



Artificial Intelligence and Digital Commerce in Tourism: A Bibliometric Review of Intellectual Structure, Emerging Themes and Future Research

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Abstract – Artificial intelligence (AI), platform-based transactions and data-driven service design are changing the way tourism products are discovered, evaluated and purchased. Despite the growing attention paid to digital tourism, research on the intersection of AI and digital commerce remains dispersed across technology adoption, online trust, personalisation, recommendation systems, service quality and destination marketing. This paper develops a bibliometric review framework to map the intellectual structure and thematic development of research on AI-enabled digital commerce in tourism. It proposes a reproducible search and screening protocol using the Web of Science Core Collection and Scopus, with performance analysis, co-citation analysis, keyword co-occurrence and longitudinal thematic mapping conducted through Bibliometrix/Biblioshiny and VOSviewer. The paper sets out research questions, inclusion criteria, data-cleaning procedures and interpretation templates for publication trends, influential sources, collaboration networks and emerging themes. Because no bibliographic export dataset was supplied for this manuscript, numerical findings are not fabricated; all result tables are explicitly designed to be completed after the database search and analysis. The framework contributes a transparent route for synthesising a fragmented research area and identifying evidence-based priorities for tourism businesses, platforms and future scholarship.

Keywords - artificial intelligence; digital commerce; tourism; bibliometric analysis; VOSviewer; Bibliometrix; technology adoption; online trust.

I. INTRODUCTION

Digital commerce has altered how travellers search for information, compare alternatives, reserve accommodation and purchase tourism-related services. Websites and mobile applications have reduced geographical barriers between tourism providers and potential customers, while online reviews and social platforms have become important sources of information during the decision process. Prior research on tourism e-commerce has highlighted technology acceptance, trust, perceived risk, online information and consumer behaviour as recurring areas of inquiry (Buhalis & Law, 2008; Donthu et al., 2021; Hernández-Garrido et al., 2026). The next stage of this transformation is shaped by artificial intelligence.

Recommendation engines, conversational assistants, automated customer support, dynamic pricing, generative content and predictive analytics can support both customer-facing and managerial activities. Yet these applications raise questions about transparency, privacy, reliability, bias and the extent to which automated interactions build or weaken trust. AI-enabled tourism commerce is therefore not only a technology issue; it intersects with consumer psychology, service management, information systems and destination strategy. Research on these issues is likely to be distributed

across multiple disciplines and terminology. Studies may describe similar systems as AI, machine learning, intelligent recommendation, conversational agents, chatbots, algorithmic personalisation or smart tourism. A bibliometric review can help organise this dispersed literature by examining publication performance, intellectual foundations, collaboration patterns, keyword relationships and changes in research themes over time. Bibliometric methods are useful for analysing large bodies of scholarly output and identifying structures that may not be visible through narrative reading alone (Donthu et al., 2021).

Building on the review architecture used by Hernández-Garrido et al. (2026), this paper adapts performance analysis, co-citation mapping, co-word analysis and longitudinal thematic analysis to the intersection of AI and digital commerce in tourism.

It differs in subject focus and proposed research questions. Its empirical claims must, however, be based on a verified bibliographic dataset rather than assumed from the source article.



II. RESEARCH PROBLEM, OBJECTIVES AND QUESTIONS

The main problem is the absence of a clearly consolidated map of the intellectual foundations and thematic evolution of AI-enabled digital commerce in tourism. The review is designed around four objectives: (1) describe the growth and distribution of publications; (2) identify influential documents, sources, authors and collaboration patterns; (3) map the conceptual and intellectual structure of the field; and (4) identify emerging themes and research opportunities.

Research question	Analysis approach	Evidence to report
RQ1. How has scholarly output on AI-enabled digital commerce in tourism developed over time?	Performance analysis	Annual publications, growth pattern, source and country distribution
RQ2. Which publications and intellectual foundations shape the field?	Citation and co-citation analysis	Most-cited documents, co-citation clusters and foundational theories
RQ3. What conceptual themes and relationships dominate the literature?	Keyword co-occurrence / co-word analysis	Keyword clusters, link strengths and thematic groupings
RQ4. How have research priorities changed across periods?	Longitudinal thematic evolution	Motor, basic, niche and emerging/declining themes
RQ5. What gaps can guide future research and practice?	Integrated interpretation	Research agenda linked to evidence from the mapped corpus

III. LITERATURE BACKGROUND

1. Digital commerce in tourism

Tourism services are often intangible and difficult to assess before consumption. Digital platforms address part of this uncertainty by presenting descriptions, images, prices, availability and user-generated evaluations. Online information and reviews influence how travellers compare offers and assess service providers. However, the same environment creates concerns about privacy, fraud, inaccurate claims and information credibility. Trust and perceived risk therefore remain relevant concepts in explanations of online tourism transactions.

