International Journal of Scientific Research and Management (IJSRM)
||Volume||13||Issue||10||Pages||9887-9897||2025||
Website: https://ijsrm.net ISSN (e): 2321-3418
DOI: 10.18535/ijsrm/v13i10.em07

Smart Tourism And Consumer Behavior Research: Mapping Global Trends Through A Bibliometric Lens (2018–2025)

Dinh Thi Mung*, Bui Thi Oanh

University of Labour and Social Affairs (Campus II), Ho Chi Minh City, Vietnam
*Corresponding author: mungdt@ldxh.edu.vn

Abstract
Smart tourism has emerged as a strategic priority in both scholarship and practice, while consumer behavior has been reshaped profoundly by digital transformation. This study applies bibliometric analysis of 2018–2025 Scopus data to map intellectual structures, research trends, and thematic priorities in the field. The dataset was processed with Bibliometrix in R, Biblioshiny, and VOSviewer, generating visualizations including keyword co-occurrence networks, thematic maps, and three-fields plots.
Findings confirm that research has shifted from early technological infrastructures, such as smartphones and ubiquitous computing, toward consumer-centered agendas emphasizing personalization, user experience, and artificial intelligence. At the same time, our analysis suggests a geographic reorientation, with China and India emerging as leading contributors alongside established European hubs. Thematic clusters highlight the integration of destination management, satisfaction, immersive technologies, and smart city perspectives, underscoring the hybrid nature of the field.
Taken together, the study provides a comprehensive overview of smart tourism and consumer behavior research, clarifies existing gaps, and outlines pathways for integrating technological innovation with sustainable and human-centered development.

Keywords: *Smart Tourism, Consumer Behavior, Bibliometric Analysis, Artificial Intelligence, User Experience, Sustainable Development*

1. Introduction

In the digital transformation era, the tourism industry is undergoing profound changes driven by the rise of smart technologies. Concepts such as smart tourism, digital tourism, and smart tourism destinations have not only expanded the scope of research but also become central strategies for development in many countries. At the same time, consumer behavior in tourism has shifted rapidly, as travelers increasingly prioritize digital experiences, personalized services, and data driven platforms (Buhalis & Amaranggana, 2015). In this context, exploring the intersection between smart technologies and consumer behavior carries both theoretical importance and practical relevance.

Nevertheless, current research remains fragmented and lacks a comprehensive synthesis. Some studies emphasize technological aspects, focusing mainly on digital infrastructure or new technical applications (Gretzel et al., 2020), while others concentrate on tourist behavior such as satisfaction, loyalty, or intention to revisit destinations (Li et al., 2021). Our analysis suggests that a research gap emerges from the limited integration of these two streams, especially in recent years as artificial intelligence, big data, and machine learning are reshaping the ways tourists search for, evaluate, and experience travel.

In response to this gap, the present study applies bibliometric analysis to systematically examine academic trends related to smart tourism and consumer behavior during 2018 to 2025. The primary aim is to trace the field's developmental trajectory, identify dominant themes, and detect emerging research frontiers. Using Scopus data in combination with Bibliometrix, Biblioshiny, and VOSviewer, this study generates a comprehensive scientific mapping that reveals both structural patterns and thematic evolutions, thereby clarifying the blind spots that warrant future attention.

The contributions of this study are twofold. From an academic perspective, findings confirm that smart tourism research has shifted from a technology centered focus to a hybrid agenda in which consumer behavior plays a central role. From a practical perspective, the study argues that businesses and destination managers must find a balance between technological innovation, tourist experience, and sustainable development. The paper is structured into five parts: the introduction outlines the background and objectives, the methodology presents the dataset and analytical techniques, the results highlight the key findings, the discussion interprets the implications, and the conclusion points to future research directions.

2. Research Methodology

This study employs bibliometric analysis to comprehensively explore scientific trends related to smart tourism and consumer behavior in recent years. The dataset was collected from Scopus, one of the largest and most reliable international academic databases, ensuring representativeness and reproducibility of results.

The search process was conducted through Scopus Advanced Search in September 2025 using a carefully designed combination of keywords. The query was as follows: *(TITLE ABS KEY("smart tourism" OR "smart tourism destination" OR "smart tourism technologies" OR "digital tourism" OR "smart hospitality" OR "smart travel technology") AND TITLE ABS KEY("consumer behavior" OR "tourist behavior" OR "tourism experience" OR "travel experience" OR "travel intention" OR "purchase intention" OR "adoption" OR "acceptance" OR "satisfaction" OR "loyalty" OR "trust")) AND (PUBYEAR > 2009 AND PUBYEAR < 2026).* At the same time, only studies published between 2018 and 2025 in English were retained to ensure consistency and relevance. Journal articles, conference papers, and review articles were included, while other formats such as books, book chapters, and editorials were excluded.

