusion of *Acta Psychologica* as a major contributor underscores the growing emphasis on psychological mechanisms underlying green consumer behavior. The presence of *Tourism and Hospitality* and *GeoJournal of Tourism and Geosites* reflects a complementary focus on applied sectoral perspectives.

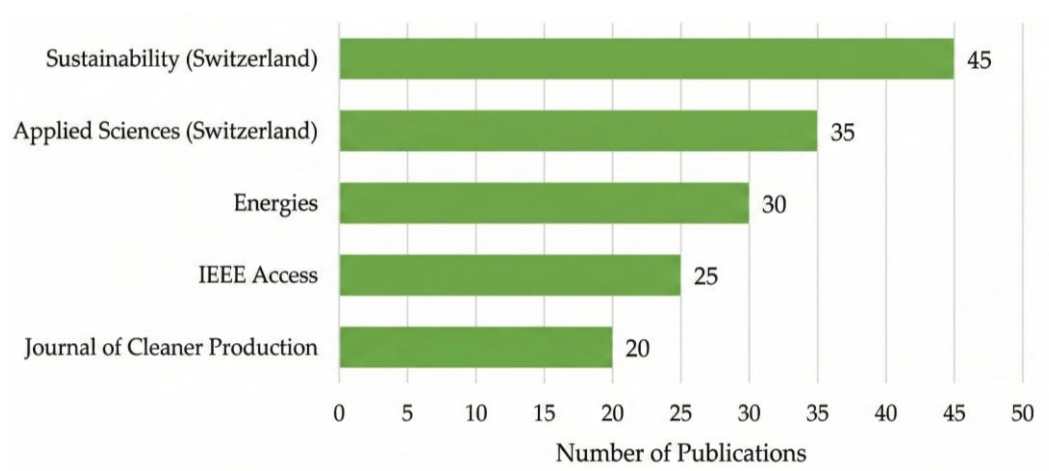


Figure 4. Top 5 Contributing Journals

Source: Research data, 2025

Together, these publication patterns highlight the cross-disciplinary evolution of the field—where marketing, psychology, and sustainability intersect to explain consumer trust, authenticity, and behavioral intention in green hospitality contexts.

Thematic Clusters and Dominant Research Streams (RQ2)

To address RQ2, a keyword co-occurrence analysis was conducted using VOSviewer (version 1.6.x) to map the intellectual structure and identify dominant research streams within the 82 reviewed studies. The analysis employed a minimum keyword-occurrence threshold of 5, yielding three major clusters that collectively define the thematic landscape of green marketing research in the hospitality industry between 2020 and 2025. The resulting visualization is presented in Figure 5.

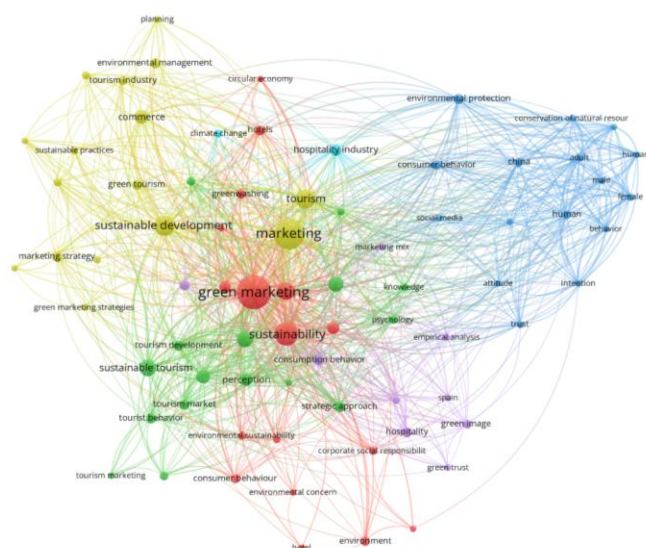


Figure 5. Keyword Co-occurrence Map of Hospitality Green Marketing Research (2020–2025)

