



Research Article

Bibliometric analysis of scientific articles on artificial intelligence and tourism: Compliance with Bradford, Lotka and Zipf's Laws

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Abstract

Purpose: This study aims to examine the development of scientific research on artificial intelligence and tourism, focusing on publication patterns, collaboration structures, thematic trends and the conceptual structure of the field.

Design/methodology/approach: Bibliographic data were retrieved from the Scopus database. A total of 1,089 English-language journal articles published between 2001 and 2025 were analysed using Microsoft Excel and Bibliometrix/Biblioshiny. The study included performance analysis, author, institution and country-level collaboration analyses, keyword co-occurrence analysis, thematic and conceptual mapping, three-field analysis and historical citation analysis. In addition, publication sources, author productivity and keyword frequencies were examined according to Bradford's, Lotka's and Zipf's laws, respectively.

Results: The findings reveal rapid growth in scientific output, particularly in recent years, together with a concentration of publications in a relatively small group of journals. Bradford zoning indicates a clear core-periphery structure in publication sources, while the Lotka analysis shows a substantially higher proportion of single-publication authors than predicted by the classical distribution. Keyword and thematic analyses identify artificial intelligence, tourism, ChatGPT, machine learning, generative artificial intelligence and related digital technologies as prominent elements of the field's conceptual structure. The results also indicate increasing thematic diversification and the growing visibility of technology-oriented research topics.

Discussion: By integrating classical bibliometric laws with contemporary science-mapping techniques, this study provides a comprehensive assessment of the structural and conceptual characteristics of artificial intelligence and tourism research. The findings also highlight under-explored areas and offer a basis for future studies examining the evolution of this rapidly expanding research domain.

Keywords: Artificial Intelligence, Bibliometric Analysis, Bibliometrics, Scopus, Tourism

Introduction

Artificial intelligence (AI) has become one of the most influential technological forces reshaping the tourism and hospitality industry. Recent advances in automation, robotics, machine learning and data-driven personalisation systems have substantially transformed the way tourism services are designed, delivered and experienced. These technologies affect not only organisational processes within tourism and hospitality firms, but also tourists' decision-making behaviour, service encounters and overall travel experiences (Tussyadiah, Zach and Wang, 2020; Grundner and Neuhofer, 2021; Knani, Echchakoui and Ladhari, 2022). As digital and physical tourism environments increasingly converge, artificial intelligence is widely regarded as a central driver of innovation, value co-creation and competitiveness throughout the tourist journey.

The tourism sector has traditionally been highly responsive to technological change. Over recent decades, information and communication technologies have become embedded across all stages of the travel process.

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Smart destinations, intelligent reservation systems, mobile applications, virtual and augmented reality tools and data-driven decision-support systems now constitute core elements of contemporary tourism ecosystems (Buhalis et al., 2019; Atar, 2020; Şimşek, 2023). The integration of artificial intelligence has further intensified this transformation by enabling deeper personalisation, supporting the integration of physical and virtual environments and fostering the development of technology-oriented tourism experiences (Grundner and Neuhofer, 2021; Bahtiyar Sarı, 2025). Parallel to these technological developments, academic interest in artificial intelligence in tourism has expanded rapidly, leading to a substantial growth of the scientific literature (Huang et al., 2022). This expanding body of research is characterised not only by a rising number of publications, but also by increasing diversity in research themes, methodological approaches and disciplinary perspectives. Previous studies have explored a wide range of AI-related applications in tourism, including service robots, big data analytics, virtual and augmented reality, demand forecasting and decision-support systems (Mariani et al., 2018; Li and Law, 2020; Knani, Echchakoui and Ladhari, 2022). In addition, bibliometric and systematic review studies have provided valuable insights into the intellectual structure of the field, collaboration patterns and the evolution of research themes (Kırtıl and Aşkun, 2021; Şengel and Işkın, 2024; Çimen and Kutlu, 2025). Despite this growing scholarly attention, existing research remains fragmented in terms of both methodological focus and temporal coverage. Most bibliometric studies rely primarily on descriptive indicators or on a single analytical technique, and frequently focus on limited time periods or specific sub-topics. More importantly, fundamental structural features of the field—such as journal concentration, author productivity patterns and keyword distributions—have rarely been examined through an integrated application of classical bibliometric laws. In particular, the combined use of Bradford’s, Lotka’s and Zipf’s laws to evaluate the maturity, productivity structure and conceptual concentration of artificial intelligence and tourism research remains largely absent from the literature. Consequently, a comprehensive understanding of how scientific knowledge in this rapidly growing field is organised and distributed over time is still limited. To address this gap, the present study conducts a large-scale bibliometric analysis of scientific articles on artificial intelligence and tourism published between 2001 and 2025. Using data retrieved from the Scopus database, 1,089 articles are analysed with the Bibliometrix and Biblioshiny tools. By integrating Bradford’s law to identify core journals, Lotka’s law to examine author productivity patterns and Zipf’s law to analyse keyword frequency distributions, the study offers a holistic assessment of the structural and conceptual evolution of the field. In addition, thematic and conceptual mapping techniques are employed to identify dominant research themes, emerging topics and shifting intellectual trajectories.

This study contributes to the literature in three main ways. First, it provides an up-to-date and large-scale overview of artificial intelligence and tourism research, capturing recent developments such as the growing prominence of generative artificial intelligence and ChatGPT-related studies. Second, it extends methodological practice in tourism bibliometrics by applying classical bibliometric laws in an integrated framework. Third, by revealing thematic clusters and research trajectories, it offers guidance for scholars, practitioners and policymakers seeking to better understand the current state and future direction of AI-driven tourism research. The remainder of the paper is organised as follows. The next section reviews the relevant literature on artificial intelligence and tourism, with particular emphasis on previous bibliometric studies and the theoretical foundations of Bradford’s, Lotka’s and Zipf’s laws. The methodology section then describes the data collection process, the Scopus-based dataset and the analytical procedures employed. The subsequent section presents the empirical findings, followed by a discussion of the results. The final section summarises the main conclusions, outlines the study’s contributions and limitations, and suggests directions for future research.

Literature Review

The rapid integration of artificial intelligence into the tourism industry has generated a growing body of academic research, reflecting both the technological transformation of tourism systems and the increasing strategic importance attributed to intelligent technologies. Artificial intelligence, particularly in the form of automation and robotics, is now widely regarded as a core element shaping the future of tourism and hospitality. Its influence extends beyond organisational processes and operational efficiency, increasingly affecting tourists’ experiences, perceptions and interactions with service providers. Rather than representing a sudden disruption, the integration of artificial intelligence into tourism is generally described as an incremental and cumulative process that gradually permeates all stages of the travel experience. Through the convergence of physical and digital environments, artificial intelligence is expected to facilitate new forms of service innovation, collaborative value creation and enhanced experiential outcomes (Tussyadiah et al., 2020; Grundner and Neuhofer, 2021; Knani et al., 2022). Recent large-scale bibliometric evidence supports this view by demonstrating that digital transformation in tourism driven by artificial intelligence is largely shaped by

technologies such as chatbots, virtual assistants, sentiment analysis, robotics and immersive technologies, which jointly contribute to improvements in operational efficiency, personalised services and sustainability across tourism systems (Chavan, Havale and Khang, 2024).

The increasing scholarly interest in artificial intelligence within tourism is clearly reflected in the rapid growth of empirical research, review articles and bibliometric studies addressing this topic. This expanding literature suggests that the field is gradually moving beyond exploratory research and is beginning to form a more coherent and cumulative body of knowledge (Yu and Schwartz, 2006; Li, Du and He, 2022; Lv, Shi and Gursay, 2022; Xie and He, 2022; Erol, 2025). An examination of the existing literature reveals that artificial intelligence in tourism has been investigated from a wide range of perspectives, using different time frames, data sources and analytical approaches. Mariani et al. (2018), for example, conducted a systematic literature review of 173 publications published between 2000 and 2016 using data from the Web of Science and Scopus databases, with a particular focus on business intelligence and big data applications in tourism. Their findings showed that, despite the increasing adoption of advanced analytical techniques and large-scale datasets, the research landscape remained fragmented and continued to suffer from methodological constraints and limited interdisciplinary integration. More recent evidence based on PRISMA-guided systematic reviews further indicates that, although the adoption of artificial intelligence in tourism is accelerating, implementation practices and conceptual frameworks remain uneven across operational, managerial and strategic domains (López-Naranjo et al., 2025). In a related stream of research, Doborjeh et al. (2021) reviewed 146 articles published between 2010 and 2021 across fourteen selected journals, focusing on prominent artificial intelligence techniques such as neural networks, machine learning and deep learning, and paying particular attention to applications in the health and safety domain. While tourism was not the primary focus of their study, their findings underline the broader applicability and transformative capacity of artificial intelligence technologies across service-based industries. This broader pattern is also evident in tourism-oriented bibliometric mappings, which consistently show similar technological clusters and application areas (Chavan et al., 2024).