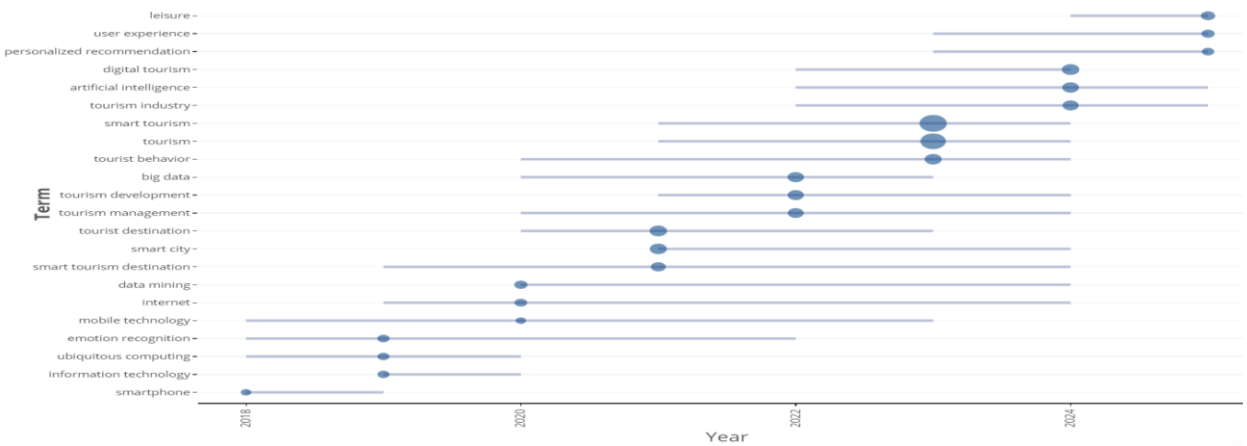
Once collected, the data were exported in BibTeX (.bib) format and processed using Bibliometrix in R combined with the Biblioshiny interface. Additionally, VOSviewer was employed to visualize scientific networks, providing a multidimensional view of the research landscape. Our analysis suggests that careful data cleaning was essential, which involved merging synonymous keywords such as consumer behaviour and consumer behavior or digital tourism and smart tourism, thereby reducing fragmentation and enhancing the accuracy of the results.

The analytical procedure was implemented in three steps. First, descriptive analysis covered indicators such as the number of publications, authors, journals, and country distribution. Second, structural analysis was conducted through techniques including keyword co occurrence networks, country collaboration maps, and co citation analysis. Third, content analysis applied tools such as thematic maps, thematic evolution, and three fields plots to clarify the developmental trajectory and identify emerging themes in smart tourism and consumer behavior research. Taken together, these procedures ensured that the study provided both a systematic overview and a nuanced interpretation of the field's evolution.

3. Findings

3.1 Keyword Trends over Time (2018–2025)

Figure 1. Keyword trends in smart tourism and consumer behavior research (2018–2025)



Source: Scopus dataset (2018–2025), visualization generated with Biblioshiny (R).

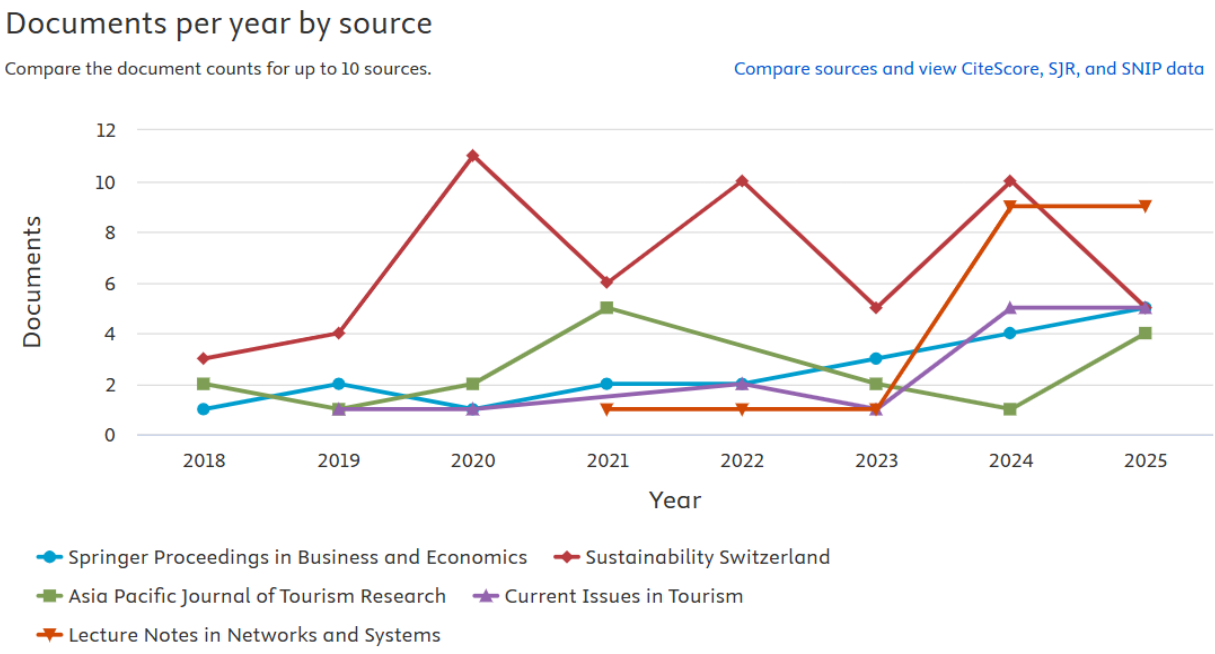
The visualization confirms that research themes gradually consolidated during the period 2018 to 2025. Our analysis suggests that early contributions primarily revolved around foundational technologies such as smartphones, ubiquitous computing, and mobile applications. These elements provided the infrastructure for digital interaction, yet they remained only loosely connected to discussions of tourist behavior. At the same time, since 2020 keywords such as tourism destination, tourism management, and smart destination began to dominate, reflecting a shift away from a purely technological orientation toward an integrated model linking digital transformation with management and travel experiences.