2. AI-enabled tourism commerce

AI can influence different stages of the tourism customer journey. Search and recommendation tools help users navigate large sets of alternatives; conversational agents respond to enquiries; predictive systems support demand management and pricing; and generative tools can assist with promotional content. These applications may improve speed and relevance, but their value depends on the accuracy of outputs, usability, transparency and fit with customer needs. The field should therefore be reviewed across both technological and consumer-facing dimensions rather than treating AI adoption as a single outcome.

3. Theoretical lenses

The technology acceptance model (TAM) explains adoption through perceived usefulness and perceived ease of use (Davis, 1989). The theory of planned behaviour (TPB) links intention to attitudes, subjective norms and perceived behavioural control (Ajzen, 1991). The unified theory of acceptance and use of technology (UTAUT) integrates performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al., 2003). Trust and perceived risk are also important in online transactions because consumers cannot fully inspect tourism services before purchase. A bibliometric analysis can identify how often these perspectives are used and whether newer AI-specific frameworks are becoming visible.

4. Research gap

Existing bibliometric work has mapped tourism e-commerce broadly, but a focused review of AI-enabled digital commerce can clarify how AI-related terms intersect with established themes such as trust, technology acceptance, online reviews, personalisation and service quality. The key gap is not simply the absence of AI as a keyword; it is the need to identify whether the literature forms a coherent research stream, which topics are central or peripheral, and how the focus changes across time.

III. METHODOLOGY

1. Research design

A bibliometric review is proposed, combining performance analysis with science-mapping techniques. The workflow follows a transparent sequence: define the review questions; specify databases and search strings; retrieve records; remove duplicates; screen titles, abstracts and document types; clean bibliographic metadata; analyse the final corpus; and interpret maps alongside the underlying papers. The final article should report each stage sufficiently for replication.

2. Database and search strategy

Search the Web of Science Core Collection and Scopus separately, record the exact search date, and export full



bibliographic records with cited references. A suggested search string is provided below and should be adapted to each database's field syntax. Search terms should capture both AI terminology and tourism commerce terminology. Suggested concept structure: ("artificial intelligence" OR "machine learning" OR chatbot* OR "conversational agent*" OR "generative AI" OR "intelligent recommendation" OR "algorithmic personalisation") AND (touris* OR travel OR hotel* OR hospitality OR destination*) AND ("e-commerce" OR "online booking" OR "digital commerce" OR "online purchase" OR "purchase intention" OR "digital platform*").

The search should cover the full available period up to the stated search date. Restricting results to English-language journal articles may improve comparability, but this choice should be justified and disclosed because it can exclude relevant studies in other languages and conference proceedings.

3. Eligibility and screening

Stage	Proposed rule	Required reporting
Identification	Retrieve records from Scopus and Web of Science	Records retrieved from each database and search date
Deduplication	Match DOI, title and author/year; manually inspect uncertain matches	Duplicates removed and records retained
Title/abstract screening	Include research explicitly linking AI/digital intelligence with tourism or travel commerce	Excluded records and exclusion reasons
Full-text eligibility	Confirm topical relevance and scholarly document type	Full-text exclusions with reasons
Final corpus	Analyse only records meeting the pre-defined criteria	Final number of documents and coverage period

A PRISMA-style flow diagram can be included if the screening process follows a systematic review protocol. Bibliometric analysis is not a substitute for screening quality: irrelevant records can distort keyword clusters and citation patterns.

4. Data cleaning and software

Merge database exports only after preserving the original files. Standardise author names, journal titles, keywords and country labels; unify singular/plural and spelling variants where they refer to the same concept; and document every substantive cleaning decision. Use

Bibliometrix/Biblioshiny for descriptive and thematic analysis and VOSviewer for network visualisation. Report software versions, counting method (full or fractional), minimum keyword occurrence thresholds, normalisation method, clustering settings and time slices.

5. Analytical techniques

Performance analysis should describe annual output, leading sources, authors, institutions, countries and citation indicators. Co-citation analysis can identify documents that are frequently cited together and reveal intellectual foundations. Keyword co-occurrence analysis can show conceptual clusters and links among topics. Longitudinal thematic mapping can compare periods and distinguish well-developed themes from central but less developed themes and emerging or declining topics. Network maps should be interpreted alongside actual papers; cluster labels should not be inferred from a visual alone.

V. RESULTS: TABLES FOR EMPIRICAL COMPLETION

The tables below are analysis-ready formats. Since no Scopus or Web of Science export file was provided, the cells are intentionally left as placeholders. They must be populated from the actual dataset; no publication counts, rankings, citation scores or cluster sizes should be invented.

Table 1. Bibliographic corpus profile

Indicator	Value from dataset
Database(s) and search date	To be entered
Search period	To be entered
Records retrieved from Scopus	To be calculated
Records retrieved from Web of Science	To be calculated
Duplicates removed	To be calculated
Records screened	To be calculated
Final documents analysed	To be calculated
Sources / journals	To be calculated
Authors	To be calculated
Keywords	To be calculated

Interpretation guide: This table establishes the scope and reproducibility of the review. The final paper should explain why the corpus is sufficiently aligned with the research questions and disclose the impact of database coverage, language restrictions and document-type filters.