Recent studies have continued to broaden the scope of artificial intelligence research in tourism by adopting different review and bibliometric approaches. İnan (2025) provided a comprehensive review of master's theses addressing artificial intelligence applications in tourism and offered insights that are relevant for both academic researchers and practitioners. Bahtiyar Sarı (2025), using data from the Web of Science database, analysed 5,111 research articles published between 1997 and 2025 in order to identify large-scale publication patterns and research trends. Similarly, Erol (2025) examined 509 Scopus-indexed articles to map global research dynamics in artificial intelligence and tourism. Collectively, these studies point to a pronounced and continuous increase in academic interest in this field, particularly in recent years, a trend that is also consistent with the rapid growth reported in recent systematic reviews (López-Naranjo et al., 2025). A number of bibliometric studies have focused specifically on identifying dominant thematic structures and technological applications within artificial intelligence and tourism research. Kırtıl and Aşkun (2021) examined Scopus-indexed publications and highlighted the potential of artificial intelligence to address complex and uncertain problems in tourism contexts. Şengel and Işkın (2024) reported that recent tourism research increasingly concentrates on robotic technologies, service automation, artificial intelligence-based chatbots and large language models such as ChatGPT. Similarly, Çimen and Kutlu (2025) analysed 301 articles indexed in the Web of Science and Scopus databases using VOSviewer and Biblioshiny, revealing the thematic structure and intellectual evolution of research on artificial intelligence and tourism. The dominant thematic clusters identified in their study closely resemble the co-word structures observed in large-scale Scopus-based bibliometric analyses (Chavan et al., 2024). Beyond broad artificial intelligence applications, several studies have concentrated on specific technological domains within tourism. Shin (2022) conducted a systematic review of 189 articles published between 2012 and 2021 using Google Scholar, Scopus, ScienceDirect and Web of Science, with a particular emphasis on service robots and their interactions with customers, managers, employees and wider society. In a similar vein, Wei (2019) analysed 60 publications published between 2000 and 2018 using multiple academic databases, focusing on developments in virtual and augmented reality within tourism and hospitality and examining their implications for user experiences and behavioural outcomes. Together, these studies illustrate the growing methodological diversity and theoretical sophistication of research on emerging technologies in tourism. This trend is further reinforced by recent systematic reviews highlighting the increasing importance of natural language processing, deep learning and generative artificial intelligence applications in tourism and hospitality (López-Naranjo et al., 2025). Big data and analytics have also emerged as central and closely related research streams within the broader artificial intelligence and tourism literature. Li and Law (2020) conducted a bibliometric analysis of 600 articles published between 2008

and 2017 in order to examine the evolution of big data research in tourism and hospitality and to identify shifts in dominant research themes and keyword usage. Knani et al. (2022) analysed 1,035 articles published between 1984 and 2021 using data from both Scopus and Web of Science, while Johnson and Samakovlis (2019) examined 247 articles published between 2000 and 2018 through bibliometric techniques. Similarly, Loureiro, Guerreiro and Ali (2020) reviewed 381 articles published between 1995 and 2019 using Web of Science and Scopus data. Although these studies consistently document a substantial growth in publication volumes, they also highlight the need for more detailed investigations of scientific productivity patterns and knowledge concentration within this expanding research domain.

Despite the substantial increase in bibliometric and review-based studies on artificial intelligence and tourism, the existing literature remains largely focused on descriptive performance indicators, co-word analyses and network-based visualisations. While such approaches are effective in mapping thematic structures, collaboration networks and intellectual linkages, they provide only limited insight into the structural maturity and productivity dynamics of the field. In particular, core issues such as journal dispersion, author productivity distributions and keyword frequency regularities have rarely been examined through the integrated application of classical bibliometric laws. As a consequence, a comprehensive and theory-informed understanding of how scientific knowledge on artificial intelligence and tourism is distributed, structured and consolidated over time is still lacking. In response to this gap, the present study adopts an integrated bibliometric framework based on Bradford's, Lotka's and Zipf's laws. By jointly examining journal concentration, author productivity patterns and keyword distributions, this approach enables a more systematic assessment of the structural characteristics and conceptual concentration of artificial intelligence and tourism research. The following section describes the data sources, analytical procedures and bibliometric techniques employed to implement this integrated and theory-driven framework.

Materials and Methods

Bibliometric analysis is widely recognised as a systematic and quantitative research approach that enables scholars to examine the structure, development and intellectual evolution of scientific fields through large-scale publication data. By relying on objective and replicable indicators, bibliometric techniques facilitate the identification of conceptual patterns, collaboration structures and research trajectories within a given domain (Donthu et al., 2021; Aria and Cuccurullo, 2017; Zupic and Čater, 2015). In recent years, bibliometric analysis has become one of the most frequently adopted methodological tools for synthesising rapidly expanding scientific literatures. Review-of-reviews studies further confirm that bibliometric approaches represent an appropriate and increasingly dominant method for consolidating research on artificial intelligence in tourism and hospitality (Polo-Peña et al., 2025). In the present study, the Scopus database was selected as the primary data source for data collection. Scopus is widely recognised as one of the largest multidisciplinary abstract and citation databases and offers comprehensive coverage of peer-reviewed journals across a broad range of disciplines. In addition to bibliographic information, it provides detailed metadata on authors, institutional affiliations and citation records, which are essential for large-scale bibliometric investigations (Aghaei Chadegani, 2013). The multidisciplinary structure of Scopus is particularly suitable for tourism research, as tourism studies are inherently positioned at the intersection of management, social sciences and technology-related fields (Saraç, 2025). Moreover, Scopus has become one of the most frequently used data sources in tourism and hospitality bibliometric studies due to its wide journal coverage, data reliability, compatibility with commonly used bibliometric software packages and the availability of journal-level indicators (Pehlivanoglu, 2025). An additional practical advantage of Scopus is its capacity to support both forward and backward citation searches, allowing researchers to examine citation relationships across extended time horizons. The bibliometric data retrieved from Scopus were analysed and visualised using the Bibliometrix software package. Bibliometrix is an open-source and comprehensive bibliometric analysis tool designed to support the examination of conceptual structures, collaboration networks and citation relationships within scientific literature (Aria and Cuccurullo, 2017). All analyses were conducted through the Biblioshiny web interface, which operates within the RStudio environment and enables interactive data exploration and visualisation. To initialise the analytical environment, the commands “library(bibliometrix)” and “biblioshiny()” were executed in RStudio, thereby allowing access to the full range of functions provided by the Bibliometrix package (Airyalat, Malkawi and Momani, 2019). Previous studies in tourism and hospitality research have demonstrated the suitability of combining Scopus-based datasets with Bibliometrix, Biblioshiny and complementary tools such as VOSviewer to conduct transparent, reproducible and visually informative bibliometric analyses, particularly in the context of artificial intelligence research (Kumar, Shandilya and Choudhuri, 2023).

The primary objective of this bibliometric investigation is to identify both the research trends and the structural characteristics of scientific publications addressing artificial intelligence and tourism. Accordingly, the study examines publication patterns over time, citation structures, leading journals, productive authors, institutional contributions, country-level participation and collaboration networks, as well as dominant thematic areas and potential research gaps within the existing literature. In line with this objective, the present study formulates a comprehensive set of research questions that guide the analytical process and ensure systematic coverage of the main bibliometric dimensions of the field. As the study relies exclusively on secondary data obtained from publicly accessible academic databases and does not involve human participants or personal data, formal ethics committee approval was not required. Within this methodological framework, the following research questions were formulated:

- What are the general bibliometric characteristics of research on artificial intelligence and tourism?
- How has the annual scientific output on artificial intelligence and tourism evolved over time?
- How have average citation counts of artificial intelligence and tourism publications changed over time?
- Which journals are the most productive in artificial intelligence and tourism research, and how is the literature distributed according to Bradford's Law?
- Who are the most productive authors in artificial intelligence and tourism research?
- Which institutions contribute most extensively to artificial intelligence and tourism research?
- Which publications on artificial intelligence and tourism have received the highest global citation counts?
- Which countries contribute most extensively to artificial intelligence and tourism research?
- Which subject areas are most prominently represented in artificial intelligence and tourism research?
- To what extent does author productivity in artificial intelligence and tourism research correspond to the distribution described by Lotka's Law?
- What are the most frequently occurring author keywords in artificial intelligence and tourism research, and to what extent does their distribution resemble Zipf's Law?
- How have the main research topics in artificial intelligence and tourism evolved over time?
- What patterns of keyword co-occurrence characterize artificial intelligence and tourism research?
- What are the main thematic clusters and their structural positions within artificial intelligence and tourism research?
- What conceptual structure emerges from the conceptual structure analysis of artificial intelligence and tourism research?

Although bibliometric techniques are increasingly employed in research on artificial intelligence and tourism, recent synthesis studies indicate that a substantial proportion of existing work remains largely descriptive in nature. This observation further reinforces the need for more theory-informed and structurally oriented bibliometric approaches, particularly those that explicitly incorporate classical bibliometric laws and complementary science mapping techniques (Polo-Peña et al., 2025).

Findings

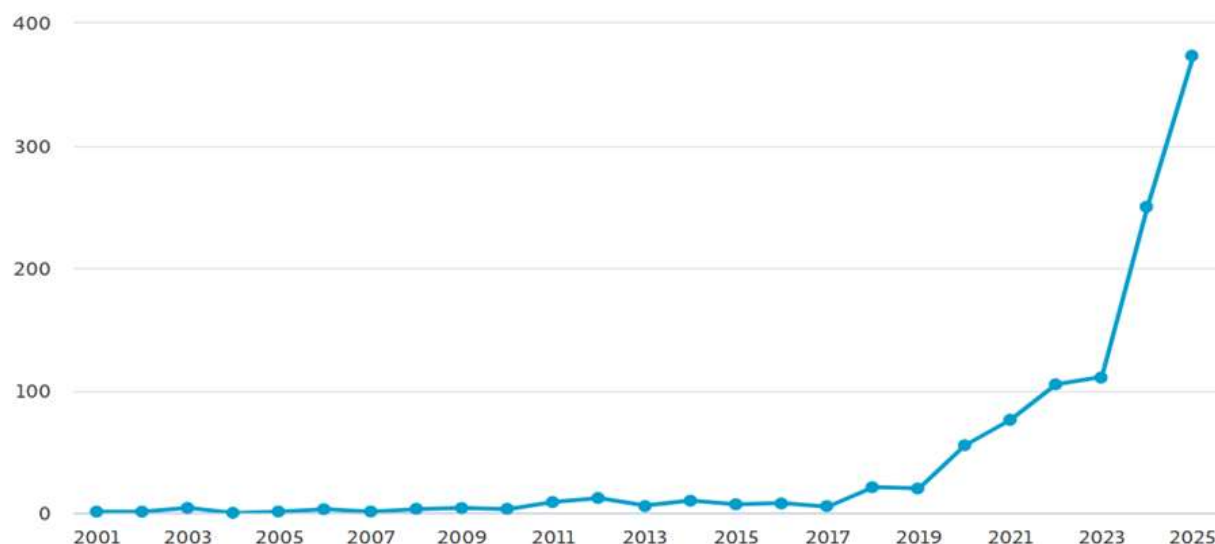
The findings reported in this study are based on bibliometric analyses conducted using the Bibliometrix package. Articles related to artificial intelligence and tourism were retrieved from the Scopus database through a systematic search of titles, abstracts and keywords. The final dataset consists of journal articles published between 2001 and 2025 and was compiled on 23 November 2025. Only English-language journal articles indexed in Scopus were included in order to ensure consistency and data quality. The search strategy was implemented using the following query: TITLE-ABS-KEY (artificial AND intelligence AND tourism) AND PUBYEAR > 2000.