Notably, the appearance of terms such as tourist behavior, big data, and artificial intelligence after 2021 marked a turning point, as the research focus moved toward analyzing how digital tools reshape decision making processes and the experiential value of consumers. Findings confirm that the years 2022 to 2024 constituted the most dynamic phase, when expressions such as tourism, smart tourism, and digital tourism became central, while new concerns such as user experience and personalized recommendation emerged at the margins of scholarly debates.

Taken together, these trajectories indicate that the discourse on smart tourism has evolved from a technology driven foundation toward a consumer centered agenda. The study argues that this evolution not only creates opportunities for personalization but also emphasizes the urgent need to balance innovation with the sustainable development of destinations.

3.2 Leading Publication Sources

Figure 2. Leading publication sources on smart tourism and consumer behavior (2018–2025).



Source: Scopus dataset, extracted in September 2025.

The three fields plot reveals that research on smart tourism and consumer behavior has been concentrated in a limited number of influential publication outlets. Sustainability (Switzerland) stands out as the most dominant journal, establishing dense linkages with core topics such as tourism, smart tourism, and tourist behavior. Our analysis suggests that this reflects the increasingly evident convergence between sustainability concerns and digital tourism experiences. Other significant sources, including Current Issues in Tourism, Asia Pacific Journal of Tourism Research, and GeoJournal of Tourism and Geosites, demonstrate broader thematic coverage, frequently connected to research nodes such as tourism development and smart cities.

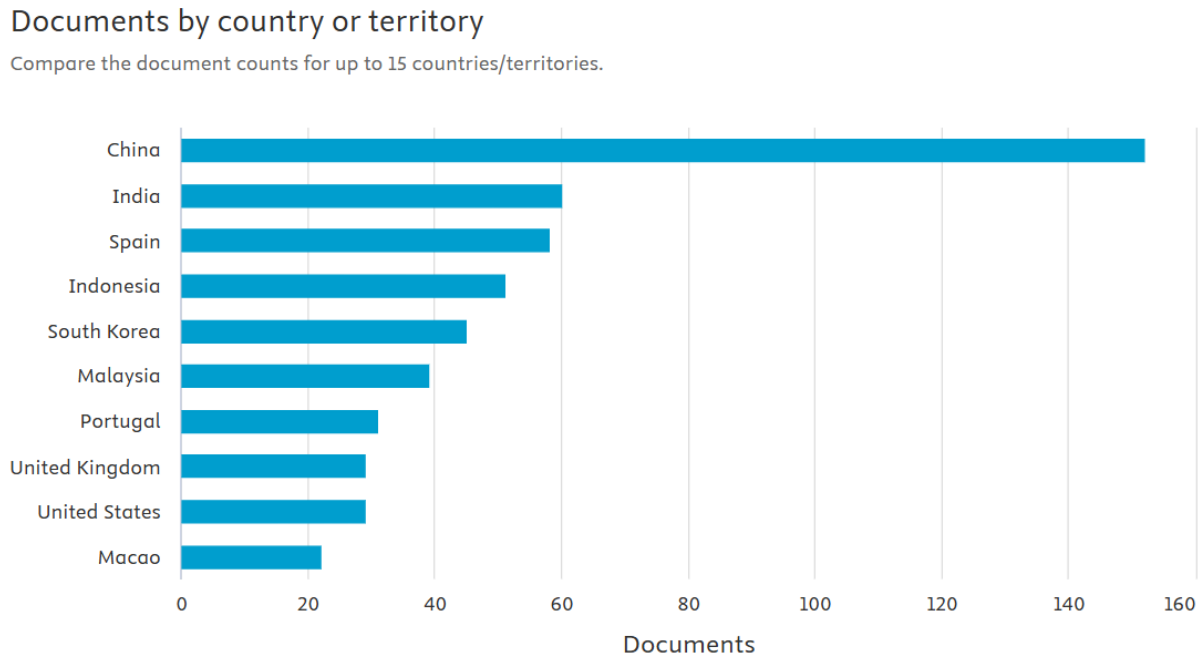
At the same time, the growing involvement of technically oriented journals such as Lecture Notes in Networks and Systems and Smart Innovation, Systems and Technologies signals an interdisciplinary turn. In particular, computer science is entering tourism studies more forcefully, bringing with it machine learning, big data analytics, and digitally mediated interactions. Findings confirm that several information science

journals have also started publishing work directly related to tourist behavior in digital environments, underscoring the expansion of the research frontier.

