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ORIGINAL

Trends and evolution of research on smart tourism destinations in Latin America

Tendencias y evolución de la investigación sobre destinos turísticos inteligentes en América Latina

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ABSTRACT

Introduction: the study analyzed the evolution of research on smart tourism destinations in Latin America, a field that integrates technology, sustainability, and tourism management.
Method: the bibliometric method was applied to examine the scientific production indexed in the Scopus database between 2010 and 2024. Data were processed using the Biblioshiny tool, based on the Bibliometrix package in RStudio. Indicators of productivity, collaboration, and thematic trends were analyzed, considering authors, institutions, publication sources, and keywords.
Results: the findings revealed a sustained growth in scientific production since 2018, reaching its peak in 2021. Brazil led regional output, followed by Colombia and Ecuador. The predominant themes focused on digitalization, sustainability, and visitor experience, with an increasing incorporation of emerging technologies such as artificial intelligence, the Internet of Things (IoT), and augmented reality.
Conclusions: research on smart tourism destinations demonstrated progressive maturity, although challenges remain in scientific collaboration, public policy, and technological application. Strengthening academic networks and promoting sustainable innovation in Latin American tourism are recommended.

Keywords: Digital Transformation; Technological Innovation; Tourism Governance; Sustainability; Artificial Intelligence.

RESUMEN

Introducción: el estudio analizó la evolución de la investigación sobre destinos turísticos inteligentes en América Latina, un campo que integra tecnología, sostenibilidad y gestión turística.
Método: se aplicó el método bibliométrico para examinar la producción científica indexada en la base de datos Scopus entre 2010 y 2024. La información fue procesada con la herramienta Biblioshiny, basada en el paquete Bibliometrix de RStudio. Se analizaron indicadores de productividad, colaboración y tendencias temáticas, considerando autores, instituciones, fuentes de publicación y palabras clave.
Resultados: los hallazgos mostraron un crecimiento sostenido de la producción científica a partir de 2018, alcanzando su punto más alto en 2021. Brasil lideró la producción regional, seguido por Colombia y Ecuador. Los temas predominantes se centraron en la digitalización, la sostenibilidad y la experiencia del visitante, con una creciente incorporación de tecnologías emergentes como inteligencia artificial, IoT y realidad aumentada
Conclusiones: la investigación sobre destinos turísticos inteligentes evidenció una madurez progresiva, aunque persisten desafíos en colaboración científica, políticas públicas y aplicación tecnológica. Se recomienda fortalecer redes académicas y fomentar la innovación sostenible en el turismo latinoamericano.

Palabras clave: Transformación Digital; Innovación Tecnológica; Gobernanza Turística; Sostenibilidad; Inteligencia Artificial.

INTRODUCTION

The concept of a Smart Tourism Destination (STD) has emerged as an evolution of traditional tourism toward a model based on the efficient management of resources through the use of digital technologies, environmental sustainability, and participatory governance.[1,2,3] An STD integrates technological infrastructures, innovation, universal accessibility, and sustainable strategies to enhance both the visitor experience and residents' quality of life.[4] This approach combines digitalization with territorial planning and data intelligence to optimize decision-making processes within the tourism sector.[5,6]

In Latin America, the development of smart tourism destinations has gained relevance over the past decade as a response to the need to modernize tourism systems and strengthen international competitiveness.[7,8,9] However, the adoption of this model shows significant differences among countries due to factors such as technological infrastructure, institutional capacity, and public investment in innovation.[10,11,12] Despite the growing interest, academic literature in the region still exhibits conceptual and methodological dispersion, which makes it difficult to identify common patterns and sustainable progress.[13,14]

The causes of this fragmentation are associated with the limited availability of open data on tourism management, the scarce scientific collaboration among regional institutions, and the absence of public policies oriented toward the digital transformation of tourism.[15,16,17] Moreover, academic production has mainly focused on isolated case studies and descriptive approaches, without articulating solid research lines on STDs in the Latin American context. This situation has limited the global visibility of research and the transfer of knowledge among countries.[13,18,19]