Table 1. General Information on Artificial Intelligence and Tourism Scientific Articles

Time Interval	2001:2025
Sources (Journals, Books, etc.)	470
Document	1089
Annual Growth Rate %	27.98
Document Average Age	2.45
Average number of citations per document	32.73
Application	8816
Author's Keywords	3365
Author	3007
Authors of Documentaries with a Single Author	119
Co-authors per document	3.53
International Co-authorship %	30.95
Article	1089

Source: Authors' Elaboration

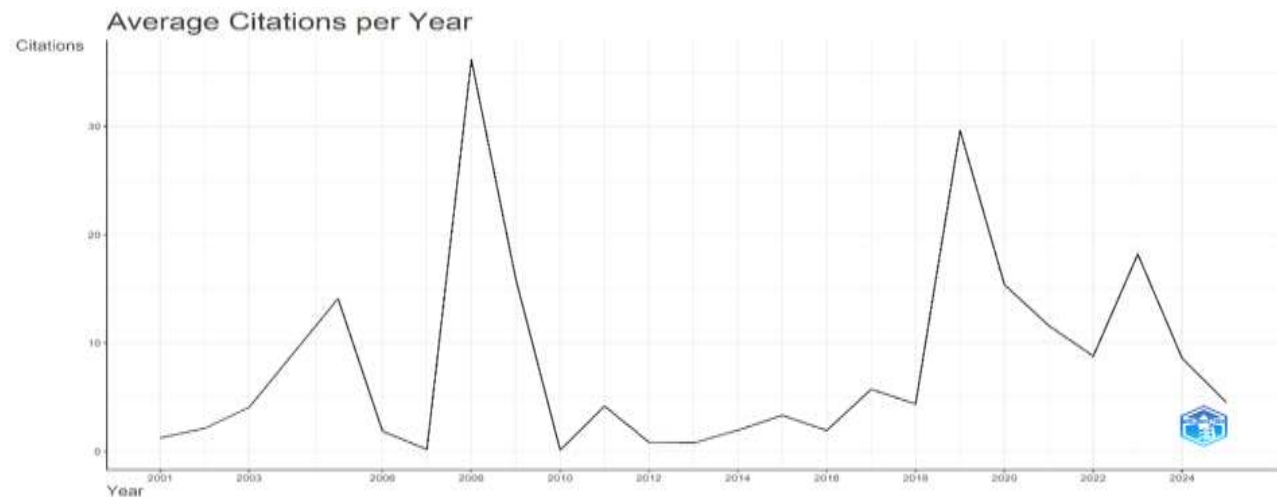
As shown in Table 1, a total of 1,089 scientific articles were published between 2001 and 2025, produced by 3,007 authors across 470 different sources, including journals and other academic outlets. Of the total number of authors, 119 researchers contributed single-authored publications, while the remaining studies were produced through collaborative authorship. The average number of co-authors per document was 3.53, and the rate of international co-authorship was calculated as 30.95%. The dataset includes 3,365 author keywords, indicating a broad and diverse conceptual scope within the literature. The annual growth rate of publications was calculated at 27.98%, reflecting a rapid expansion of research on artificial intelligence and tourism in recent years. Furthermore, the average age of the analyzed documents was 2.45 years, while the mean number of citations per article reached 32.73, suggesting a relatively high citation impact within the field.

Figure 1. Development of Artificial Intelligence and Tourism Scientific Research Articles over the Years**Source: Authors' Elaboration**

Based on the annual publication trend presented in Figure 1, scientific output on artificial intelligence and tourism remained limited and fluctuated at relatively low levels during the early years of the study period. The first publication indexed in the dataset dates back to 2001. In the subsequent years, the number of publications generally remained at single-digit levels, with only a few exceptions, notably in 2012 ($n = 12$) and 2014 ($n = 10$). From 2018 onwards, the volume of publications reached double-digit figures and subsequently exhibited a sustained upward trend. A particularly sharp increase is observed after 2020, indicating a rapid expansion of academic interest in the field. The year 2025 represents the most productive year in the dataset, with 373 scientific articles, accounting for 34.25% of the total number of publications. Moreover, more than half of all articles (57.21%, $n = 623$) were published within the most recent two-year period, which clearly reflects a substantial and accelerating growth of scholarly attention to artificial intelligence and tourism in recent years.

Figure 2 illustrates the evolution of the annual average citation counts of scientific articles on artificial intelligence and tourism and reveals a highly volatile pattern over the study period. In the early years, the average citation impact increased gradually, rising from 1.2 in 2001 to 4.1 in 2002 and reaching 14.1 in 2005. This upward trend was followed by a marked decline in 2006 and 2007. A pronounced peak is observed in 2008, when the average number of citations reached 36.2, representing the highest value recorded in the series. Subsequently, the citation impact declined sharply, reaching a notably low level in 2010 (0.16 citations on average). A moderate recovery occurred in 2011, with the average citation count increasing to 4.2, followed by a period of relatively low and stable citation levels in 2012 and 2013 (both at 0.8). In the following years, average citation values showed a gradual increase, rising to 1.9 in 2014 and 3.3 in 2015, before declining again in 2016 (1.9). The citation impact improved in 2017 (5.7) but decreased slightly in 2018 (4.4). A second major increase is observed in 2019, when the average citation count reached 29.6.

Figure 2. Annual Average Citation Counts of Scientific Research Articles on Artificial Intelligence and Tourism

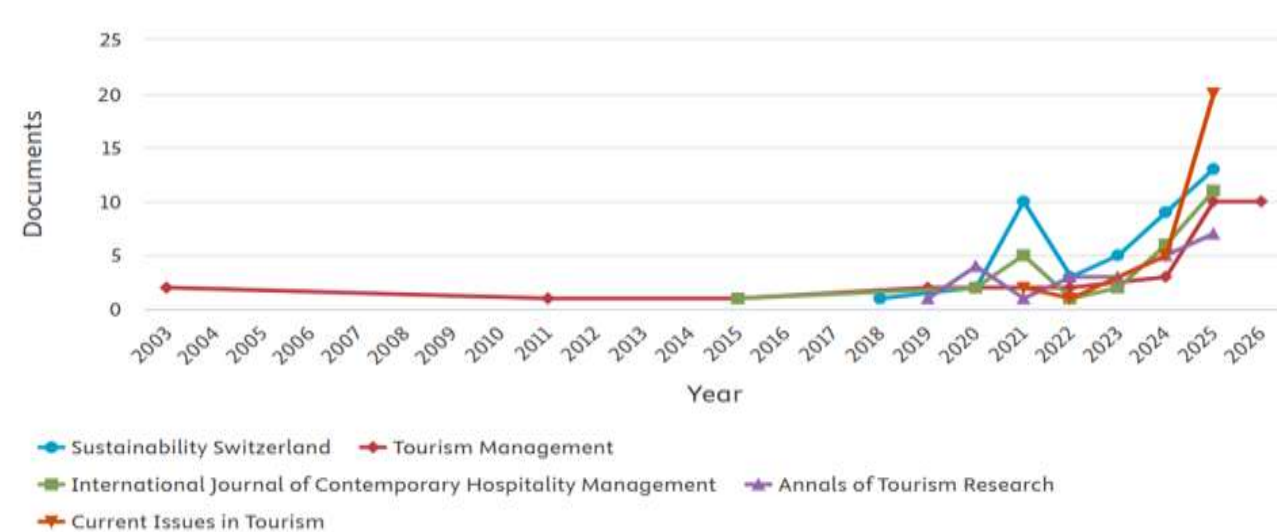


Source: Authors' Elaboration

However, this surge was not sustained, as the average citations per article declined to 15.4 in 2020 and further to 8.8 in 2021. Although a temporary increase occurred in 2023 (18.2), the values decreased again in subsequent years, falling to 8.6 in 2024 and 4.5 in 2025. Overall, these results indicate that the citation impact of research on artificial intelligence and tourism has been characterised by substantial year-to-year fluctuations rather than a steady upward trajectory.

Figure 3 shows the top 5 journals with the most publications on artificial intelligence and tourism scientific research articles.

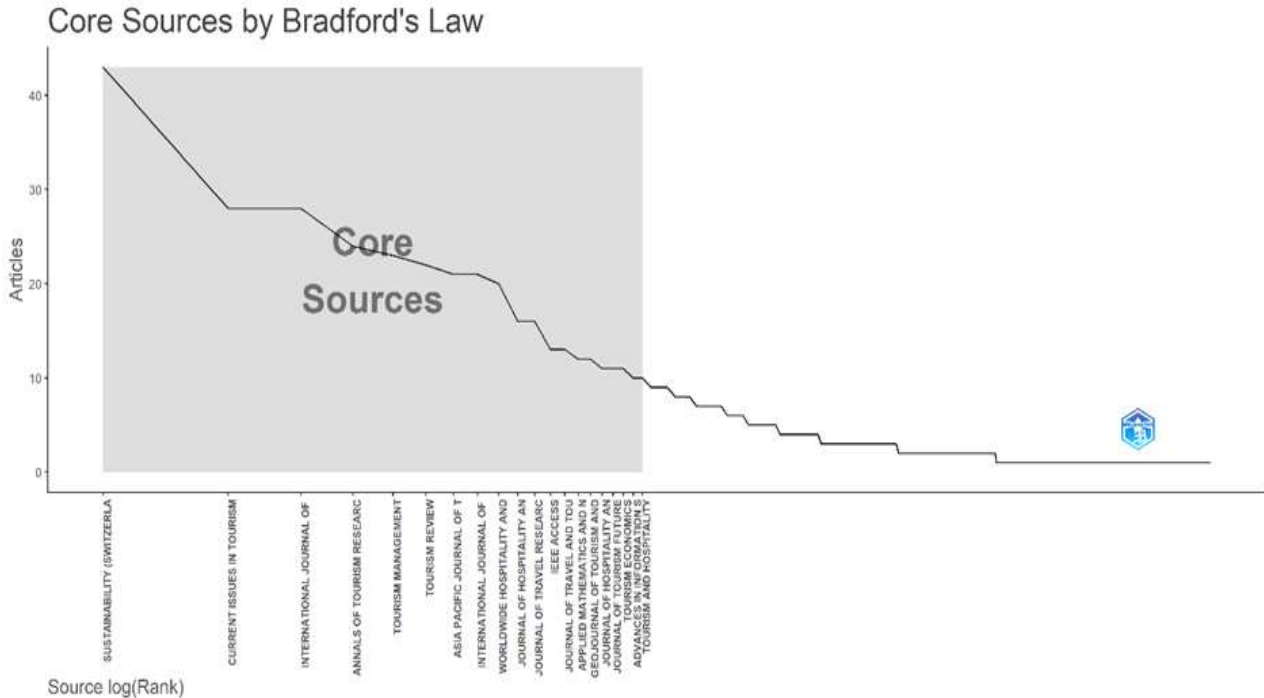
Figure 3. Journals Publishing Scientific Research Articles on Artificial Intelligence and Tourism



Source: Authors' Elaboration

Sustainability Switzerland is the journal with the most scientific research articles (n=43) published. Subsequent journals include Current Issues in Tourism (n = 28), International Journal of Contemporary Hospitality Management (n = 28), Annals of Tourism Research (n = 24), and Tourism Management (n = 23). The preference for these journals by researchers is largely due to their specialization in tourism and their high impact factors.