Taken together, this evidence highlights the increasingly interdisciplinary nature of the field. On the one hand, traditional tourism journals continue to anchor the debate around consumer and destination perspectives. On the other hand, multidisciplinary outlets encourage innovation by integrating technological and sustainability lenses. From a practical standpoint, the diversity of this publishing ecosystem offers substantial opportunities for both scholars and policymakers to disseminate knowledge on smart tourism and consumer behavior in the context of global digital transformation.

3.3 Top Publishing Countries

Figure 3. Top publishing countries in smart tourism and consumer behavior research (2018–2025).



Source: Scopus dataset, extracted in September 2025.

Source: Scopus dataset, extracted 2018–2025; visualization generated with Biblioshiny (R).

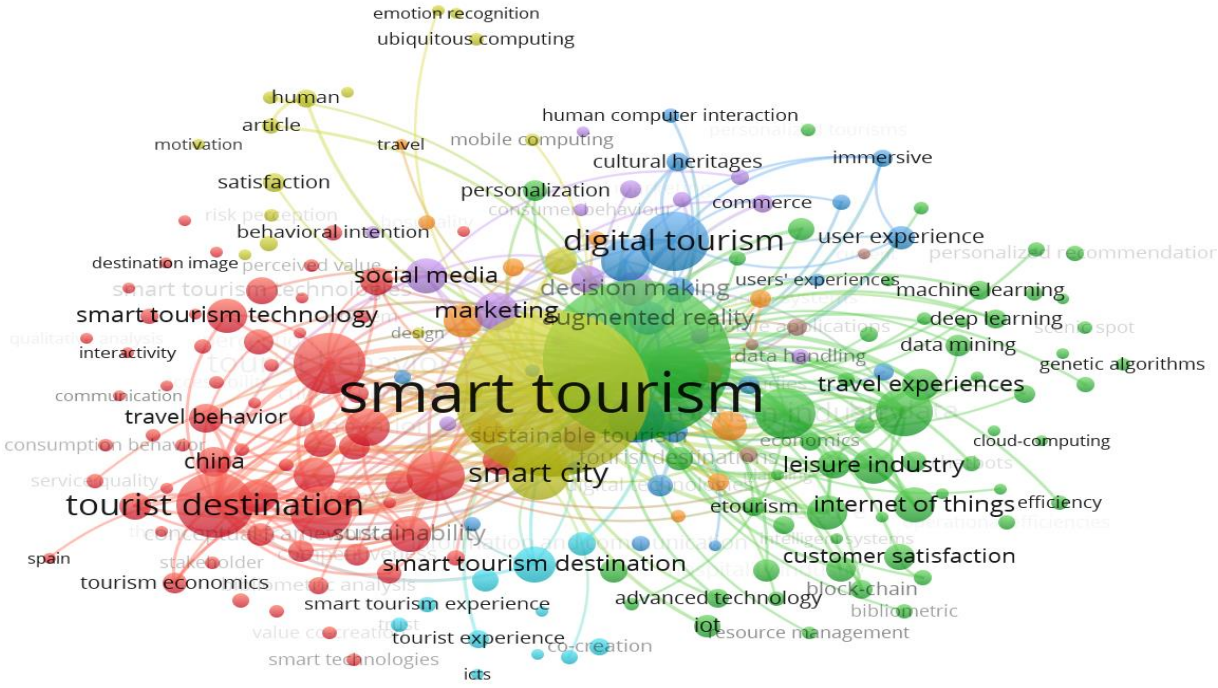
The evidence reveals a clear geographic imbalance in research outputs. China leads the field with more than 150 publications, far surpassing all other nations, while India and Spain follow in second place with around 60 papers each. At the same time, contributions from the United States and the United Kingdom remain relatively modest despite their long established academic infrastructure.

This distribution indicates that smart tourism and consumer behavior have become particularly prominent in the Asian context. Countries such as Indonesia, South Korea, and Malaysia have developed significant research streams, reflecting both governmental agendas for tourism digitalization and the rising demand for technology based experiences in the Asia Pacific region. By contrast, Southern European nations such as Spain and Portugal continue to play an important role by drawing on their strong tourism research traditions to integrate digital transformation into destination management.