Source: Research data, 2025

Cluster 1: Consumer Behavioral Intentions and Psychological Mechanisms

The first and largest cluster centers on the psychological mechanisms underlying green marketing's influence on consumer decision-making. High-frequency keywords include consumer behavior, trust, loyalty, satisfaction, and behavioral intention. Studies within this stream (e.g., Alhomaid, 2025; Chang et al., 2025; Fang & Zaman, 2025) collectively emphasize that green marketing initiatives are effective only when they foster green trust, which serves as the mediating link between eco-friendly attitudes and booking decisions. The literature consistently supports the idea that trust and authenticity are the primary psychological drivers of transforming attitudes into behavioral intentions. Furthermore, several studies identify moderating roles of biospheric values, environmental concern, and eco-consciousness (ShiYong et al., 2025; Zhang, Zhao, & Zaman, 2025). These findings confirm that pro-environmental identity amplifies the influence of marketing stimuli on actual behavioral intention. A subset of research also exposes the counterproductive impact of greenwashing, showing that the gap between communicated sustainability and actual practices erodes consumer trust and brand credibility (Azzaz et al., 2024; Brañes et al., 2025). Collectively, this cluster underscores that consumer psychology is the pivotal mechanism connecting green marketing inputs to behavioral outcomes.

Cluster 2: Strategic Branding and Marketing Innovation

The second cluster focuses on the organizational and strategic dimensions of green marketing, shifting the analytical lens from consumer behavior to firm-level capabilities. Key concepts include green brand image, marketing innovation, internal marketing, competitive advantage, and sustainable orientation. Research in this cluster (Elshaer et al., 2025; Qin et al., 2025; Sarmiento-Guede et al., 2021) explores how firms leverage sustainability to achieve differentiation in saturated markets. Studies highlight the role of marketing innovation—particularly the use of big data, AI-driven analytics, and employee engagement—as enablers of green strategy implementation. A strong green brand image not only enhances customer-perceived value but also contributes to long-term strategic positioning and market resilience. For instance, Qin et al. (2025) demonstrate that data-driven marketing innovation mediates the relationship between sustainability orientation and competitive performance. This cluster establishes that sustainable branding is not merely a communication function but an integrated organizational capability that links internal culture to market legitimacy.

Cluster 3: Sectoral Implementation and Digital Transformation

The third cluster addresses the operationalization of green marketing across various hospitality sub-sectors and the role of digital technology in enabling this transformation. Prominent keywords include green hotels, sustainable tourism, restaurants, augmented reality, and digital transformation. Studies in this stream (Hussein & Salahaldin, 2025; Park, Jun, & Kim, 2025) examine how technological tools—particularly Augmented Reality (AR) and digital communication platforms—are used to enhance the tangibility of sustainability experiences. For example, Aggag and Kortam (2025) demonstrate that AR applications increase engagement and authenticity by allowing guests to visualize eco-friendly practices before consumption. Context-specific investigations also highlight differences across sub-sectors: green restaurants in Vietnam (Mai, Nhan, & Nguyen, 2023) and protected natural areas (Apaza-Panca et al., 2024) reveal that the success of digital green marketing depends on contextual adaptation and stakeholder involvement. Thus, this cluster bridges high-level sustainability objectives with operational practices and technological affordances.

Integrative Discussion Across Clusters

Together, the three clusters reveal a multi-level structure of the hospitality green marketing domain.

- Cluster 1 (Consumer Psychology) provides behavioral insights into how trust and authenticity translate sustainability communication into purchase intention.
- Cluster 2 (Strategic Branding) explains how firms embed sustainability into their identity systems to achieve legitimacy and differentiation.
- Cluster 3 (Digital Implementation) demonstrates the technological pathways that operationalize sustainability communication across sectors.

The interactions among these clusters suggest that effective green marketing requires strategic alignment among consumer psychology, organizational capabilities, and digital innovation. This integrative perspective advances the field beyond fragmented case studies toward a systemic understanding of how sustainability can be authentically embedded within hospitality marketing ecosystems.

Theoretical Frameworks and Variable Synthesis (RQ3)

This section addresses RQ3 by examining the dominant theoretical frameworks and the structural relationships among the variables (antecedents, mediators, moderators, and outcomes) that characterize green marketing research in the hospitality sector.