Figure 4. Distribution Graph of Artificial Intelligence and Tourism Scientific Research Articles According to Bradford's Law



Source: Authors' Elaboration

Bradford's Law is widely used to assess the relative importance of journals within a scientific field and to examine how scholarly output is distributed across publication outlets (Souza, Kuniyoshi and Freitas, 2024). The law proposes that literature on a specific topic is not evenly dispersed but follows a systematic and predictable pattern, in which journals can be classified into successive productivity zones. In this framework, a small set of highly productive journals forms the core of the field, followed by a second zone of moderately productive outlets and a third zone consisting of a large number of journals with comparatively low publication output. By introducing the concept of core journals, Bradford's seminal work provided an important theoretical foundation for understanding the structural organisation of scientific communication (Tripathi and Sen, 2016). As illustrated in Figure 4, the distribution of journals publishing research on artificial intelligence and tourism closely follows the pattern predicted by Bradford's Law. The core zone is composed of a relatively limited number of journals, yet it accounts for a disproportionately large share of total publications, indicating a high level of publication concentration. In this core group, *Sustainability (Switzerland)* emerges as the most productive outlet with 43 articles, followed by *Current Issues in Tourism* and the *International Journal of Contemporary Hospitality Management* (28 articles each), *Annals of Tourism Research* (24), *Tourism Management* (23) and *Tourism Review* (22). Other prominent core journals include the *Asia Pacific Journal of Tourism Research* and the *International Journal of Hospitality Management* (21 articles each), *Worldwide Hospitality and Tourism Themes* (20), the *Journal of Hospitality and Tourism Technology* and the *Journal of Travel Research* (16 each), and *IEEE Access* and the *Journal of Travel and Tourism Marketing* (13 each). In addition, *Applied Mathematics and Nonlinear Sciences* and the *GeoJournal of Tourism and Geosites* each published 12 articles, while the *Journal of Hospitality and Tourism Insights*, *Journal of Tourism Futures* and *Tourism Economics* each contributed 11 publications. The remaining core outlets—*Advances in Information Sciences and Service Sciences* and *Tourism and Hospitality*—each accounted for 10 articles. Overall, these findings demonstrate that scholarly production on artificial intelligence and tourism is highly concentrated within a relatively small group of specialised and high-impact journals. This concentration pattern indicates that the field exhibits a clearly structured publication landscape and conforms closely to the theoretical distribution proposed by Bradford's Law.

Table 2. Bradford Law Regions

Region	Number of journals	%	Number of articles	%
I	20	4.25	365	33.52
II	107	22.77	366	33.61
III	343	72.98	358	32.87
Total	470	100	1089	100

Source: Authors' Elaboration

Based on the Bradford zoning results reported in Table 2, the distribution of journals publishing research on artificial intelligence and tourism exhibits a highly concentrated and structured pattern. Region I, which represents the core zone defined by Bradford's Law, consists of only 20 journals (4.25% of all journals) yet accounts for 365 articles, corresponding to 33.52% of the total scientific output. This indicates that approximately one-third of all publications in the field are produced by a very small group of highly productive journals. Region II comprises 107 journals, representing 22.77% of all sources, and contributes 366 articles (33.61% of total publications). Although the number of journals in this zone increases substantially compared to the core region, a similar share of publications is produced, reflecting a clear decline in average productivity per journal. Region III includes the largest number of outlets, with 343 journals accounting for 72.98% of all journals in the dataset. Despite this broad dispersion across publication venues, these journals together produce 358 articles, corresponding to 32.87% of the total output.

Overall, this zonal distribution demonstrates that scientific production in artificial intelligence and tourism is strongly concentrated in a limited number of core journals, while the remaining literature is dispersed across a rapidly expanding set of less productive outlets. The near-equal distribution of articles across the three regions, coupled with the sharply increasing number of journals from Region I to Region III, closely reflects the classical dispersion pattern predicted by Bradford's Law and confirms the existence of a well-defined core-periphery structure within the field.

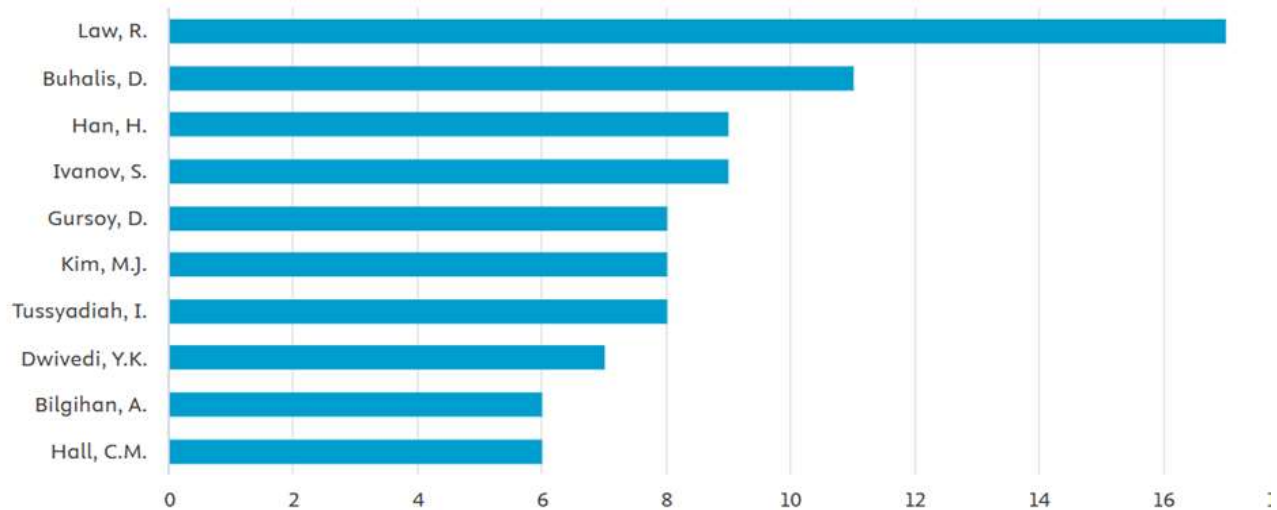
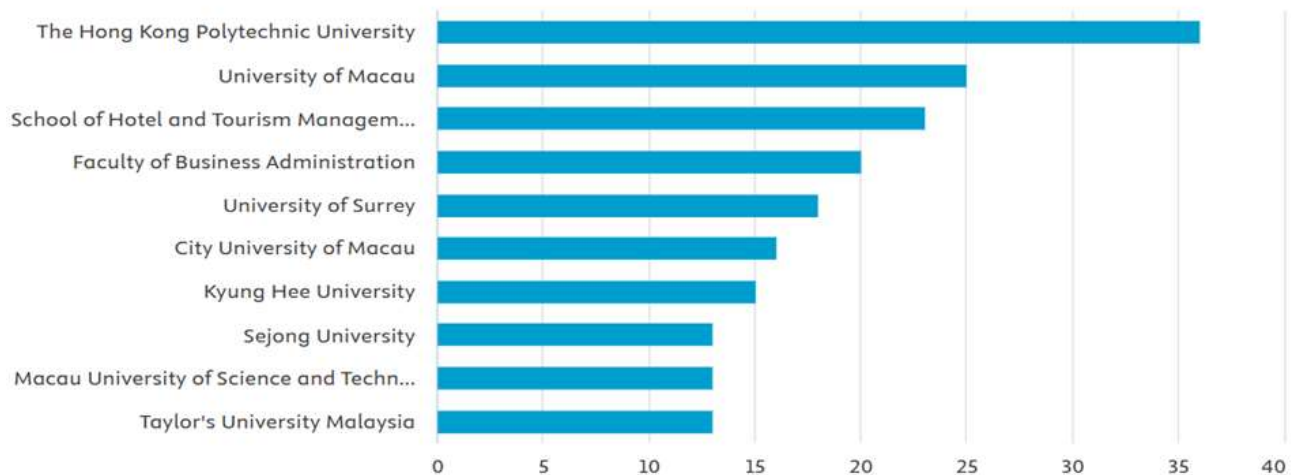
Figure 5. Authors with the Most Scientific Research Articles on Artificial Intelligence and Tourism