Taken together, the findings confirm that research leadership in this field is no longer confined to the Western academic sphere but is increasingly driven by emerging economies. Our analysis suggests that the dominance of China and India reflects broader economic and policy priorities, in which smart tourism is positioned as both a strategic industry and a testing ground for consumer innovation. This shift carries important implications for global knowledge production. Although high impact contributions from Western institutions remain influential, the momentum in the Asia Pacific signals that future theoretical insights and practical applications are likely to emerge from contexts where digital adoption and tourism growth converge most strongly.

3.4 Keyword Co-occurrence Network

Figure 4. Keyword co-occurrence network in smart tourism and consumer behavior research (2018–2025).



Source: Scopus dataset (2018–2025), visualization generated with VOSviewer.

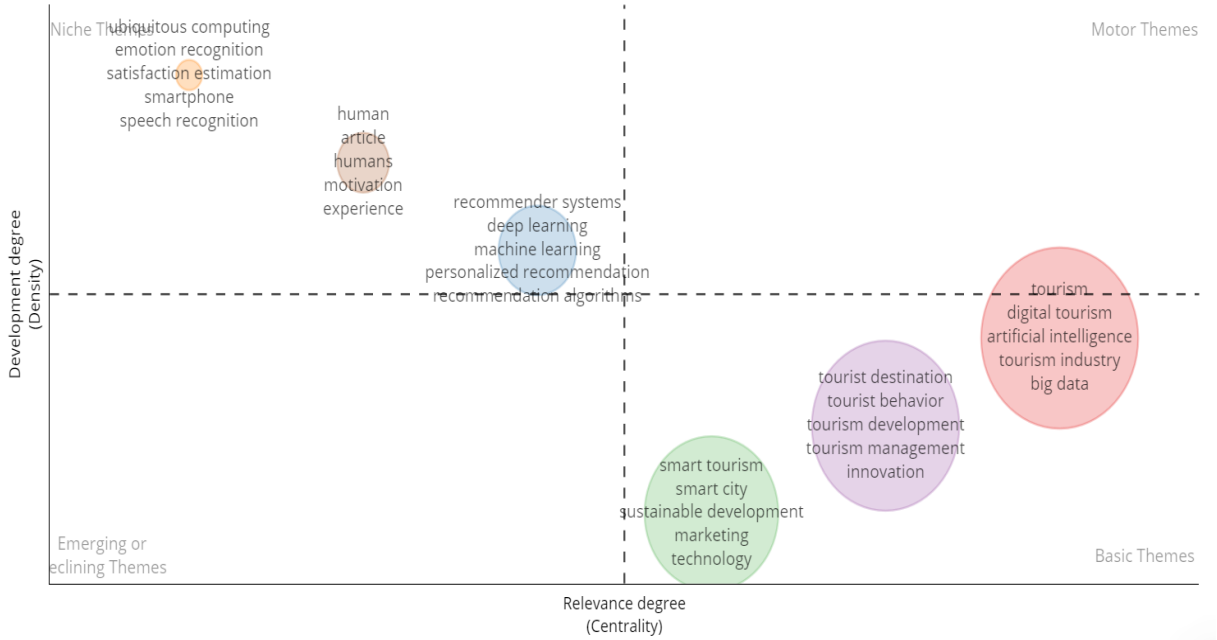
The visualization highlights the intellectual structure of research on smart tourism and consumer behavior. Four major clusters emerge, each representing a distinct but interconnected research stream. Our analysis suggests that smart tourism functions as a conceptual hub, bridging technological innovation with consumer-oriented perspectives.

The first cluster (red) focuses on tourism destinations, tourism economics, and consumer behavior, illustrating how smart tourism is tied to destination management and decision making processes. At the same time, the second cluster (green) emphasizes terms such as customer satisfaction, travel experience, machine learning, and the Internet of Things, reflecting growing scholarly attention to the ways digital technologies reshape consumer experiences and satisfaction metrics. Notably, the third cluster (blue) centers on digital tourism, user experience, and augmented reality, which points to the integration of immersive technologies and personalized services into the travel journey.

The fourth cluster (yellow) is oriented toward cross-cutting topics such as smart cities, social media, and marketing, indicating the interdependence between urban digital infrastructures, consumer engagement, and destination branding. Taken together, these clusters confirm the hybrid nature of the field. On the one hand, part of the discourse builds upon classical theories of tourism and consumer behavior; on the other hand, new trajectories are increasingly driven by rapid technological advances. The study argues that this convergence constitutes both a challenge and an opportunity for future research, particularly in integrating behavioral insights with digital transformation in a sustainable manner.

3.5 Thematic Map

Figure 5. Thematic map of smart tourism and consumer behavior research (2018–2025).



Source: Scopus dataset (2018–2025), visualization generated with Biblioshiny (R).

The thematic map illustrates the structural position of key topics in research on smart tourism and consumer behavior. In the lower right quadrant, representing basic themes, terms such as tourism, digital tourism, artificial intelligence, and big data appear. These topics are highly central but less developed, indicating their role as academic backbones that link technological innovation with classical tourism frameworks. Findings confirm that these themes provide the foundations upon which later research builds.