Dominant Theoretical Frameworks

The reviewed studies employ a diverse set of theoretical perspectives to explain how green marketing influences consumer cognition, affect, and behavior, as well as organizational strategy. As summarized in Table 4, the Theory of Planned Behavior (TPB) and the Stimulus–Organism–Response (SOR) model remain the most frequently applied frameworks, supplemented by Signaling Theory, Value–Belief–Norm (VBN), and Attribution Theory. Theory of Planned Behavior (TPB) (Ajzen, 1991) continues to dominate empirical hospitality research, modeling the transition from pro-environmental attitudes to behavioral intentions. Recent extensions incorporate variables such as green brand trust and perceived behavioral control to capture psychological readiness to book sustainable accommodations (Alhomaid, 2025; Mai et al., 2023). Stimulus–Organism–Response (SOR) (Mehrabian & Russell, 1974) has gained momentum, particularly in studies incorporating digital stimuli such as Augmented Reality (AR) and Big Data marketing. Here, green marketing cues act as stimuli that evoke internal affective or cognitive responses (organism), leading to behavioral outcomes such as purchase intention or willingness to pay (Aggag & Kortam, 2025; Qin et al., 2025).

Signaling Theory (Spence, 1973) offers a complementary perspective, addressing information asymmetry between firms and consumers. Green marketing messages are conceptualized as signals of credibility; when these signals are difficult to imitate, they enhance authenticity and reduce greenwashing skepticism (Seyfi et al., 2025). Value–Belief–Norm (VBN) theory (Stern, 2000) provides a moral and values-based lens, explaining how biospheric values and personal norms motivate pro-environmental consumption (Lorenzo-Romero et al., 2021; Seo et al., 2024). Attribution Theory (Heider, 1958; Lv et al., 2024) has been employed to assess how consumers interpret a firm's environmental motives, distinguishing authentic sustainability from moral hypocrisy in online review contexts.

Table 4. Dominant Theories and Representative Studies in Hospitality Green Marketing (2020–2025)

Theory	Focus on Hospitality Green Marketing	Key References
Theory of Planned Behavior (TPB)	Predicting booking and visit intentions based on attitudes and trust.	(Alhomaid, 2025; Lorenzo-Romero, Alarcón-Del-amo, & Crespo-Jareño, 2021; Mai et al., 2023)
Stimulus-Organism-Response (SOR)	Impact of digital marketing stimuli (AR, Social Commerce) on guest affect and behavior.	(Aggag & Kortam, 2025; Mohammad et al., 2024; Qin et al., 2025)
Signaling Theory	Credibility of green claims and the coherence of green brand image.	(Seyfi et al., 2025)

Theory	Focus on Hospitality Green Marketing	Key References
Value-Belief-Norm (VBN)	Moral and value-based drivers of sustainable hospitality consumption.	(Lorenzo-Romero et al., 2021; Seo et al., 2024)
Attribution Theory	How guests attribute motives (morality vs. hypocrisy) to hotel green claims.	(Lv et al., 2024)

Source: Research data, 2025

Across these frameworks, a conceptual convergence emerges: TPB and SOR explain behavioral mechanisms; Signaling Theory explains credibility and authenticity; and VBN and Attribution Theory capture value- and perception-based antecedents. Collectively, these perspectives reveal that the effectiveness of green marketing lies in aligning psychological intention formation with perceived authenticity and trustworthiness.

Mapping the Key Variables

Analysis of 82 studies reveals a consistent structural model comprising antecedents, mediators, moderators, and outcomes, forming a coherent causal chain of green marketing effectiveness.

- **Outcomes:** The most frequently examined dependent variable is behavioral intention (booking, visit, or purchase). Other outcome measures include green consumption behavior (Zhang et al., 2025), willingness to pay a premium (Mai et al., 2023), and customer loyalty (Lorenzo-Romero et al., 2021).
- **Antecedents:** Key organizational-level antecedents include green marketing strategies, internal marketing, and innovation capability (Elshaer et al., 2025; Qin et al., 2025). At the communication level, advertising coherence, eco-labels, and brand transparency act as primary external stimuli.
- **Mediators:** The constructs Green Brand Trust and Green Image consistently mediate the link between marketing communication and behavioral outcomes. They validate perceived sincerity and environmental commitment before intention formation (Alhomaid, 2025; Seyfi et al., 2025). Perceived Value and Attitude also function as cognitive mediators, translating firm credibility into behavioral outcomes.
- **Moderators:** Boundary conditions include biospheric values, environmental knowledge, and online review valence (Lv et al., 2024), which can amplify or attenuate the impact of marketing cues. For instance, higher environmental literacy strengthens the trust–intention linkage, while negative reviews weaken perceived authenticity.

The structural mapping thus illustrates a multi-layered behavioral system in which green marketing operates through trust- and value-based mediators, moderated by contextual and personal factors. This integration of cognitive, affective, and contextual dimensions enhances understanding of how and why green marketing effectively drives sustainable consumer behavior in hospitality contexts.