Source: Authors' Elaboration

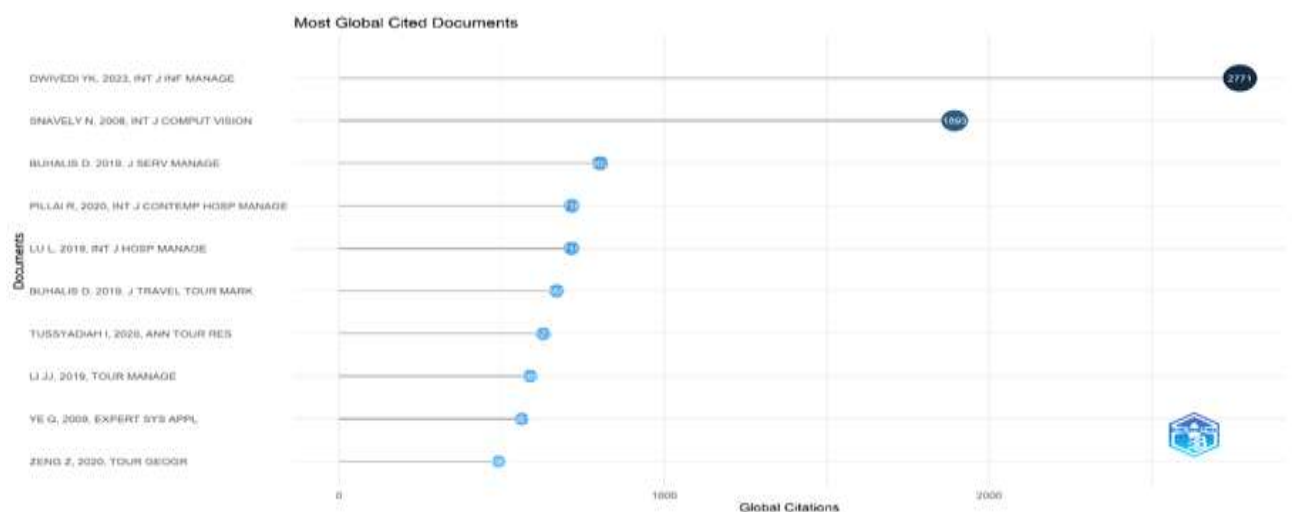
Figure 5 lists the top 10 authors who have written the most scientific research articles on artificial intelligence and tourism. Law, R. (n=17) is the author with the most publications. Following this author are, in order: Buhalis, D. (n=11), Han, H. and Ivanov, S (n=9), Gürsoy, D., Kim, M., J. and Tussyadiah, I. (n=8), Dwivedi, Y., K. (n=7), Bilgihan, A. and Hall, C., M. (n=6).

Figure 6. Institutions Publishing Scientific Research Articles on Artificial Intelligence and Tourism


Source: Authors' Elaboration

Figure 6 lists the top 10 institutions publishing scientific research articles on artificial intelligence and tourism. The Hong Kong Polytechnic University ranks first as the institution publishing the most scientific articles (n=36). This university is one of Hong Kong's leading public universities. The university is internationally recognized for its programs in various disciplines such as engineering, business, design, health sciences, and tourism. Macau University (n=25) ranks second. According to the findings, The Hong Kong Polytechnic University and Macau University rank highest in terms of research contributions. They are followed by the School of Hotel and Tourism Management, The Hong Kong Polytechnic University (n = 23), Faculty of Business Administration (n = 20), University of Surrey (n = 18), Macau City University (n = 16), Kyung Hee University (n = 15), Sejong University (n = 13), Macau University of Science and Technology (n = 13), and Taylor's University, Malaysia (n = 13). This ranking highlights the research productivity and academic impact of these institutions in the fields of artificial intelligence and tourism.

Figure 7 presents the most highly cited articles within the scientific literature on artificial intelligence and tourism, highlighting the publications that have exerted the greatest global academic influence. The most cited study is the article by Dwivedi et. al., (2023), published in the *International Journal of Information Management*, which has accumulated 2,271 citations, indicating its central role in shaping recent research at the intersection of digital technologies and tourism-related domains. This publication is followed by the seminal contribution of Snaveley, Seitz and Szeliski (2008) in the *International Journal of Computer Vision*, which has received 1,893 citations and reflects the strong foundational impact of computer vision research on tourism-related artificial intelligence applications.

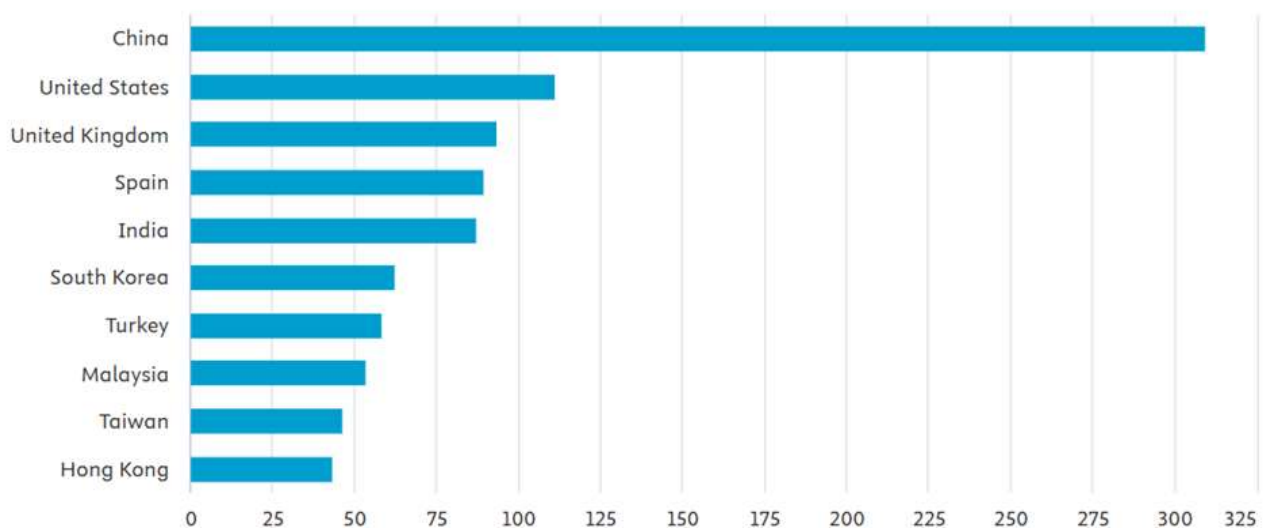
Figure 7. Most Cited Articles in Artificial Intelligence and Tourism Scientific Research


Source: Authors' Elaboration

The third most cited publication is Buhalis's (2019) article in the *Journal of Service Management*, with 802 citations, underlining the importance of service innovation and technology-enabled service transformation within tourism and hospitality contexts. It is closely followed by the study by Pillai (2020) published in the *International Journal of Contemporary Hospitality Management* (716 citations) and the work of Lu (2019) in the *International Journal of Hospitality Management* (715 citations), both of which have made substantial contributions to understanding digital and intelligent systems in hospitality and tourism operations. Further highly influential publications include Buhalis et. al., (2019) article in the *Journal of Travel & Tourism Marketing* with 669 citations and Tussyadiah's (2020) study in *Annals of Tourism Research*, which has received 627 citations and is widely recognised for its conceptual and empirical contributions to technology-mediated tourist experiences. In addition, Li, Bonn and Ye (2019) article in *Tourism Management* (588 citations), Ye, Zhang and Law (2009) study in *Expert Systems with Applications* (561 citations), and Zeng, Chen, and Lew (2020) publication in *Tourism Geographies* (490 citations) also stand out as highly cited works. Overall, the citation distribution shown in Figure 7 indicates that the most influential literature in artificial intelligence and tourism draws not only from leading tourism and hospitality journals but also from broader information systems and computer science outlets, reflecting the inherently interdisciplinary nature of the field.

Figure 8 presents the geographical distribution of scientific publications on artificial intelligence and tourism by country and highlights a clear concentration of research activity within a limited number of countries. China emerges as the leading contributor, with 309 publications, indicating a dominant role in shaping the academic landscape of artificial intelligence-driven tourism research. The United States follows with 111 publications, while the United Kingdom ranks third with 93 articles, confirming the strong presence of both North American and European research communities in this field.

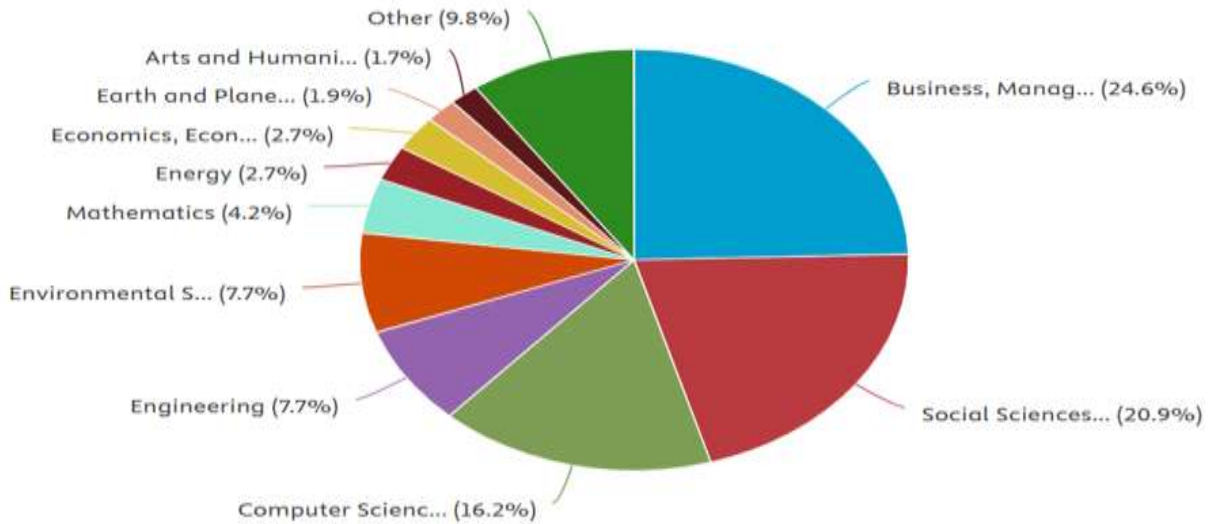
Figure 8. Countries with Scientific Research Articles on Artificial Intelligence and Tourism



Source: Authors' Elaboration

A second tier of productive countries is represented by Spain (89 publications) and India (87 publications), reflecting the growing engagement of Southern European and South Asian research institutions in artificial intelligence and tourism studies. South Korea also demonstrates a substantial research output with 62 publications, underscoring the active participation of East Asian countries in technology-oriented tourism research. Turkey (58 publications) and Malaysia (53 publications) further contribute to the expanding body of literature, indicating the increasing involvement of emerging tourism markets in this research domain. Taiwan (46 publications) and Hong Kong (41 publications) complete the group of the ten most productive countries. Overall, the distribution reveals that scientific output on artificial intelligence and tourism is primarily concentrated in countries with well-established research infrastructures in information technologies and tourism studies. The prominence of both Asian economies and Western countries further reflects the global and interdisciplinary character of artificial intelligence research in tourism, as well as the strategic importance attributed to digital transformation in tourism systems across different regions.