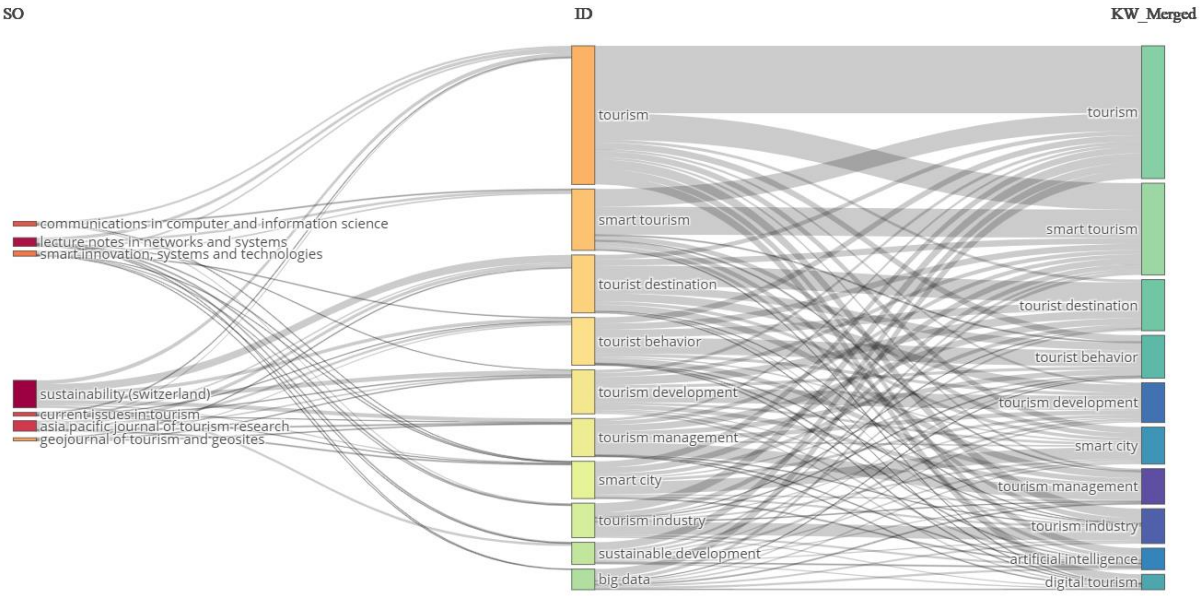
By contrast, topics such as tourist destination, tourist behavior, and tourism management are located closer to the core of the map, suggesting that behavioral perspectives remain indispensable in shaping the intellectual structure of the field. Their strong connections with technological terms highlight the growing integration between consumer behavior and digital innovation.

In the upper quadrants, specialized and emerging themes become visible. The upper left is populated by niche topics such as ubiquitous computing, emotion recognition, and speech recognition, which require technical sophistication but remain relatively underexplored in tourism. The upper right, associated with motor themes, features keywords such as machine learning, deep learning, and personalized recommendation. Our analysis suggests that these represent algorithm-driven approaches, enabling more advanced decision making and highly personalized travel experiences.

Taken together, the thematic map does more than visualize topic coverage; it reflects a deeper theoretical shift. Research has moved from basic technological infrastructures toward advanced algorithms and from destination-oriented views to consumer experience perspectives. From a strategic standpoint, this evolution creates opportunities to integrate artificial intelligence and tourist behavior within sustainable and personalized development frameworks. The study argues that these dynamics embody broader debates on how AI will reshape the tourism value chain in the digital age.

3.6 Intellectual Connections: Insights from the Three Fields Plot

Figure 6. Three fields plot linking publication sources, Keywords Plus, and author keywords (2018–2025).



Source: Scopus dataset (2018–2025), visualization generated with Biblioshiny (R).

The three fields plot provides a comprehensive visualization of the intellectual structure shaping research on smart tourism and digital transformation. Based on three dimensions—publication sources on the left, Keywords Plus in the center, and author keywords on the right—the figure clearly illustrates the conceptual linkages that underpin the academic network and the diffusion of knowledge across the field.

At the publication level, *Sustainability (Switzerland)* emerges as the most influential and prolific journal, maintaining strong connections with key topics such as tourism, smart tourism, and tourist behavior. Findings confirm that this reflects a growing convergence between sustainability concerns and the digital discourse shaping tourism experiences in the twenty first century. Other notable outlets, including *Current Issues in Tourism*, *Asia Pacific Journal of Tourism Research*, and *GeoJournal of Tourism and Geosites*, display wide thematic coverage, contributing significantly to nodes such as tourism development and smart cities.

Within the conceptual core, the keyword tourism occupies a central position, linking robustly to both sources and adjacent terms. The interconnections among tourism, smart tourism, tourist destinations, and tourist behavior continue to reinforce the centrality of consumer experience and digital interfaces in contemporary research. At the same time, the rising prominence of new terms such as artificial intelligence, big data, and digital tourism on the right side of the plot signals a perceptual shift from traditional approaches to technology oriented and algorithm driven discourses.

