

This is the accepted manuscript of the article:

Nicolau, J. L., Sharma, A., & Ruiz-Moreno, F. (2025). marketing science applications in tourism and hospitality research. *Journal of Travel & Tourism Marketing*, 42(5), 535-540.

## Editorial

### Special Issue: Marketing Science Applications in Tourism and Hospitality Research

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#### 1. Introduction: Why this special issue, why now?

The tourism and hospitality industry stands at the confluence of several factors that determine marketing as both a discipline and a practice. Digitalization (Li et al., 2024), real-time data flows (Stylos et al., 2025), and experiential consumption (Hung et al., 2024) have created an environment where consumer decisions are increasingly dynamic, personalized, and data-mediated (Teepapal, 2025; Theodorakopoulos & Theodorakopoulos, 2024). These characteristics make tourism and hospitality an ideal context for the application—and advancement—of marketing science.

This special issue of the *Journal of Travel & Tourism Marketing* emerges at a pivotal moment. As the Marketing Science Institute emphasized in its 2022–2024 Research Priorities, firms and scholars alike are facing new questions about how to deploy advanced analytics, navigate privacy constraints, measure short- and long-term marketing performance, and deliver stakeholder value amid social and technological disruption (Marketing Science Institute, 2022). These priorities point out a broader transformation in the marketing field—one that is in line with the needs and complexities of the tourism industry.

Yet alongside this opportunity lies a persistent challenge: the gap between academic research and managerial practice. As Schauerte et al. (2023) argue, much marketing research struggles to deliver on its promise of managerial relevance, which sometimes falls short in terms of credibility, transferability, or usefulness. Schauerte et al.'s (2023) framework defines managerial relevance as a research project's potential to influence managerial decision-making or thinking, and identifies six essential properties: interestingness, importance, credibility, transferability, applicability, and effectiveness. Certainly, these dimensions provide a critical perspective for assessing marketing research—not just for what it explains, but for what it empowers managers to do and, sometimes even more importantly, how to think differently.

This special issue answers the call for more relevant and managerially useful marketing science. The 13 articles selected demonstrate how tourism and hospitality scholars are leveraging advanced methods (from machine learning to neurophysiological measurement) to address real problems in forecasting, personalization, branding, or optimization. Each article not only contributes to academic theory but also offers insight into managerial questions that help determine the future of travel, lodging, and destination marketing.

#### 2. The evolution of marketing science and its role in tourism and hospitality

Marketing science has long been concerned with bridging the rigor of academic research and the realities of marketplace decision-making. In this context, Sudhir (2016) and Toubia (2022)—

former editors of *Marketing Science*—claim that over the past two decades, this pursuit has deepened and expanded, driven by the increasing availability of data, the rise of algorithmic decision tools, and an intensified demand for managerial accountability. As articulated by these authors, the field has evolved from building internally valid models to emphasizing externally useful and interdisciplinary solutions. Derived from this discussion by Sudhir (2016) and Toubia (2022), we identify three key shifts that characterize this evolution: i) there has been a movement from abstract modeling to empirical realism. Marketing scientists are now prioritizing questions grounded in real behavior, real environments, and real constraints; ii) there is a growing openness to interdisciplinary integration—drawing on insights from psychology, neuroscience, operations, and computer science to enrich marketing theory and tools; and iii) there is a renewed commitment to dual-impact research: work that advances scholarly understanding while remaining responsive to practitioner needs.

These shifts position tourism and hospitality not as peripheral application areas but as core fields for advancing marketing science. The industry offers a unique testing ground, characterized by travelers who are digitally connected, experience-driven, and increasingly sensitive to sustainability (Manthiou et al., 2025; Yong et al., 2024), personalization (Lei et al., 2024), and peer influence (Huang et al., 2025). Tourists today move across platforms, interact with brands before, during, and after their trips (Nicolau et al., 2025), and make decisions influenced by factors such as dynamic pricing (Abrate et al., 2019) and social validation (Wibisono and Lake, 2024). Precisely, these conditions reflect the very complexities marketing science seeks to understand. Moreover, tourism organizations (from hotels and airlines to destination management organizations and platforms) generate large volumes of behavioral data and must make quick, high-frequency marketing decisions in dynamic global environments. In a way, and putting a positive spin on this frenzy, this environment creates the empirical richness and managerial urgency that marketing science thrives on.

At the same time, the tourism and hospitality field has embraced methodological pluralism (Christofi et al., 2024), technological innovation (Wang et al., 2024), and stakeholder-driven marketing strategies (Nicolau & Sharma, 2022a)—echoing the very directions that marketing science is moving toward. Whether through AI-enhanced forecasting (D.C. Wu, et al., 2025), multi-method consumer research (Stangl et al., 2024), or behavioral experiments on emerging platforms (Nicolau & Sharma, 2022b; Sharma et al., 2020), tourism scholars are increasingly at the vanguard of marketing science applications.