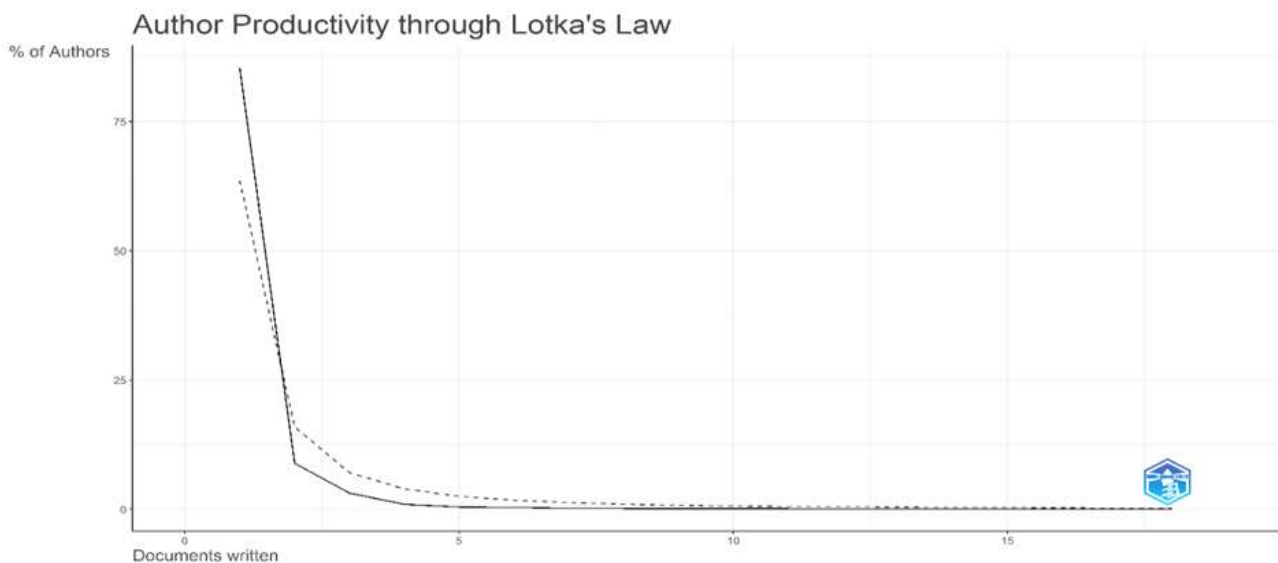
Figure 9. Fields in Which Scientific Research Articles on Artificial Intelligence and Tourism Are Indexed



Source: Authors' Elaboration

Figure 9 presents the disciplinary distribution of scientific research articles on artificial intelligence and tourism. As illustrated in the figure, the analyzed publications are indexed across multiple subject areas, indicating that research in this field is inherently interdisciplinary. The largest share of articles is indexed in Business, Management, and Accounting ($n = 536$), followed by Social Sciences ($n = 456$) and Computer Science ($n = 354$). This distribution shows that studies on artificial intelligence and tourism are primarily positioned at the intersection of managerial decision-making, social and behavioral analysis, and technological. Alongside these dominant fields, a notable proportion of articles is indexed in Engineering ($n = 167$) and Environmental Sciences ($n = 167$), reflecting the relevance of technical system design, infrastructure, and sustainability-related considerations in AI-driven tourism research. Smaller yet meaningful contributions are also observed in areas such as Mathematics, Energy, Economics and Econometrics, Earth and Planetary Sciences, and Arts and Humanities, highlighting the methodological, analytical, and cultural dimensions of the field. Overall, the distribution shown in Figure 9 demonstrates that artificial intelligence and tourism research draws on a broad range of disciplinary perspectives, encompassing management, social sciences, computing, and engineering, while also integrating insights from supporting and complementary fields.

Figure 10. Lotka Law Graph of Scientific Research Articles on Artificial Intelligence and Tourism



Source: Authors' Elaboration

Figure 10 illustrates the distribution of author productivity in research on artificial intelligence and tourism and provides empirical evidence of a pattern that is largely consistent with the regularities described by Lotka's Law. In line with Lotka's original formulation, the estimated constant for the dataset is 0.636, indicating that

approximately 63.6% of all contributing authors have produced only a single publication within the field. This finding closely corresponds to Lotka's inverse square law, which suggests that the majority of scientific contributors are single-paper authors. Consistent with this theoretical expectation, the proportion of authors producing two publications is substantially lower and approximates one quarter of the number of single-publication authors, while the share of authors with three publications is close to one ninth of that group. More generally, the frequency of authors contributing n publications decreases rapidly as n increases and follows an inverse square relationship with the number of authors who have published only once. This sharply declining pattern is clearly reflected in Figure 10, where a steep drop is observed after the first publication category and a long tail of highly productive authors emerges thereafter. Overall, the results indicate that scientific production in artificial intelligence and tourism is characterised by a highly skewed authorship structure, dominated by a large proportion of occasional contributors and a relatively small core of highly productive researchers, which is in line with the productivity distribution predicted by Lotka's Law.

Based on the distribution reported in Table 3, author productivity in research on artificial intelligence and tourism broadly follows the general pattern proposed by Lotka's (1926) inverse square law, yet exhibits noticeable deviations in the observed proportions. According to Lotka's theoretical expectation, approximately 60% of authors are assumed to contribute only one publication. In the present dataset, however, as many as 85.5% of authors have produced a single article, which is substantially higher than the value predicted by the theoretical model. This finding indicates that scientific production in the field is overwhelmingly driven by one-time contributors.

Table 3. Distribution and Evaluation of Scientific Productivity According to Lotka's Law

Documents	Written Number of Authors	Proportion of Authors	Theoretical
1	2570	0.855	0.636
2	268	0.089	0.159
3	94	0.031	0.071
4	29	0.01	0.04
5	13	0.004	0.025
6	10	0.003	0.018
7	6	0.002	0.013
8	5	0.002	0.01
9	3	0.001	0.008
10	3	0.001	0.006
11	3	0.001	0.005
12	1	0	0.004
17	1	0	0.002
18	1	0	0.002

Source: Authors' Elaboration

Similarly, the proportions of authors publishing two and three articles (8.9% and 3.1%, respectively) are considerably lower than the values implied by the $1/n^2$ distribution. Although the overall pattern remains consistent with the central implication of Lotka's Law—namely that the majority of researchers contribute only a small number of publications—the empirical ratios deviate markedly from the expected theoretical values. These results suggest that the research field of artificial intelligence and tourism is characterised by a highly skewed authorship structure in which sustained and repeated scholarly contributions are limited to a relatively small core of researchers. Such deviations from the classical Lotka distribution are frequently observed in emerging and rapidly expanding research areas. In this respect, the findings indicate that the field is still in a dynamic and developmental phase, marked by the continuous entry of new contributors and a comparatively small group of established authors producing regular and sustained research output.

Zipf's Law constitutes a fundamental principle in linguistics and bibliometrics for modelling the frequency distribution of words in scientific texts and research corpora (Souza et al., 2024). According to this law, when words are ranked in descending order of their frequency of occurrence, the product of a word's rank and its frequency remains approximately constant, resulting in a characteristic inverse rank–frequency relationship of the form $1/r$ (Zipf, 1949). As illustrated in Figure 11, the distribution of author keywords in research on artificial intelligence and tourism exhibits a highly uneven structure that is broadly consistent with the pattern predicted by Zipf's Law.



The most frequently used keywords are *artificial intelligence* (f = 399) and *tourism* (f = 149), followed by *ChatGPT* (f = 64), *machine learning* (f = 59), *hospitality* (f = 41), *generative artificial intelligence* (f = 35), *sustainability* (f = 35), *smart tourism* (f = 34), *deep learning* (f = 32), and *big data* (f = 30). This distribution demonstrates that a limited set of highly recurrent terms dominates the conceptual landscape of the field, while a large number of additional keywords appear with substantially lower frequencies. The sharp decline in keyword frequencies after the most common terms, together with the presence of a long tail of infrequently used keywords, indicates that the conceptual vocabulary of artificial intelligence and tourism research follows a rank-frequency structure that closely resembles the distributional regularities described by Zipf’s Law.