As a consequence, the region faces difficulties in building a scientific foundation that can guide strategic decision-making and the design of intelligent tourism policies.[20,21] The lack of integration of research findings prevents full utilization of opportunities provided by data analytics, the Internet of Things, and artificial intelligence in destination management. Likewise, the absence of a regional vision limits the ability to generate comparative indicators on innovation, sustainability, and digitalization in Latin American tourism destinations.[22,23,24]

Although there are literature reviews on smart tourism in different geographical contexts, few studies have systematically analyzed the evolution of Latin American scientific production in this field. An updated overview that identifies collaboration networks, emerging topics, and research trends on Smart Tourism Destinations (STDs) in the region is still lacking. This gap restricts understanding of theoretical progress and the orientation of future research toward priority areas for sustainable tourism development.

In this context, the present study aimed to analyze the trends and evolution of research on Smart Tourism Destinations in Latin America during the period 2010–2025. Using a bibliometric approach based on the Scopus database, the study sought to identify scientific productivity, the most influential authors and countries, collaboration networks, and emerging research themes. The results are expected to provide empirical evidence on the dynamics of knowledge production and to guide new research directions toward a more innovative and sustainable approach to tourism management in the region.

METHOD

The bibliometric method was applied, which allows for a quantitative analysis of the production, impact, and trends of scientific research on a specific topic, providing a comprehensive view of its evolution within the academic field. This approach is particularly suitable for identifying publication patterns, collaboration networks, thematic concentration, and research gaps. The indicators evaluated included: annual scientific production, most productive publication sources, institutions with the highest number of studies, most frequent keywords, international collaboration networks, and thematic trend maps.

The information was obtained from the Scopus database, selected for its broad multidisciplinary coverage and its concentration of high-impact scientific literature. The period of analysis covered 2010 to 2024, applying the following search string in the title, abstract, and keyword fields: ("smart tourist destination" OR "smart destination" OR "smart tourism" OR "smart tourist city"). A total of 2 095 documents were initially identified; after applying filters by year range and document type (articles, conference papers, book chapters, and reviews), the sample was reduced to 1,740 records. When delimiting the scientific production corresponding to Latin America, a total of 65 documents were obtained.

The records were exported in CSV format and processed using the Biblioshiny tool, developed by Aria et al. [25], which operates on the Bibliometrix package within the RStudio environment. This procedure made it possible to generate indicators of productivity, collaboration, and thematic trends that support the analysis of

the scientific evolution of Smart Tourism Destinations.

RESULTS

Scientific production on STDs shows a general upward trend throughout the analyzed period. In the early years, the number of publications was limited, reflecting an initial and emerging interest in the topic. From 2018 onward, sustained growth can be observed, reaching its highest point around 2021, which indicates the consolidation of the field and increasing academic attention toward digitalization and sustainability in tourism destinations. Although a slight decline was noted in 2022, the subsequent rebound confirms the continuity of research interest and the progressive maturity of this line of study within the scientific community (figure 1).