Equally significant is the growing presence of technically oriented journals such as *Lecture Notes in Networks and Systems* and *Smart Innovation, Systems and Technologies* in this research space. Our analysis suggests that computer science and data analytics are no longer peripheral but are becoming integral to explaining how digital infrastructures influence tourist behavior and shape experience design.

Taken together, the three fields plot not only identifies key conceptual clusters but also reveals the institutional pathways through which knowledge circulates. From an applied perspective, the study argues that future research will benefit from deeper integration between technological innovation and human centered tourism development, particularly within theoretical frameworks that prioritize sustainability, humanistic design, and destination resilience.

4. Discussion

The findings presented in Chapter 3 reveal several prominent trends in research on smart tourism and consumer behavior. Our analysis suggests that these results not only reflect the academic evolution of the

field but also generate meaningful implications for destinations, tourism businesses, and policymakers in the digital transformation era.

First, the trajectory from 2018 to 2020 underscores the foundational role of digital technologies such as smartphones, ubiquitous computing, and mobile data. These technologies acted as the technical infrastructure enabling the emergence of digital interaction models, yet they remained only loosely connected to deeper analyses of tourist behavior. From 2020 onwards, however, the shift toward themes such as smart tourism destinations and tourism management signals an integrative phase in which digital technologies are tied more closely to governance and user experiences. Taken together, this confirms that digital transformation in tourism is not merely a technological phenomenon but a process of restructuring the ecosystem of tourist experiences (Gretzel et al., 2020).

Second, the geographic distribution of publications confirms the rising prominence of Asia, particularly China and India, as new centers of knowledge production. By contrast, this pattern departs from the traditional dominance of Western scholarship and highlights how innovation is increasingly driven by emerging economies, where governments and industries invest heavily in tourism digitalization (Li et al., 2023). The study argues that this shift has important implications for future research design, as local contexts and institutional priorities must be incorporated to capture the realities of global tourism transformation.

Third, the keyword co-occurrence network and thematic map emphasize the hybrid nature of the field. On one side, classical topics such as tourist behavior, satisfaction, and destination management remain central pillars; on the other side, emerging technologies including artificial intelligence, machine learning, and augmented reality are increasingly positioned as motor themes. Findings confirm that this convergence implies tourist behavior in the digital era cannot be explained by single theoretical frameworks but instead requires integration between behavioral sciences and data-driven approaches.

Fourth, the three fields plot demonstrates that the publishing landscape is becoming more fragmented yet also more interdisciplinary. Traditional tourism journals continue to anchor consumer and destination perspectives, while technically oriented outlets contribute algorithmic and computational insights. This duality presents both opportunities and challenges. On the one hand, there is potential to develop predictive models of behavior and optimize tourist experiences; on the other hand, there is a need to preserve humanistic perspectives and ensure sustainability when applying new technologies.

Taken together, the discussion confirms that discourse on smart tourism has evolved from technology-driven foundations toward consumer-centered agendas. Our analysis suggests that this dual trajectory creates two simultaneous demands. One is to harness technology to deliver more personalized and immersive experiences. The other is to balance such innovation with sustainability and destination resilience. In other words, smart tourism in the coming decade must be understood as a process that is both technological and humanistic, where digital transformation only achieves its purpose when it enhances consumer value while contributing to the long-term sustainability of the tourism industry.

5. Conclusion and Future Research Directions

This study examined the intersection of smart tourism and consumer behavior through a bibliometric analysis of Scopus publications from 2018 to 2025. Findings confirm that the field has grown rapidly, moving from a focus on basic digital technologies toward an integrated agenda where consumer behavior, personalization, and immersive experiences are central. At the same time, our analysis suggests that the geographic landscape of knowledge production has shifted significantly, with Asia, particularly China and India, emerging as leading contributors to the discourse.

From an academic perspective, the study argues that smart tourism research has transformed from a technology centered paradigm into a hybrid model where behavioral perspectives play a pivotal role. The identification of clusters such as tourist behavior, digital tourism, immersive technologies, and smart cities highlights how the field has become increasingly interdisciplinary, bridging tourism studies, information systems, and sustainability science. From a practical perspective, findings confirm that balancing innovation with sustainable destination development is essential for creating competitive yet human centered smart tourism strategies.

Future research should build on these insights in several directions. First, empirical studies are needed to validate how emerging technologies such as artificial intelligence, machine learning, and big data

analytics influence consumer decision making and experiential value. Second, comparative research across countries and regions could clarify how local contexts and institutional settings shape the adoption of smart tourism practices. Third, integrating behavioral theories with computational models would allow scholars to capture the complexity of consumer engagement in the digital era. Finally, future agendas should prioritize sustainability by investigating how digital innovation can be aligned with ecological responsibility and social well being, ensuring that smart tourism contributes not only to economic competitiveness but also to resilient and inclusive development.