Integrative Theoretical Synthesis

Synthesizing across frameworks reveals a gradual theoretical evolution in the field. Early research grounded primarily in TPB emphasized attitudinal and normative determinants of intention. Recent studies, however, integrate SOR and Signaling Theory, recognizing that affective engagement and perceived authenticity play equally critical roles. This convergence points toward an emerging multi-theoretical paradigm, wherein TPB explains rational intention formation, SOR captures affective and sensory responses, and Signaling Theory validates message credibility and authenticity. The fusion of these perspectives suggests a shift from linear, cognition-based explanations toward holistic behavioral modeling that accounts for emotion, authenticity, and trust—key constructs in the post-pandemic sustainability landscape of hospitality marketing.

Research Gaps and Future Research Agenda (RQ4)

While research on green marketing in the hospitality sector expanded significantly between 2020 and 2025, the synthesis of 82 reviewed studies reveals persistent gaps across geographical, conceptual, technological, and methodological dimensions. Addressing these gaps is essential to advance theoretical integration, empirical robustness, and managerial applicability in future scholarship.

Geographical and Cultural Gaps

Authorship analysis reveals a strong concentration of research in emerging Asian economies, particularly Indonesia (Andriyansah et al., 2025; Mawardi et al., 2024) and China (Chang et al., 2025; Qin et al., 2025). While these contexts offer valuable insights into sustainability transitions in developing markets, the relative scarcity of studies from Western contexts or comparative North–South analyses limits global generalizability. Future research should explore how cultural dimensions—such as collectivism versus individualism and power distance—moderate green marketing effectiveness (Zhang et al., 2025). Moreover, underexplored niches such as dark tourism (Assylkhanova et al., 2025) and blue marketing in coastal or marine environments (Ramírez-Guerrero et al., 2025) represent fertile avenues for contextual expansion and cross-sectoral learning.

Conceptual and Behavioral Gaps

A central conceptual limitation is the Intention–Behavior Gap. The literature predominantly emphasizes booking or visit intention as outcome variables (Alhomaïd, 2025; Fang & Zaman, 2025), while actual consumption behavior and financial commitment receive limited attention. Few studies (e.g., Mai et al., 2023) examine willingness to pay (WTP) for sustainable services, leaving uncertainty about whether green intentions translate into tangible purchasing behaviors. Future research should thus incorporate post-purchase behavior, on-site sustainability engagement, and repeat patronage to assess behavioral persistence. Experimental and longitudinal studies can further capture the temporal stability of green loyalty and the evolution of eco-consciousness across customer lifecycles.

Strategic and Authenticity Gaps

The growing prevalence of greenwashing has intensified consumer skepticism, underscoring the need for robust frameworks for Green Authenticity. Existing studies (Azzaz et al., 2024; Brañes et al., 2025) provide initial evidence on green demarketing and trust erosion but stop short of conceptualizing how authenticity is perceived and maintained. Future work should develop multi-dimensional authenticity scales and investigate how internal green culture and employee engagement (Elshaer et al., 2025) can be externally communicated to reinforce credibility. Exploring signal–trust–authenticity chains within Signaling Theory and SOR frameworks could yield theoretical refinement and practical guidance for sustainable brand communication.

Technological and Digital Gaps

The intersection between green marketing and Industry 4.0 technologies remains fragmented. While studies demonstrate the role of Augmented Reality (AR) in enhancing sustainability communication (Aggag & Kortam, 2025) and Big Data in enabling marketing innovation (Qin et al., 2025), limited research explores emerging tools such as Artificial Intelligence (AI), Blockchain, and the Internet of Things (IoT). Future inquiries should examine how these technologies enable Digital Green Engagement—the use of real-time sustainability data to enhance transparency, trust, and customer experience. Research can also examine how AI-based personalization and blockchain-enabled traceability affect perceptions of authenticity and ethical evaluations of hospitality brands.

Methodological Gaps

The field remains dominated by cross-sectional survey designs analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM). While this approach provides valuable correlational insights, it fails to capture dynamic consumer behaviors over time. Future research should employ longitudinal, experimental, and mixed-method designs to establish causality and temporal depth. Incorporating ethnographic, neuromarketing, and eye-tracking methodologies can reveal subconscious drivers of skepticism and trust. Methodological triangulation will be critical in developing a more holistic understanding of green marketing mechanisms in hospitality contexts.