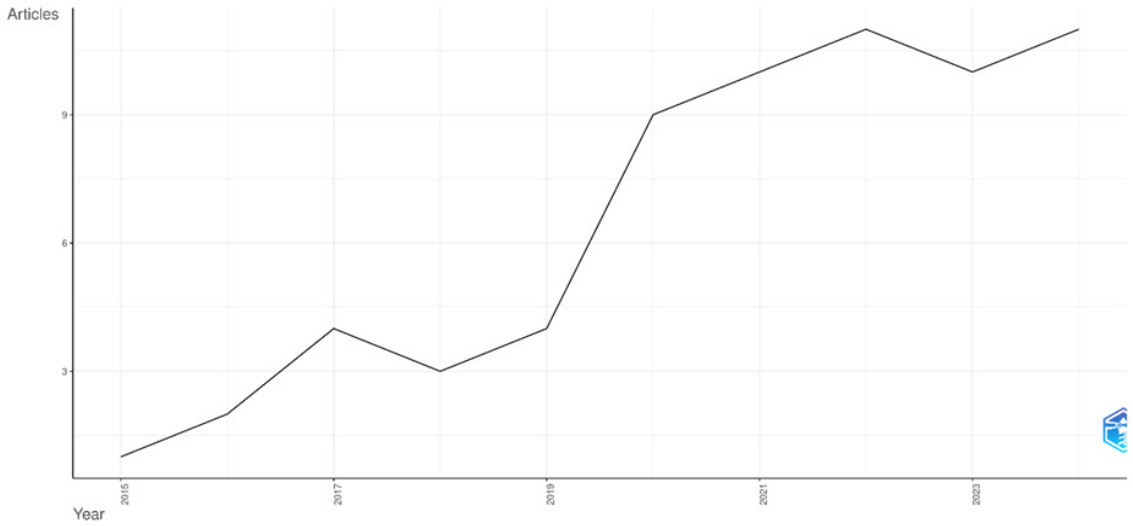

Figure 1. Annual scientific production

Furthermore, figure 2 shows that scientific production on STDs is concentrated within a small group of journals and conference proceedings specializing in technology, sustainability, and intelligent systems. The Revista Ibérica de Sistemas e Tecnologias de Informação (RISTI) leads the ranking with five publications, followed by Communications in Computer and Information Science and Sustainability (Switzerland), each with four documents. This pattern suggests that research on the topic maintains a distinctly technological and interdisciplinary orientation, where the management of tourism destinations is closely linked to digital innovation, sustainability, and the development of intelligent systems applied to tourism.

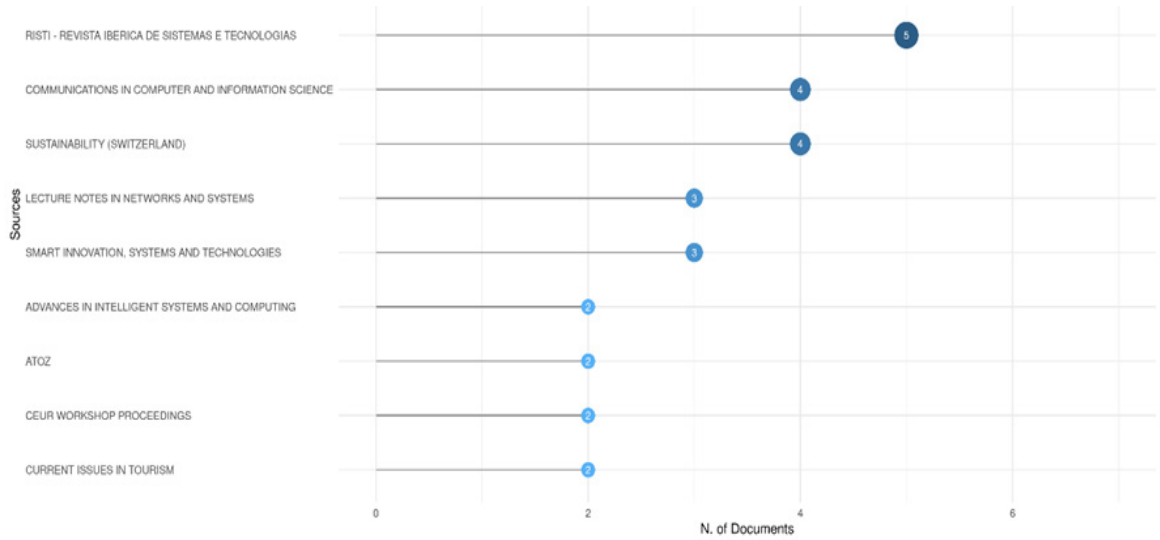

Figure 2. Top 10 most productive publication sources

Figure 3 shows that the Universidade Federal Fluminense (Brazil) leads scientific production on STDs, with a total of nine articles, establishing itself as the institution with the greatest contribution to the field. It is followed by the Pontificia Universidad Javeriana (Colombia), the Universidad Nacional de Tierra del Fuego (Argentina), and the Universidad Politécnica Salesiana (Ecuador), each with five publications, reflecting the

active participation of Latin American institutions in knowledge generation. In the second group, the University of Málaga (Spain), the Universidade Estadual do Oeste do Paraná, the Universidade Federal de Santa Catarina, the Universitat d'Alacant, the Faculty of Natural Resources, and the Brazilian School of Public and Business Administration stand out, with between three and four contributions each. This pattern reveals a diverse and transnational academic network, in which Latin America and Europe maintain significant collaboration in research on Smart Tourism Destinations.