This special issue reflects that trajectory as the articles presented here do not merely adopt marketing science tools; rather, they adapt and extend them to address the industry's unique challenges and opportunities. In doing so, they help reduce the artificial boundary between tourism scholarship and mainstream marketing science, demonstrating the mutual value of deeper integration.

### **3. Emerging trends in marketing science applications**

The articles in this special issue exemplify the evolving character of marketing science as applied to tourism and hospitality. Their diversity—in method, topic, and context—is unified by a shared commitment to rigorous analysis, theoretical contribution, and managerial implications. From this perspective, four key trends emerge; trends that are not only reflective of broader developments in the marketing discipline but also illustrate how tourism and hospitality research is helping lead the charge in marketing science innovation.

*1. Predictive intelligence and algorithmic personalization.* Advancements in machine learning and artificial intelligence have revolutionized how firms model and respond to consumer behavior (Liu et al., 2023; Liu et al., 2025; X. Wu et al., 2025; Xu et al., 2025). In tourism and hospitality, where booking behavior, demand fluctuations, and service personalization are daily challenges, these tools offer significant value (Rekiek et al., 2024). Several papers in this issue demonstrate how predictive models, including neural networks, tree-based algorithms, and spatiotemporal graph learning, can improve demand forecasting, customer targeting, and travel management. These applications illustrate the change from descriptive analytics toward prescriptive and adaptive decision-making systems, in line with the Marketing Science Institute's call for better decision support given the vast availability of consumer data.

*2. Methodological pluralism and model triangulation.* A second trend is the increasing use of hybrid methodological approaches that blend statistical modeling with configurational logic, machine learning with structural modeling, or quantitative inference with qualitative depth. These plural strategies enhance robustness, accommodate complexity, and help reconcile divergent approaches within the field. Articles in this issue combine partial least squares structural equation modeling with fuzzy-set qualitative comparative analysis, compare partial least squares structural equation modeling with artificial neural networks, and extend adoption models using both survey and experimental data. This framework reflects a broader movement toward model triangulation and analytic complementarity (what Toubia (2023) emphasizes as a commitment to work that is not only methodologically sound but also novel and useful) welcoming diverse approaches that balance rigor with relevance.

*3. Emotion-driven marketing and neurotourism.* In service industries such as tourism and hospitality, where emotional responses are central to experience value, marketers increasingly seek tools that go beyond stated preferences or transactional data. A growing body of work applies neurophysiological and psychometric techniques, such as electroencephalography, galvanic skin response, eye-tracking, or digital emotion analysis, to uncover subconscious reactions to marketing stimuli. In this issue, papers analyze the affective engagement of travelers with promotional videos, social media content, and virtual interfaces. These contributions signal a trend toward emotion-driven marketing and highlight the potential of neuroscience-informed methods in capturing refined consumer responses in digitally mediated environments.

*4. Systems thinking and strategic optimization.* Finally, several papers in the issue adopt a systems perspective, addressing questions of resource allocation, operational optimization, and network-level coordination. A systems-oriented approach considers how marketing outcomes emerge from the interaction of multiple interconnected elements, such as firms, consumers, technologies, and institutions, within a broader strategic and operational ecosystem. This approach includes not only formal optimization models but also the design of decision environments and the management of large-scale content systems. Whether optimizing ecotourism supply chains, analyzing the construction of destination image through unsupervised learning on user-generated content, or experimentally evaluating how variety and cognitive load affect destination choice behavior, these studies reflect a growing recognition that marketing effectiveness often depends not just on individual consumer responses, but on how complex systems are designed and managed. These approaches echo Marketing Science Institute's emphasis on long-term value creation and strategic alignment, extending marketing science beyond the consumer-firm dyad to include multi-level, multi-stakeholder systems.

Each of these trends offers a different perspective on how marketing science is evolving, and on how tourism and hospitality research can benefit from and contribute to this evolution. In the next section, we introduce the 13 articles included in this special issue and show how they exemplify these themes.

#### **4. Overview of the articles**

Organized around the four emerging trends in marketing science applications, the 13 articles featured in this special issue showcase methodological diversity and conceptual coherence. Each paper offers a rigorous, contextually grounded contribution to our understanding of marketing in tourism and hospitality. As a whole, they demonstrate how research in this field is increasingly in line with the most current priorities in marketing science.