Taken together, the findings provide both theoretical and practical contributions. On the one hand, they offer a comprehensive mapping of intellectual structures and thematic evolutions in smart tourism and consumer behavior research. On the other hand, they highlight pathways for scholars, practitioners, and policymakers to design strategies that are technologically advanced, consumer centered, and sustainable in the long run. In short, smart tourism in the next decade must be understood not only as a technological transformation but also as a humanistic and sustainable agenda that redefines the value of tourism in the digital age.

References

1. Buhalis, D., & Amaranggana, A. (2015). Smart tourism destinations and the personalization of travel services. In I. Tussyadiah & A. Inversini (Eds.), *Information and communication technologies in tourism* (pp. 377–389). Cham: Springer. https://doi.org/10.1007/978-3-319-14343-9_28
2. Del Chiappa, G., & Baggio, R. (2015). Knowledge transfer in smart tourism: Network structures and their influence. *Journal of Destination Marketing & Management, 4*(3), 145–150. https://doi.org/10.1016/j.jdmm.2015.02.001
3. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). Bibliometric research: An overview with guidelines. *Journal of Business Research, 133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070
4. Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015). Conceptual foundations for smart tourism ecosystems. *Computers in Human Behavior, 50*, 558–563. https://doi.org/10.1016/j.chb.2015.03.043
5. Guttentag, D. (2015). Airbnb and the disruption of tourism accommodation: Innovation and challenges. *Current Issues in Tourism, 18*(12), 1192–1217. https://doi.org/10.1080/13683500.2013.827159
6. Ivanov, S., & Webster, C. (2019). Robotics and the future of tourism: Directions for research. *Annals of Tourism Research, 78*, 102743. https://doi.org/10.1016/j.annals.2019.102743
7. Jeong, M., Shin, H., & Koo, C. (2019). Smart tourism and customer experience: A bibliometric review and future agenda. *Sustainability, 11*(14), 3772. https://doi.org/10.3390/su11143772
8. Koo, C., Kim, J., & Lee, J. (2016). ICT applications in smart tourism: Roles and implications. *Asia Pacific Journal of Information Systems, 26*(4), 481–496. https://doi.org/10.14329/apjis.2016.26.4.481
9. Law, R., Chan, I. C. C., & Wang, L. (2018). Mobile technology in tourism and hospitality: A review of its applications. *Journal of Hospitality and Tourism Technology, 9*(2), 239–255. https://doi.org/10.1108/JHTT-08-2017-0073
10. Li, J., Xu, L., Tang, L., Wang, S., & Li, L. (2018). Big data research in tourism: A systematic review. *Tourism Management, 68*, 301–323. https://doi.org/10.1016/j.tourman.2018.03.009
11. Li, Y., Hu, C., Huang, C., & Duan, L. (2017). Defining smart tourism within information service contexts. *Tourism Management, 58*, 293–300. https://doi.org/10.1016/j.tourman.2016.03.014
12. López de Ávila, A., & García, J. (2015). Smart destinations and the future of tourism. *Journal of Tourism Futures, 1*(1), 9–15. https://doi.org/10.1108/JTF-12-2014-0004
13. Mariani, M. M., & Borghi, M. (2021). AI-enabled chatbots and consumer evaluation in tourism: Moderating role of innovativeness. *International Journal of Contemporary Hospitality Management, 33*(10), 3350–3370. https://doi.org/10.1108/IJCHM-05-2020-0442
14. Marine-Roig, E., & Anton Clavé, S. (2015). Tourism analytics and user-generated content: The case of Barcelona. *Journal of Destination Marketing & Management, 4*(3), 162–172. https://doi.org/10.1016/j.jdmm.2015.05.004

15. Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Personalized tourism experiences through smart technologies: Insights from hospitality. *Electronic Markets, 25*, 243–254. https://doi.org/10.1007/s12525-015-0182-1
16. Shen, S., & Han, H. (2020). The future of smart tourism: Trends and implications. *Tourism Review, 75*(1), 109–121. https://doi.org/10.1108/TR-06-2019-0249
17. Sigala, M. (2018). Social media and customer engagement in smart tourism contexts. *The Service Industries Journal, 38*(6), 402–419. https://doi.org/10.1080/02642069.2017.1420170
18. Tsai, C. H., Wu, H. C., & Huang, C. (2020). Mobile tourism applications and perceived service quality: An evaluation. *Journal of Hospitality and Tourism Management, 45*, 42–50. https://doi.org/10.1016/j.jhtm.2020.06.009
19. Xiang, Z., Du, Q., Ma, Y., & Fan, W. (2017). Online review analytics in hospitality and tourism: Implications for social media research. *Tourism Management, 58*, 51–65. https://doi.org/10.1016/j.tourman.2016.10.001
20. Zhang, J., Li, X., & Chen, W. (2022). Artificial intelligence in tourism research: A bibliometric analysis. *Journal of Hospitality and Tourism Technology, 13*(4), 725–745. https://doi.org/10.1108/JHTT-08-2021-0195