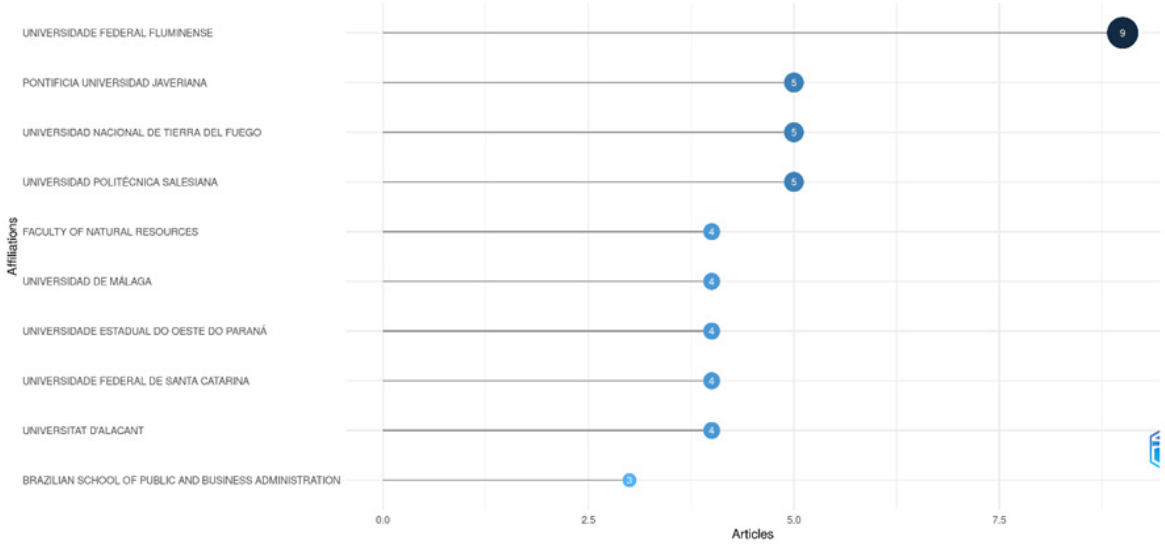

Figure 3. Top 10 institutions with the highest number of publications

Regarding the most recurrent keywords in the literature on STDs, they revolve around the concepts "smart tourism," "smart tourism destination," "smart destination," and "smart city," which structure the thematic core of the field. The prominent presence of terms such as "innovation," "technology," "information and communication technologies (ICTs)," and "sustainability" reveals the multidimensional orientation of this approach, which combines digital transformation, sustainable management, and innovation in the planning of tourism destinations. Furthermore, the emergence of expressions such as "augmented reality," "Internet of Things (IoT)," and "social media" suggests an increasing incorporation of advanced technological tools in tourism management and visitor experience. Taken together, this map of terms reflects the consolidation of the Smart Tourism Destination paradigm as an intersection between tourism, technology, and sustainability.

Figure 4. Most frequent keywords

Furthermore, figure 5 shows that international scientific collaboration networks on STDs are led by Brazil, which acts as the central node by establishing links with European countries such as Spain, Portugal, and the United Kingdom, as well as with Latin American nations including Ecuador, Colombia, and Peru. This positioning highlights Brazil as the main knowledge hub in the region. Additionally, emerging sub-networks were identified,

such as the one formed by Mexico, Chile, and the Czech Republic, and another comprising Argentina, Venezuela, and Bulgaria, indicating a still fragmented yet expanding pattern of scientific cooperation. Overall, the network reflects a South–North collaboration dynamic, in which Europe remains a strategic partner for the development of Latin American research on Smart Tourism Destinations.