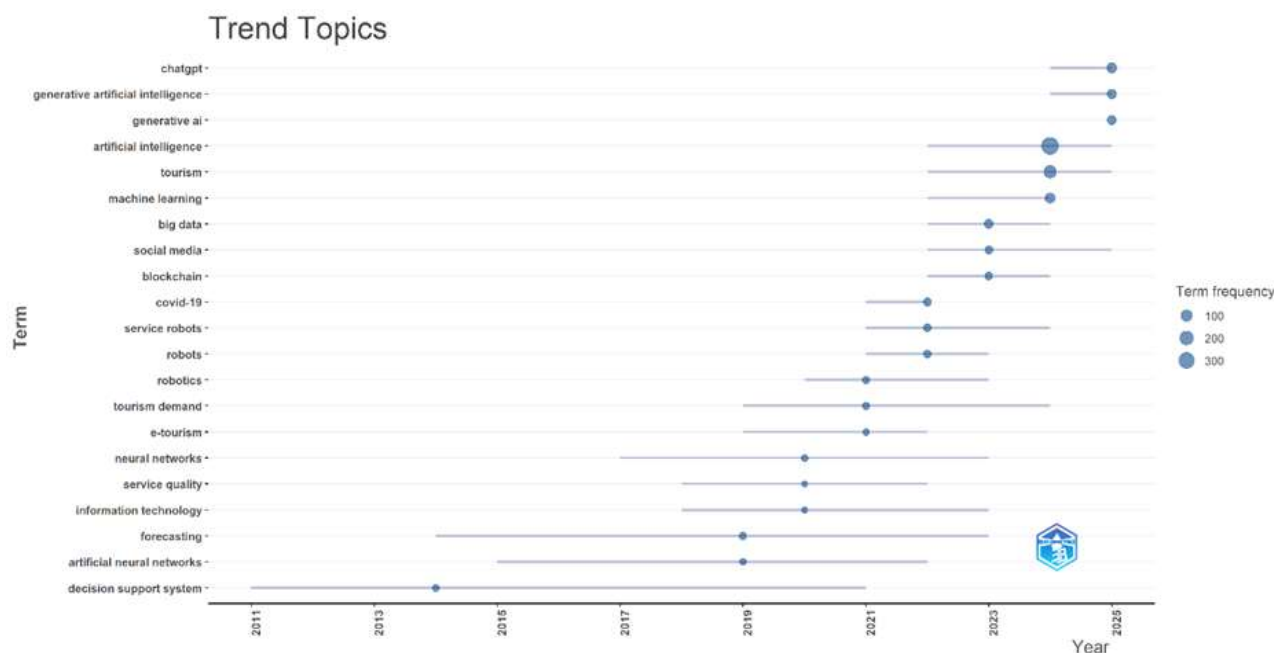


Figure 12 depicts the temporal evolution of trending topics in artificial intelligence and tourism research based on author keywords and highlights a clear shift in the thematic orientation of the field over time. The results indicate that, between 2001 and 2013, no author keywords reached the minimum frequency threshold required

Table 4. Clusters and Frequencies of Thematic Mappings of Author Keywords Used in Scientific Research Articles on Artificial Intelligence and Tourism

Cluster	Callon Centrality	Callon Density	Row Cluster	Frequency Density	Cluster Frequency
Artificial Intelligence	0.562	16.2	6	6	668
Tourism	0.74	12.204	8	2	348
ChatGPT	0.633	13.957	7	3	301
Machine Learning	0.472	16.187	4	5	254
Sustainability	0.556	12.131	5	1	193
Forecast	0.174	16.036	3	4	91
Bibliometric	0.033	16.667	2	7	6
Perceived Value	0	20	1	8	5

Source: Authors' Elaboration

Thematic maps are created on a two-dimensional grid that features centrality represented on the x-axis and density on the y-axis. Centrality indicates how significant the chosen theme is within the discipline, whereas density measures the extent of the theme's growth (Cobo et al., 2011; Nasir et al., 2020). According to Callon and his team, a cluster's centrality is influenced by how strongly it connects with other clusters; the more numerous and intense these connections are, the better the cluster can tackle research challenges that matter to the scientific or technological sectors. On the other hand, density showcases the strength of ties among the keywords within the cluster; strong connections lead to a more coherent and unified approach to the research issues tied to that cluster. Using these two metrics, a research subject can be categorized into one of four thematic zones: motor themes, core themes, emerging or fading themes, and niche themes (Cobo et al., 2011; Nasir et al., 2020; Seçilmiş and Sarı, 2023; Yay, Güneri and Atabay, 2022). Consequently, each keyword or research theme can be placed in the appropriate quadrant based on bibliographic information and details about the authors, permitting the representation and analysis of the thematic framework and developmental patterns in the field. This approach is regarded as a valuable instrument for investigating research subjects and comprehending thematic patterns in existing literature (Callon, Courtial and Laville, 1991; Yu and Muñoz-Justicia, 2020; Seyhan and Özzeybek Taş, 2021).

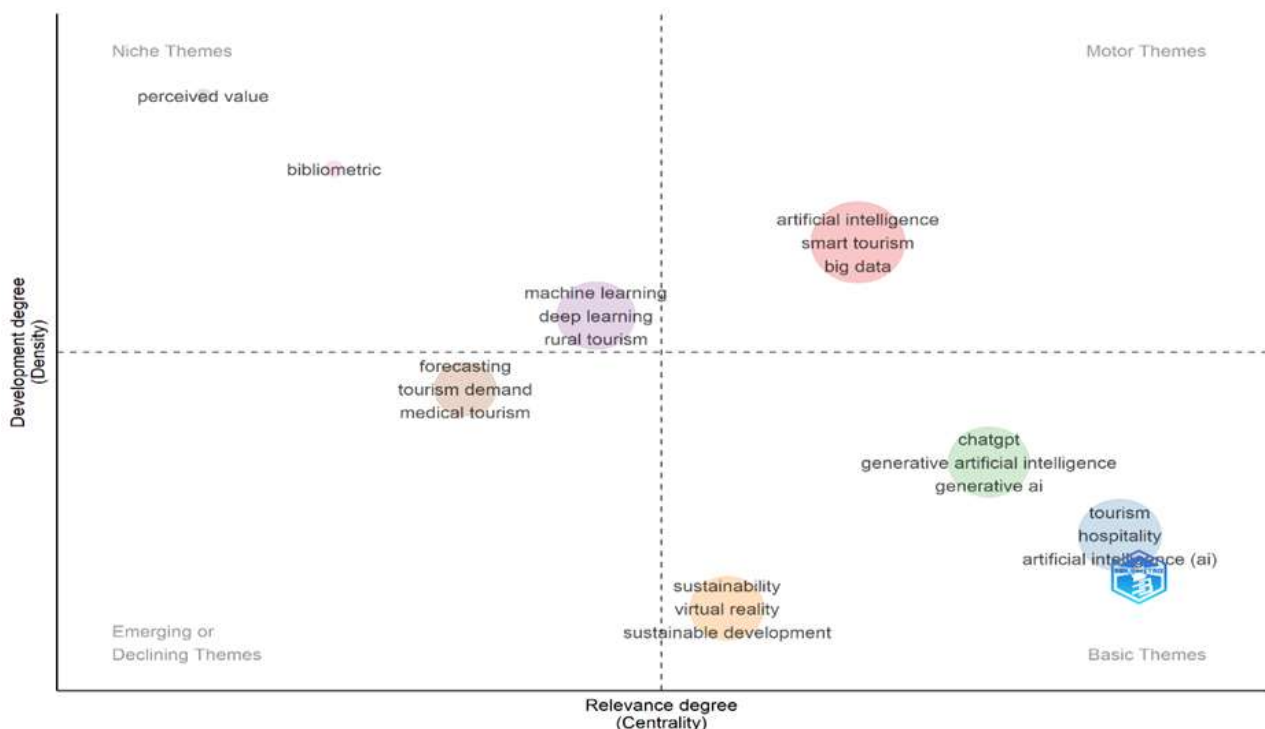
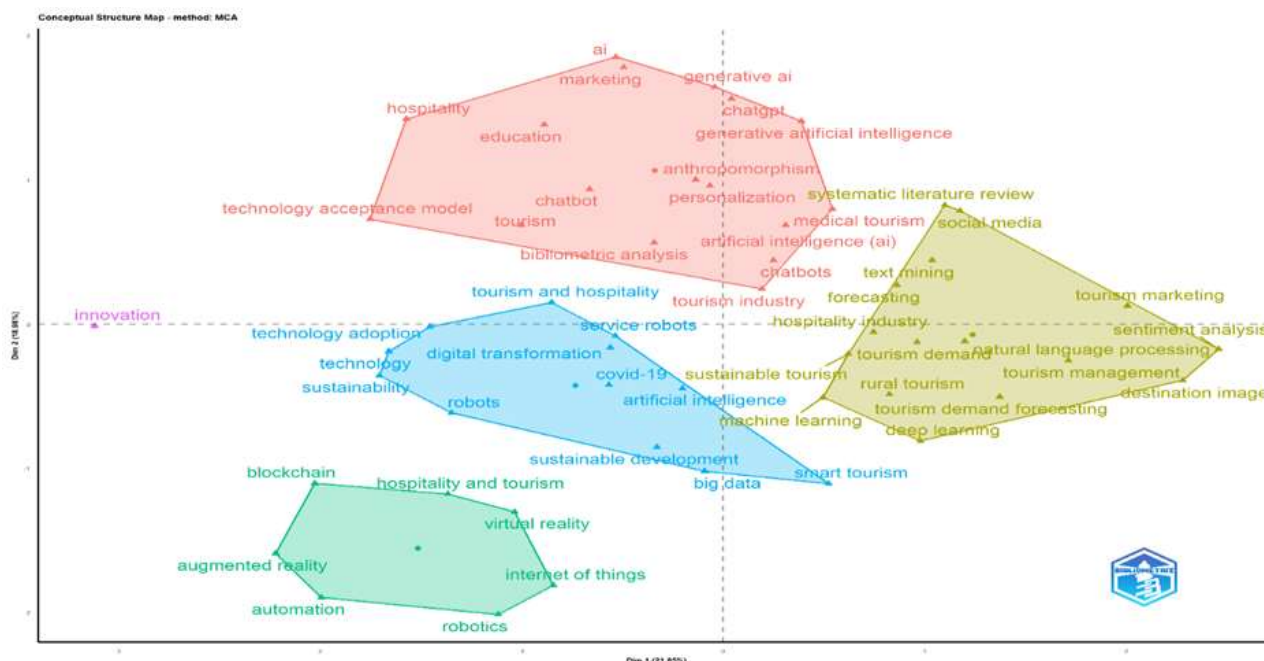
Figure 14. Thematic Map of Author Keywords Used in Scientific Research Articles on Artificial Intelligence and Tourism**Source: Authors' Elaboration**