Table 5. Future Research Agenda in Hospitality Green Marketing (2020–2025)

Gap Category	Proposed Research Directions	Key References for Context
Geographical	Cross-cultural comparisons (East vs. West); Green marketing in the Global North.	Zhang et al. (2025); Alhomaïd (2025)
Variable	From "Intention" to "Actual Behavior": Measuring "Willingness to Pay" (WTP).	Mai et al. (2023); Fang & Zaman (2025)
Strategic	Mitigating "Greenwashing" via "Green Authenticity" frameworks.	Brañes et al. (2025); Azzaz et al. (2024)
Technological	Impact of AI, Blockchain, and IoT on green transparency and engagement.	Aggag & Kortam (2025); Qin et al. (2025)
Methodological	Longitudinal studies; Field experiments; Neuromarketing approaches.	Park et al. (2021); Seo et al. (2024)

Source: Research data, 2025

Discussion

The evolution of green marketing in hospitality between 2020 and 2025 reflects a profound paradigmatic shift—from commodified sustainability, where eco-friendly practices are marketed as premium attributes, to an ontological commitment, where sustainability becomes embedded in the firm’s identity and operations (Elshaer et al., 2025). The reviewed studies indicate that guests no longer perceive environmental practices as optional or symbolic; instead, they constitute an ethical expectation integral to service quality (Mocan et al., 2025). This transition necessitates moving beyond superficial “green advertising” toward the pursuit of green authenticity (Azzaz et al., 2024), defined by the genuine alignment between marketing signals and the organization’s core cultural and operational values.

From a behavioral logic perspective, the research landscape is structured around a causal chain anchored in trust, given the intangible nature of hospitality services and the difficulty of verifying sustainability claims prior to consumption, marketing functions as a proxy signal of credibility (Seyfi et al., 2025). However, the paradox of greenwashing arises when such signals are unsubstantiated, leading to a trust deficit that undermines brand credibility and the positive effects of green image (Brañes et al., 2025). Consequently, hospitality firms must transform green marketing from a promotional mechanism into a trust-building system, leveraging Green Marketing Innovation—including big data analytics and social commerce—to provide verifiable evidence of sustainable performance (Mohammad et al., 2024; Qin et al., 2025). In this logic, customer loyalty and repurchase intention are less responses to “green products” and more reflections of the perceived authenticity of a firm’s environmental commitment (Fang & Zaman, 2025; Mawardi et al., 2024).

Analytically, recent studies (2024–2025) reveal growing integration between digital technology and green marketing communication. Within the Stimulus–Organism–Response (SOR) framework, digital tools—particularly Augmented Reality (AR)—are conceptualized as stimuli that enhance the tangibility of sustainability experiences (Aggag & Kortam, 2025). Rather than promoting products, these tools curate immersive eco-experiences, allowing guests to visualize environmental impact before consumption. This evolution signals a broader transformation toward data-driven and experiential sustainability marketing, replacing static green labels with interactive narratives (Qin et al., 2025).

Theoretical Implications and the Integrated Framework

The synthesis of findings points to the emergence of a multi-dimensional theoretical paradigm that transcends linear models such as the basic Theory of Planned Behavior (TPB). The proposed Integrated Green Hospitality Marketing Framework (IGHMF) conceptualizes green marketing as a strategic moderator within a systemic structure combining: Psychological values (e.g., biospheric and moral norms); Market signals (e.g., perceived authenticity and brand trust); and Technological enablers (e.g., AR, Big Data). In this framework, green marketing functions as a double-edged construct: it amplifies trust and loyalty when authentic, but triggers skepticism when inconsistent or superficial. The IGHMF, therefore, advances existing models by integrating cognitive, affective, and technological pathways to explain how sustainability communication translates into behavioral and strategic outcomes.