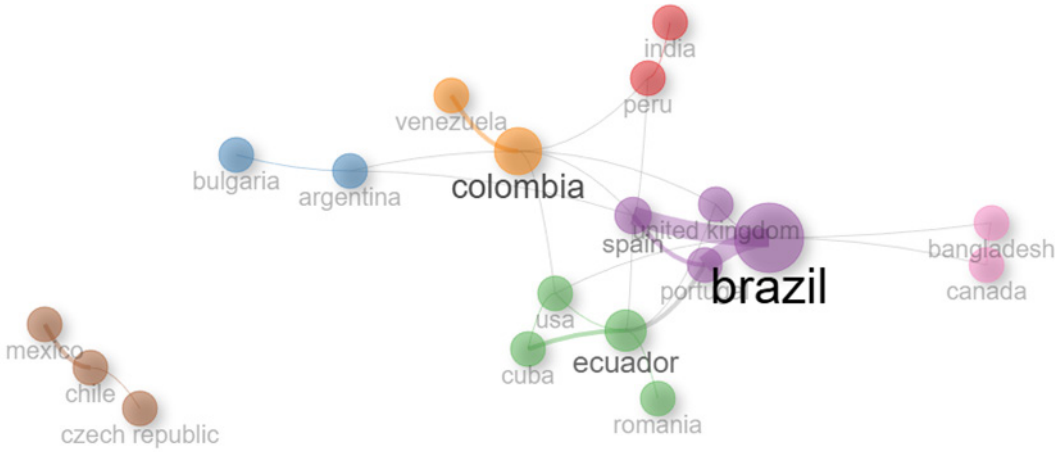

Figure 5. Collaboration networks among countries

Figure 6 presents the thematic trend map, which organizes the main research axes on STDs according to their level of development and conceptual relevance. In the upper right quadrant (Motor Themes) are the topics "smart tourism destination," "smart destination," and "tourism," which are considered consolidated and highly influential cores within the field, as they articulate studies on digitalization, smart management, and destination competitiveness.