##### *Trend 1: Predictive intelligence and algorithmic personalization*

Stüttgen (2025) develops a mixture of neural networks to improve hotel booking predictions on Expedia.com, outperforming standard models and simulating up to 9% gains in bookings through optimized hotel listings. The study advances non-linear, user-specific decision modeling in online travel search environments. Wang et al. (2025) introduce a spatiotemporal graph convolutional network to forecast high-frequency (15-minute) tourism demand across 134 attractions. By incorporating peripheral surroundings, the model enhances predictive accuracy and destination planning capacity. He et al. (2025) combine push-pull motivation theory with tree-based machine learning models using search index data to forecast tourism demand. The paper bridges behavioral theory and data science, offering more interpretable and accurate forecasting tools. Lei et al. (2025) use deep learning models (recurrent neural network, long short-term memory, convolutional neural network) to predict medical tourism demand based on search queries. Their findings show that health-related online behavior can serve as a reliable predictor of cross-border travel intent. Rodrigues et al. (2025) apply machine learning classification models to predict customer behavior at key hotel touchpoints—cancellations, upsells, and rebookings—based on customer travel data. The results support precision marketing interventions to enhance lifetime value.

##### *Trend 2: Methodological pluralism and model triangulation*

González-Rodríguez et al. (2025) use a hybrid method combining partial least squares structural equation modeling and fuzzy-set qualitative comparative analysis to analyze how information quality, recommendation valence, and sensation-seeking influence reuse intentions in 360° virtual tours. Their results support both linear and configurational perspectives on technology adoption. Liébana-Cabanillas et al. (2025) compare artificial neural networks and structural equation modeling to model how destination image, perceived quality, interactivity, and ease of use influence destination selection. Artificial neural networks outperform structural equation modeling in predictive accuracy, revealing complex non-linear effects. Choudhary et al. (2025) apply the value-based adoption model and structural equation modeling to study how virtual reality content richness has an influence on perceived value and behavioral intention in rural tourism. The study highlights the strategic role of immersive media in promoting underdeveloped destinations.

##### *Trend 3: Emotion-driven marketing and neurotourism*

Luo et al. (2025) draw on dual-coding theory to analyze the verbal and visual components of tourism-related tweets during COVID-19. Using text mining and image classification, they find that nature imagery and certain textual themes increase engagement, while promotional content suppresses it. Costa-Feito et al. (2025) employ electroencephalography and galvanic skin response

to investigate tourists' cognitive and emotional responses to urban promotional videos. The study confirms an “emotional paradox” in video marketing: simultaneous experiences of joy and stress, moderated by video length and content type.

#### *Trend 4: Systems thinking and strategic optimization*

Hosseini et al. (2025) develop a tri-level mathematical optimization model for ecotourism supply chains, integrating outsourcing, discount strategies, and advertising decisions. Solved using a hybrid metaheuristic algorithm, the model supports profit and sustainability goals in ecotourism management. Turpo et al. (2025) apply unsupervised learning (topic modeling and image clustering) to TikTok promotional content. Their analysis uncovers dominant themes of authenticity and community life, providing a scalable method for assessing video-based destination image. Vieira et al. (2025) conduct an experimental study to examine how choice set size and confusion affect destination selection. Their findings show that while variety increases satisfaction, excessive options induce confusion and promote reliance on default choices—underscoring the paradox of variety in travel marketing.

### **5. Implications and closing reflections**

The articles in this special issue show that tourism and hospitality research is not a mere beneficiary of marketing science, rather, it is an active contributor to its advancement. These studies showcase how scholars in this domain are taking advantage of cutting-edge methods and addressing timely managerial problems, thereby generating insights with theoretical and practical relevance.

From a theoretical viewpoint, these papers illustrate how marketing science can be enriched through applications in complex service settings. They reveal how the combination of hybrid methods and behavioral theory can produce a refined understanding of consumer decision-making, platform dynamics, and strategic interaction. From a practical perspective, the issue responds directly to calls for more managerially relevant research. Echoing the criteria articulated by Schauerte et al. (2023), the articles demonstrate interestingness, importance, credibility, transferability, applicability, and effectiveness. Whether helping hoteliers optimize customer trips, guiding destination managers in virtual promotion, or enabling policy planners to better anticipate tourism flows, these studies offer tools and frameworks that are not only insightful but usable.

Finally, this special issue invites a broader rethinking of where marketing science delivers its greatest value. The tourism and hospitality industry—once seen as a context for applied extensions—is now a leading domain for new methods, new theories, and new forms of relevance. This transformation is in line with the vision laid out by the *Marketing Science* editorials and Marketing Science Institute priorities: research that is rigorous, interdisciplinary, and consequential. As tourism and hospitality researchers, we are positioned to make the most of this transformation, allowing us to draw on the richness of our contexts and the immediacy of our industry's challenges.

It is our hope that this special issue will serve as both a reference and a catalyst—for scholars seeking methodological inspiration, for practitioners in search of managerial insight, and for future research that bridges theory and practice in service of more sustainable and intelligent marketing systems.

We are deeply grateful to the authors for their thoughtful and innovative contributions, and we sincerely thank the reviewers whose careful feedback and generous support made this issue possible.

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