Table 2. Leading sources and documents

Rank	Source/document	Publication count or citations	Metric definition
1	To be calculated	—	Specify source count or citation count
2	To be calculated	—	Specify source count or citation count
3	To be calculated	—	Specify source count or citation count
4	To be calculated	—	Specify source count or citation count
5	To be calculated	—	Specify source count or citation count

Interpretation guide: Publication volume and citation influence are different measures. A source with many papers may not have the highest citation impact, while an older paper may accumulate citations because it has been available longer. Explain which metric is used and avoid treating citations as a direct measure of research quality.

Table 4. Co-citation and intellectual clusters

Cluster	Core references identified by software	Theme label after full-text validation	Interpretation
Cluster 1	To be extracted	To be assigned from evidence	Summarise shared intellectual focus
Cluster 2	To be extracted	To be assigned from evidence	Summarise shared intellectual focus
Cluster 3	To be extracted	To be assigned	Summarise shared

Table 6. Thematic evolution across periods

Period	Motor themes	Basic themes	Niche themes	Emerging/declining themes
Period 1	To be calculated	To be calculated	To be calculated	To be calculated
Period 2	To be calculated	To be calculated	To be calculated	To be calculated
Period 3	To be calculated	To be calculated	To be calculated	To be calculated

Interpretation guide: Compare theme continuity and change across the selected periods. Period boundaries should be justified by corpus size and meaningful changes in publication activity, not chosen solely to produce a preferred narrative. State whether a theme is new, persistent, fragmented or declining based on the actual map.

		from evidence	intellectual focus
Additional clusters	To be extracted	To be assigned from evidence	Validate using the papers

Interpretation guide: A co-citation cluster groups references that the corpus cites together. The cluster name should reflect the shared subject of its core papers, not merely the most frequent keyword. Include representative references and explain how the cluster contributes to the field's theoretical development.

Table 5. Keyword co-occurrence clusters

Cluster	High-frequency keywords	Central relationship	Provisional theme
1	To be extracted from network	To be interpreted	Assign only after inspecting papers
2	To be extracted from network	To be interpreted	Assign only after inspecting papers
3	To be extracted from network	To be interpreted	Assign only after inspecting papers
4	To be extracted from network	To be interpreted	Assign only after inspecting papers

Interpretation guide: Keyword clusters may reveal themes such as technology acceptance, trust and risk, AI-based personalisation, online reviews, or service automation, but these labels are examples rather than findings. The actual labels must be based on the observed network and validation of the papers.

VI. DISCUSSION FRAMEWORK

The discussion should connect the observed bibliometric patterns to the research questions. If technology acceptance forms a central cluster, compare the prominence of TAM, TPB or UTAUT with newer AI-



related explanations. If trust and perceived risk are central, discuss how consumers assess the reliability of platforms, recommendations and automated interactions. If personalisation or conversational AI emerges as a newer theme, examine whether studies focus on customer outcomes, service operations, ethics or commercial performance.

The paper should distinguish three levels of evidence: (1) descriptive results, such as publication counts; (2) network structure, such as co-citation and keyword links; and (3) interpretive conclusions drawn after reading representative papers. Bibliometric centrality or frequency does not establish causal importance. Likewise, a theme's recent appearance may reflect changing terminology or database coverage rather than a complete change in the research field.

Theoretical implications

A verified map can show whether the field remains anchored in established technology-adoption theories or is developing distinct perspectives on algorithmic trust, AI transparency and human–AI service encounters. The analysis can also reveal whether consumer-level, firm-level and destination-level studies are connected or remain separated. Such conclusions should be drawn from cluster content and citation relationships, not assumed in advance.

Managerial and policy implications

Tourism businesses can use the eventual findings to identify which AI applications have received substantial research attention and where evidence remains limited. Potential practical themes include transparent disclosure, privacy safeguards, human escalation for complex customer issues, monitoring recommendation quality and testing whether automation improves rather than harms service experience. Policymakers and platform managers may also benefit from evidence on trust, consumer protection and accountability, provided the review's findings directly support those recommendations.

Limitations and future research

Likely limitations include database coverage, language and document-type restrictions, inconsistent use of AI terminology, citation-age effects and subjectivity in cluster naming. Search strings may omit studies that use alternative labels, while citation-based methods favour older and more visible papers. Future work can complement bibliometric mapping with a systematic content review, meta-analysis where measures are comparable, interviews with tourism businesses, or empirical studies of consumer responses to AI-supported booking and service systems.

VII. CONCLUSION

This manuscript presents a reproducible bibliometric framework for examining AI-enabled digital commerce in tourism. By combining publication performance, co-citation analysis, keyword co-occurrence and thematic evolution, the study can map intellectual foundations and changing research priorities. Its contribution will depend on a transparent search, careful screening, documented data cleaning and evidence-led interpretation. The result tables must be completed from verified Scopus and/or Web of Science exports before the paper is described as an empirical bibliometric study or submitted for publication.

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