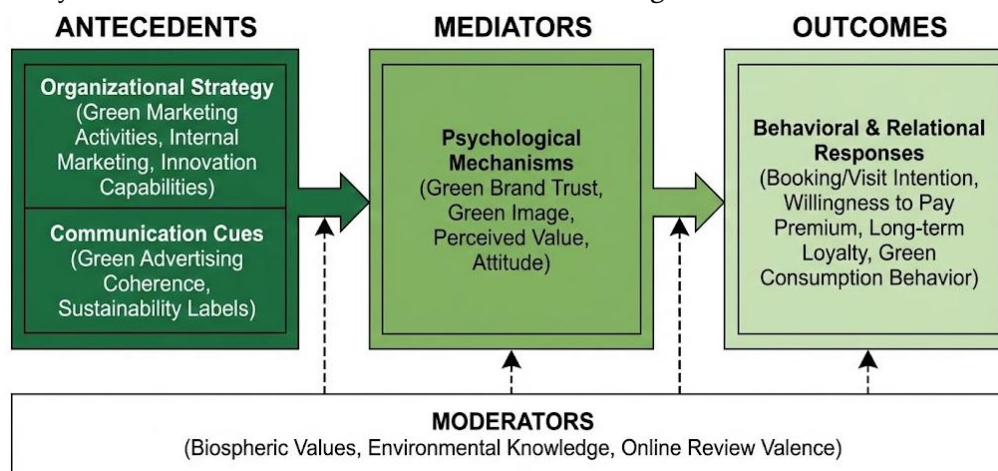


Figure 6. Antecedents, Mediators, Outcomes, and Moderators of GMR (2020-2025)

Source: Research data, 2025

Future Research Agenda

Building upon the theoretical synthesis, future research should pursue empirical validation and theoretical refinement of the IGHMF across diverse contexts and timeframes:

1. **Behavioral Realism:** Move beyond self-reported intentions by employing objective behavioral data (e.g., resource consumption metrics) to validate the actual impact of sustainability communication.
2. **Technological Ethics:** Examine whether digital tools such as AI and AR genuinely enhance environmental awareness or merely perpetuate new forms of “digital greenwashing.”
3. **Cross-Cultural Testing:** Given the current dominance of Asian case studies, conduct longitudinal and cross-cultural analyses comparing Global North and South contexts to assess the cultural contingency of trust and authenticity mechanisms.
4. **Strategic and Financial Outcomes:** Explore the long-term relationship between green authenticity and firm performance (e.g., ROI, brand equity), reframing sustainability as a strategic investment rather than an ethical obligation.

Such inquiries can shift the academic discourse from questioning whether green marketing works to uncovering the systemic conditions under which it creates enduring value for firms, consumers, and the environment alike.

E. CONCLUSION

This systematic literature review offers a comprehensive synthesis of green marketing research in the hospitality industry published between 2020 and 2025, based on 82 peer-reviewed journal articles. By systematically mapping publication trends, thematic clusters, theoretical foundations, and research gaps,

this study provides an integrated overview of how sustainability-driven marketing has evolved in the post-pandemic hospitality context.

The findings indicate a substantial escalation in scholarly attention after 2020, coinciding with the sector's strategic repositioning toward the Sustainable Development Goals. A marked geographical realignment is also evident: emerging Asian economies—particularly Indonesia and China—have become the intellectual epicenters of hospitality sustainability research. This trend reflects both the economic centrality of tourism in these regions and the urgency of addressing environmental challenges associated with rapid development. The intellectual landscape of the field is structured around three dominant research streams: Guest Psychological Responses (trust, satisfaction, and behavioral intention), Strategic Green Branding (innovation, brand image, and internal culture), and Digital Operationalization (the integration of AR, AI, and Big Data in sustainability communication).

Collectively, these streams demonstrate that green marketing has transcended its promotional origins to become a strategic and technological capability embedded in organizational identity. The theoretical synthesis confirms the enduring relevance of the Theory of Planned Behavior (TPB) and the Stimulus–Organism–Response (SOR) models, while also revealing their integration with Signaling Theory and emerging constructs such as Green Authenticity and Digital Engagement. These developments culminate in the proposed Integrated Green Hospitality Marketing Framework (IGHMF), which conceptualizes green marketing as a strategic moderator that can amplify or erode consumer trust depending on perceived authenticity.

From a theoretical perspective, this study contributes by articulating a multi-level, integrative framework linking consumer psychology, organizational capability, and digital transformation. Practically, it highlights that authentic, data-driven sustainability communication is essential for cultivating long-term guest loyalty and market resilience. Looking forward, future research should move beyond intention-based measures toward the examination of actual sustainable behaviors, cross-cultural verification of trust mechanisms, and the ethical integration of digital technologies in marketing. Addressing these gaps will enable the field to transition from evaluating whether green marketing works to understanding how and under what systemic conditions it generates enduring value for the planet, the guest, and the firm.

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