AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

THE ROLE OF ARTIFICIAL INTELLIGENCE AND SMART TECHNOLOGIES IN ENHANCING TOURIST EXPERIENCE AND DESTINATION MANAGEMENT

https://doi.org/10.5281/zenodo.19132779

Abbos Mamatkulov
Tourism Researcher & International Business Specialist
Master of Business Administration (Candidate), International Business, Lincoln University
Bachelor of Business Administration in Tourism, ISMA University of Applied Science

Abstract

Artificial intelligence (AI) and smart tourism technologies are reshaping how tourists search, plan, and experience travel, and how destinations manage visitor flows, service quality, and resource constraints. Policy institutions highlight both the opportunity and risk of AI: it can promote innovation and sustainable tourism development, but demands robust governance (data protection, consumer protection, and ethical diffusion). In parallel, foundational smart tourism research defines smart tourism as the increasing reliance of destinations, industries, and tourists on ICT that transforms large volumes of data into value propositions, while also emphasizing the need for conceptual clarity and governance readiness.

This paper develops an evidence-informed framework linking AI capabilities (prediction, personalization, automation, optimization) to destination management outcomes (experience quality, operational efficiency, resilience, and sustainability), while specifying governance requirements for responsible deployment. The methodology is an integrative review of primary policy sources (OECD AI policy paper; ITU smart tourism frameworks; EU smart tourism guidance) and peer-reviewed literature (systematic reviews and conceptual foundations). Illustrative destination vignettes show how AI-enabled customer service, visitor flow analytics, and open data platforms can improve the tourist experience, but also introduce risks of algorithmic opacity, bias, and privacy harm if deploy without accountability. The paper concludes with a destination AI governance checklist and an empirical follow-up agenda with suggested datasets and partners.

Keywords

Artificial intelligence; smart tourism; destination management; personalization; visitor flow management; open data; governance; data ethics; generative AI; tourism technology

AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

Introduction

Tourism is an information-intensive sector in which search, trust, and coordination costs heavily shape consumer choices and operational efficiency. Longstanding eTourism scholarship argues that ICT and online channels transformed tourism's competitive environment and industry structure over a relatively short period. Over the last few years, the next layer of transformation has increasingly been framed around AI especially machine learning, natural language processing, and generative AI embedded into travel search, planning, customer service, forecasting, and operational decision systems.

Policy sources explicitly recognize the dual character of this shift. The OECD's G7 policy paper on AI and tourism describes AI as a tool for innovation and sustainable tourism development, while also emphasizing governance needs and risks affecting tourists, businesses, destinations, and governments. Industry reporting similarly suggests that AI is affecting discovery and booking and may advantage actors that "own" the process and can personalize at scale, while also noting that the industry remains in a phase of learning and uneven adoption.

Simultaneously, the "smart tourism" concept seeks to explain how destinations use ICT and data infrastructures (sensors, apps, conversational agents, platforms) to improve decision-making, visitor experience, sustainability, and resident quality of life. The ITU's smart tourism guidance frames smart tourism as a pathway to more secure, resilient destinations and emphasizes that technology must be paired with governance and ecosystem development.

This paper asks: How do AI and smart technologies reshape (1) tourist experience design and (2) destination management capacity, and what governance arrangements are required for responsible scaling?

Literature review

Smart tourism foundations and destination systems

Smart tourism is often defined as the increasing reliance on ICT that enables massive data to be transformed into value propositions for destinations, industries, and tourists, while noting that the concept remains under-defined if governance and theory are not developed. A central implication is that smart tourism is not "one technology," but a socio-technical system combining data generation, data integration, service design, and feedback loops.

Institutional frameworks operationalize this. The ITU's smart tourism report argues that digitization and technology can support resilience, competitiveness, and sustainability, and provides practical recommendations for establishing destination frameworks and platforms. The EU smart tourism destinations guide

similarly defines a smart tourism destination in ecosystem terms, emphasizing stakeholder coordination and ICT-based solutions to improve sustainability and accessibility while leveraging destination assets.

AI in tourism: use cases, maturity, and constraints

A recent systematic review in *Frontiers in Artificial Intelligence* describes AI as increasingly integrated in tourism to optimize operations, personalize customer experiences, and improve resource management, while mapping benefits and challenges across processes and technologies. Complementary industry reporting indicates that AI use cases being scaled include pricing, forecasting, and customer service, and that the central challenge shifts from "adoption" to "governance, trust, and scaling."

Generative AI is a particularly salient emerging layer. A 2025 *Tourism Management* review indicates that tourism is still early in understanding and applying generative AI and calls for comprehensive knowledge of its state and research roadmap.

Open data and "data spaces" as innovation infrastructure

Smart destinations generate multidimensional data through IT (sensors, applications, conversational agents). A 2026 study argues that unlocking value requires not only open data strategy but sustainable implementation: the paper frames opportunities and barriers for smart destinations as open data providers. Policy guidance on resilient destinations similarly emphasizes more timely, granular data development and data-sharing frameworks (including open data initiatives) for decision-making.

Governance: ethical, privacy, and consumer protection requirements

The OECD AI policy paper stresses both opportunities and risks and highlights that governance measures including robust data and consumer protection are central as AI becomes embedded into tourism experiences and business operations. This aligns with broader destination governance needs identified in smart tourism frameworks, which treat technology as inseparable from policy, institutions, and human capital.

Theoretical framework

This article adopts a capability–governance framework: destinations achieve performance gains from AI when they (a) build capabilities across a data-to-decision pipeline and (b) maintain legitimacy via governance safeguards.

Capability layer (AI-enabled destination management loop)

1. Sense: collect data (mobility, bookings, reviews, service performance).
2. Predict: forecast demand, congestion, and service loads (AI).

AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

3. Personalize: tailor information and recommendations to improve experience.

4. Optimize: apply resource and flow controls (timed entry, routing, staffing).

5. Learn: update models with feedback (continuous improvement).

Governance layer (responsible scaling requirements) AI impacts tourists and residents through data use, pricing, access, and information presentation, requiring privacy protection, transparency, consumer protection, and accountability mechanisms.

Methodology

This is an integrative review and framework development study with no original field experiment. It synthesizes:

- OECD AI and tourism policy paper (opportunities/risks, governance needs).
- Smart tourism institutional frameworks (ITU smart tourism report; EU guide).
- Peer-reviewed foundations and reviews (smart tourism conceptual foundations; AI systematic review; generative AI roadmap paper).
- Illustrative examples from practitioner-oriented sources (clearly labeled as illustrative; used to motivate use cases, not to claim causal effects).

Data and case examples

Case vignette one: AI-driven visitor service across the journey (illustrative)

Illustrative destination deployment: a multilingual AI concierge integrated into official destination channels (website/app), providing itinerary planning, accessibility guidance, and real-time alerts. This aligns with AI tourism use cases (NLP, conversational agents) described in systematic reviews and smart tourism frameworks.

Empirical caution: while industry articles report changes in travel planning features, they also note that AI has not yet transformed planning for most travelers, implying uneven adoption and a need to test actual usage and satisfaction outcomes.

Case vignette two: Capacity management via smart destination platforms (policy and best-practice grounded)

EU smart tourism programs and best-practice reporting highlight destination initiatives across digitalization, sustainability, and accessibility (e.g., city-level practices compiled through European smart tourism initiatives). These initiatives illustrate the operational logic of smart tourism: real-time information, improved accessibility, and data-informed management.

AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

A destination can extend this with AI demand forecasting to anticipate peaks and implement visitor dispersion tactics. This is consistent with AI-in-tourism review findings that AI supports forecasting and operations optimization.

Case vignette three: Open data innovation ecosystem (research grounded)

A 2026 peer-reviewed study argues that smart destinations generate multidimensional data and explores barriers/opportunities to becoming open data providers, implying that open data can be an innovation lever but requires sustained implementation and governance. This supports a strategic approach where destinations publish non-sensitive datasets (flows, events calendars, accessibility inventories) and enable SMEs and startups to build visitor services.

Findings and analysis

Finding one: AI strengthens destination competitiveness only when embedded in a smart tourism system

Smart tourism research emphasizes that data and ICT must be transformed into value propositions; otherwise "technology adoption" remains fragmented and fails to translate into better experiences. AI tools can make this transformation more powerful improving prediction, personalization, and optimization but they still depend on data infrastructure and coordinated governance.

Finding two: The dominant scaling problem is shifting from technical feasibility to governance and trust

OECD framing explicitly highlights AI's risks and governance needs (data and consumer protection, impacts on stakeholders). Industry reporting similarly argues that scaling AI in travel now hinges on governance, trust, and scaling without costly mistakes, rather than on mere adoption. This convergence suggests that destinations must treat AI governance as a core management function rather than an afterthought.

Finding three: Open data strategies can move destinations from "AI consumers" to "innovation platforms"

The open data provider literature indicates that smart destinations generate extensive data but need sustainable open data implementation; the opportunity is to create value via ecosystem innovation and transparency, not merely compliance. OECD resilience guidance also favors timely granular data and open data initiatives and data-sharing frameworks to support decision-making and resilience.

Finding four: Generative AI expands experience design and communication capacity but increases risk exposure

The Tourism Management integrative review of generative AI indicates tourism is early in understanding its application and calls for broader knowledge

development. Generative AI can enhance dynamic content, multilingual communication, and agent-like trip support, but increases risk exposure (hallucinations, bias, opaque recommendations) requiring policy-aligned safeguards consistent with OECD governance emphases.

Strategic, policy, and managerial implications

Destination strategy: build an "AI-ready destination operating model." Adopt a phased maturity path: data governance → analytics capability → AI services → continuous improvement, aligned with smart tourism frameworks emphasizing resilience and sustainability.

Governance: formalize responsible AI controls. Establish privacy, model monitoring, and consumer protection measures consistent with OECD policy recommendations; require transparency in automated decision systems affecting access, pricing, or information visibility.

Operational planning: prioritize use cases with measurable ROI and low harm risk.

Industry sources suggest pricing, forecasting, and customer service are among the AI use cases being scaled; these can be evaluated through measurable KPIs and A/B testing where feasible.

Ecosystem strategy: invest in open data and partner innovation. Open data can support SME innovation and improve transparency but requires sustained implementation and governance to avoid one-off releases.

Conclusion

AI and smart technologies can enhance tourist experience and destination management through the integration of sensing, prediction, personalization, optimization, and learning yet their competitive impact depends on governance capacity. Policy and research sources converge on the insight that the major constraint to scaling is increasingly governance and trust, not only technology availability. For destinations, the strategic task is to build a smart tourism system where AI is embedded in accountable, transparent institutions that protect tourists and residents while improving service quality and sustainability outcomes.

s

Buhalis, D., & Law, R. (2008). eTourism transformation. *Tourism Management*.

Gretzel, U. et al. (2015). Smart tourism systems. *Electronic Markets*.

López-Naranjo, A. et al. (2025). AI in tourism: Systematic review. *Frontiers in AI*.

Li, H. et al. (2025). Generative AI in tourism. *Tourism Management*.

Organisation for Economic Co-operation and Development. (2024). *AI and tourism policy report*.

International Telecommunication Union. (2022). *Smart tourism destinations report*.

European Commission. (2022). *Smart tourism best practices*.

Tussyadiah, I. (2020). AI in tourism and hospitality. *Journal of Travel Research*.