Figure 14 presents the thematic structure of author keywords in artificial intelligence and tourism research based on their centrality and density, and categorises the identified themes into motor, basic, niche, and emerging or declining themes. The thematic map reveals a well-defined and diversified conceptual landscape, reflecting both mature and evolving research streams within the field. The motor theme cluster, which occupies a position of high centrality and high development, is dominated by the keyword *artificial intelligence* (n = 399) and represents the main driving force of the literature. This cluster also includes closely related and highly visible topics such as *smart tourism* (n = 34), *big data* (n = 30), *COVID-19* (n = 19), *digital transformation* (n = 18), *service robots* (n = 15), *robots* (n = 13), *automation* (n = 12), *robotics* (n = 12), and *accommodation and tourism* (n = 10). The strong density and centrality of this cluster indicate that these topics are both conceptually well developed and structurally central to contemporary research on artificial intelligence and tourism, thereby representing the core drivers of scholarly activity in the field. The basic theme area is represented by three distinct clusters centred on the keywords *tourism*, *ChatGPT*, and *sustainability*. The first cluster is organised around *tourism* (n = 149) and comprises *hospitality* (n = 41), *artificial intelligence (AI)* (n = 25), *chatbot* (n = 22), *social media* (n = 17), *marketing* (n = 14), *technology adoption* (n = 14), *anthropomorphism* (n = 12), *education* (n = 12), and *technology acceptance model* (n = 9). This cluster reflects foundational research themes addressing technology adoption, user behaviour and marketing-oriented applications of artificial intelligence in tourism and hospitality. The second basic cluster is centred on *ChatGPT* (n = 64) and includes *generative artificial intelligence* (n = 63), *AI* (n = 26), *sustainable tourism* (n = 26), *bibliometric analysis* (n = 23), *chatbots* (n = 13), *tourism and accommodation* (n = 11), *tourism demand forecasting* (n = 11), and *personalisation* (n = 10). This cluster captures the rapid emergence of generative artificial intelligence and conversational systems, together with their growing integration into tourism operations, demand analysis and personalised service design. The third basic cluster is organised around *sustainability* (n = 35) and incorporates *virtual reality* (n = 25), *sustainable development* (n = 20), *technology* (n = 18), *tourism sector* (n = 18), *blockchain* (n = 14), *augmented reality* (n = 12), *innovation* (n = 10), *bibliometrics* (n = 8), and *digital technologies* (n = 8). This cluster highlights the increasing convergence between digital technologies and sustainability-oriented tourism research and indicates that sustainability-related technological applications constitute a stable and central research foundation within the field. The emerging or declining theme quadrant contains a cluster that includes *forecasting* (n = 11), *tourism demand* (n = 10), *medical tourism* (n = 9), *decision support systems* (n = 8), *recommendation systems* (n = 8), *big data analytics* (n = 7), *e-tourism* (n = 7), *fuzzy logic* (n = 7), *neural networks* (n = 7), and *artificial neural networks* (n = 6). The position of this cluster indicates relatively low centrality and limited thematic development in the current literature. These concepts either represent research topics that were more prominent in earlier phases of technology-driven tourism research or emerging lines of inquiry that have not yet reached conceptual maturity. Consequently, this thematic area reflects both the legacy of earlier research paradigms and potential future directions for scholarly exploration. Finally, the niche theme quadrant comprises three distinct clusters centred on *machine learning*, *bibliometric*, and *perceived value*. The largest niche cluster is organised around *machine learning* (n = 59) and includes *deep learning* (n = 32), *rural tourism* (n = 14), *natural language processing* (n = 13), *destination image* (n = 12), *sentiment analysis* (n = 11), *text mining* (n = 11), *accommodation sector* (n = 10), *systematic literature review* (n = 9), and *tourism management* (n = 9). The remaining two niche clusters are represented by *bibliometric* (n = 6) and *perceived value* (n = 5), respectively. Although these themes display relatively high internal development, their low centrality indicates that they remain specialised and confined to specific sub-domains. Overall, the niche themes reflect focused research interests and emerging methodological or conceptual areas that have not yet been fully integrated into the broader artificial intelligence and tourism research agenda, but nevertheless represent promising opportunities for future research.

Figure 15 illustrates the findings from a factor analysis that was developed using a conceptual mapping approach based on keywords. This map organizes a total of 50 keywords into five distinct groups. The first group, marked in blue, is centered around themes represented by keywords like artificial intelligence, sustainability, smart tourism, big data, sustainable development, COVID-19, digital transformation, technology, service robots, technology adoption, tourism and hospitality, and robots.

Figure 15. Conceptual Structure Map of Factorial Analysis

Source: Authors' Elaboration

This group highlights a web of connections related to technological change and AI-driven applications within the tourism industry. The second group, marked in brick red, focuses on keywords including tourism, chatGPT, hospitality, generative artificial intelligence, AI, artificial intelligence (AI), bibliometric analysis, chatbot, tourism sector, marketing, chatbots, anthropomorphism, education, personalization, medical tourism, and technology acceptance model. This group captures research that examines the impact of AI-powered communication tools on the tourism experience, marketing strategies, and service provision. The third group, marked in light green, includes keywords such as machine learning, deep learning, sustainable tourism, social media, rural tourism, natural language processing, target visuals, prediction, sentiment analysis, text mining, tourism demand forecasting, accommodation sector, tourism demand, systematic literature review, tourism management, and tourism marketing. This group uncovers a framework concentrating on the application of data analytics and AI techniques in tourism studies. The fourth group, highlighted in green, emphasizes keywords such as virtual reality, blockchain, augmented reality, automation, robotics, accommodation and tourism, and the Internet of Things. This group indicates a growing area of research focused on merging innovative technologies and enhancing digital experiences within the tourism sector. Finally, the fifth group, represented in orange, revolves around topics related to the keyword innovation, indicating research that is based on innovation in tourism. In this regard, the results of the analysis clearly indicate that studies concerning artificial intelligence, data science, and innovative technologies in the tourism field are becoming increasingly varied and are forming distinct thematic clusters.

Conclusion

This study provides a comprehensive bibliometric overview of scientific research on artificial intelligence and tourism by analyzing 1,089 articles published between 2001 and 2025. In recent years, the rapid advancement of innovative technologies has led to their widespread adoption within the tourism industry, which is widely recognized as a key driver behind the sharp increase in academic publications on this topic (Liao et al., 2025). The findings reveal a pronounced and sustained growth in scientific output, particularly in the last decade, reflecting the increasing strategic importance of artificial intelligence within tourism and hospitality research. It is likely that publication volumes will continue to grow in parallel with ongoing technological developments, while patterns of artificial intelligence utilization in tourism are expected to further evolve in the coming years (Atar, 2020). Beyond documenting growth trends, this study makes a structural contribution to the literature by integrating Bradford's, Lotka's, and Zipf's laws to examine the underlying organization of scientific knowledge in artificial intelligence and tourism research. The application of Bradford's Law reveals the presence of a relatively small group of core journals that concentrate a substantial share of publications, indicating an emerging but not yet fully consolidated publication structure. The results derived from Lotka's Law show that the majority of authors contribute only a single publication, pointing to a broad and inclusive

research community rather than dominance by a limited group of highly prolific scholars. In parallel, the findings based on Zipf's Law demonstrate a strong concentration of dominant keywords alongside a long tail of less frequent and emerging concepts, highlighting both conceptual centralization and thematic diversification. Taken together, these findings suggest that artificial intelligence and tourism research is experiencing rapid expansion while still progressing toward structural maturity. The coexistence of a growing core knowledge base and a wide range of emerging topics reflects a dynamic and evolving research domain shaped by continuous technological innovation. Overall, this study demonstrates that artificial intelligence and tourism has evolved beyond a peripheral or technology-driven topic into a distinct and increasingly autonomous research field. By combining classical bibliometric laws with modern science mapping techniques, the study offers a holistic perspective on the intellectual organization, productivity patterns, and conceptual development of the field, thereby contributing to a deeper understanding of its current state and future trajectory.

Theoretical and Practical Implications

From a theoretical perspective, this study contributes to the literature by providing a law-based bibliometric framework for assessing the maturity and structure of an interdisciplinary research field. The integrated use of Bradford's, Lotka's, and Zipf's laws demonstrates how classical bibliometric principles can be effectively applied to evaluate journal concentration, author productivity, and conceptual focus in emerging research domains. The findings indicate that artificial intelligence and tourism research is characterized by rapid growth and increasing conceptual centralization, while still retaining a high degree of thematic openness. This suggests that the field is transitioning from an exploratory phase toward a more structured and theory-informed stage of development. Future theoretical work may build on this framework to compare maturity levels across related domains such as smart tourism, digital hospitality, or data-driven destination management. The findings of this study offer several practical insights for different stakeholder groups. For researchers, the identification of core journals, influential publication outlets, and dominant research themes provides guidance for publication strategies and research positioning. Understanding author productivity patterns may also help early-career scholars identify collaboration opportunities within a broad and diverse research community. For tourism and hospitality practitioners, the prominence of artificial intelligence-related themes such as automation, data analytics, robotics, and intelligent systems highlights key technological areas shaping current research agendas, which may inform innovation, investment, and operational decision-making. For policymakers and destination management organizations, the interdisciplinary and rapidly evolving nature of artificial intelligence research in tourism underscores the importance of developing adaptive regulatory frameworks, workforce training initiatives, and data governance policies that support sustainable and responsible adoption of intelligent technologies.

Limitations and Directions for Future Studies

Despite its contributions, this study is subject to several limitations that should be acknowledged. First, the analysis is based exclusively on journal articles indexed in the Scopus database and published in English, which may result in the omission of relevant studies indexed in other databases or published in different languages. Second, while bibliometric analysis and classical bibliometric laws provide valuable insights into the structural characteristics of a research field, they do not capture the full qualitative depth, contextual richness, or theoretical nuances of individual studies. Future research could address these limitations by incorporating multiple databases, such as Web of Science or Google Scholar, to enable cross-database comparisons and broader coverage. Longitudinal analyses focusing on specific sub-periods may also provide deeper insights into how the field has evolved in response to technological breakthroughs such as big data analytics or generative artificial intelligence. Moreover, mixed-method approaches that combine bibliometric techniques with qualitative content analysis or expert interviews could further enrich understanding of theoretical development and practical impact. Finally, future studies may extend the law-based bibliometric framework employed in this research to comparative analyses across related domains, thereby contributing to a more nuanced understanding of how interdisciplinary research fields emerge, mature, and consolidate over time.

Ethics Statement: As this study relies on secondary data obtained from publicly accessible academic databases and does not involve human participants or personal data, formal ethics committee approval is not required. The Journal of Gastronomy Hospitality and Travel (JOGHAT) bears no responsibility should any contrary situation arise; full responsibility rests with the author(s) of the study.

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