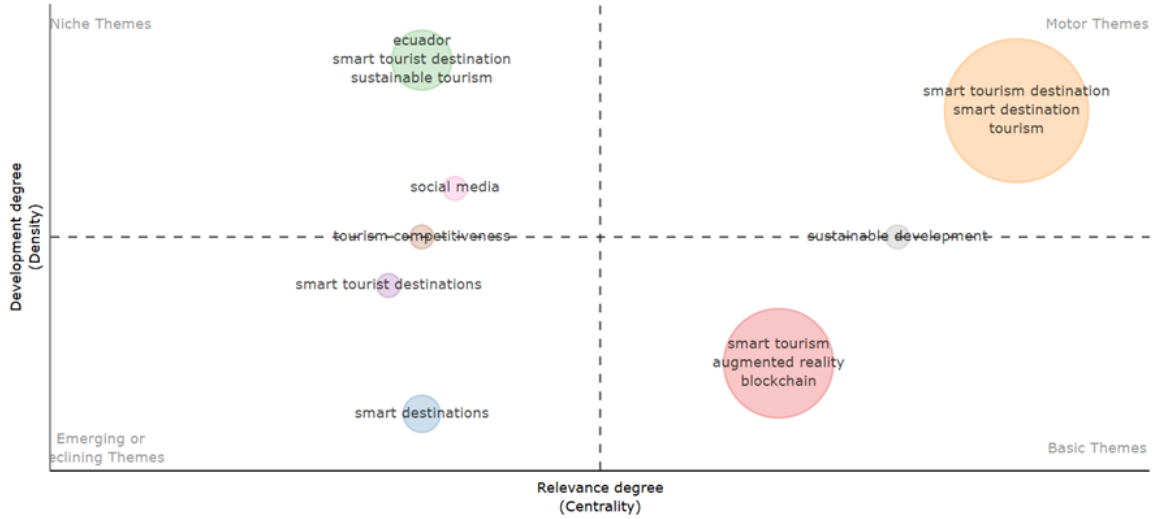

Figure 6. Thematic trend maps

In the lower right quadrant (Basic Themes), the topics "smart tourism," "augmented reality," and "blockchain" appear as expanding technological foundations that support innovation in the tourism experience. In the upper left quadrant (Niche Themes), the themes "sustainable tourism," "Ecuador," and "smart tourist destination" stand out, associated with more specialized and regionally contextualized research. Finally, the lower left quadrant (Emerging or Declining Themes) includes concepts such as "smart destinations" and "tourism competitiveness," which represent research lines with lower density but with potential to evolve toward more integrated approaches combining sustainability, technology, and governance in smart tourism.

DISCUSSION

The results confirm that research on STDs has shown sustained growth in recent years, consolidating itself as a priority line of inquiry at the intersection of tourism, technology, and innovation. This increase coincides with the findings of Shafiee et al.[5], who argue that the expansion of the STD concept responds to the need to transform tourism management toward digital, sustainable, and data-driven models. In the Latin American

context, this trend reflects the progressive adoption of technology in destination management, although it still faces limitations in infrastructure, training, and public policy.

The concentration of publications in technological and multidisciplinary journals confirms the cross-cutting nature of the field, where approaches from smart cities, smart tourism, and smart destination governance converge. This result aligns with the assertions of Ercan[1] and Matyusupov et al.[2], who emphasize that STDs integrate urban, technological, and social dimensions oriented toward sustainability and the digital visitor experience. However, the predominance of technically focused studies underscores the need to incorporate social and managerial perspectives that address the impact of smart tourism on local communities and residents' well-being.

In terms of scientific collaboration, the findings reveal the leadership of Brazil, Spain, and Colombia as key articulators of research on STDs, consistent with the observations of Buhalis et al. [15], who highlight that international partnerships are essential to strengthen smart tourism ecosystems. Nonetheless, the fragmentation of Latin American networks indicates a low density of regional collaboration, supporting the argument of El Archi et al.[20], who stress the importance of promoting South–South cooperation to reduce dependence on European-generated knowledge and to foster innovation models adapted to local realities.

From a thematic perspective, the results show that the concepts "smart tourism destination," "smart destination," and "tourism" constitute the central axes of scientific production, while topics such as "augmented reality," "IoT," and "blockchain" are emerging as rapidly expanding technological areas. This finding is consistent with Suanpang and Pothipassa[6], who highlight the integration of artificial intelligence and the Internet of Things as key factors for sustainability and the personalization of the tourist experience. Likewise, the positioning of "sustainable tourism" as a specialized topic reaffirms the incorporation of sustainable development goals, as proposed by Kusumastuti et al.[23]

Overall, the results demonstrate the progressive maturity of the field, although challenges remain related to regional fragmentation, limited Spanish-language production, and the insufficient implementation of tourism innovation policies. Several authors concur that consolidating STDs in Latin America requires an integrated vision that combines technology, sustainability, and participatory governance.[5,15,20,23] In this regard, it is essential to promote collaborative academic networks, strengthen knowledge transfer, and foster tourism digitalization strategies that enhance the competitiveness of Latin American destinations within the global framework of digital transformation.

CONCLUSIONS

The study revealed that research on Smart Tourism Destinations (STDs) experienced sustained growth between 2010 and 2024, establishing itself as a strategic line of study at the intersection of tourism, technology, and innovation. The results show a thematic evolution that integrates sustainability, digitalization, and intelligent destination management, reflecting the progressive maturity of the field and its relevance to the transformation of the tourism sector. Furthermore, a higher concentration of publications was identified in countries with advanced technological infrastructure, along with active participation from Latin American institutions, demonstrating a gradual expansion of scientific interest in the region.

Nevertheless, important challenges remain, particularly those related to the fragmentation of academic production, limited regional cooperation, and the insufficient incorporation of social and governance perspectives in studies on Smart Tourism Destinations. In this regard, strengthening scientific collaboration, promoting public policies focused on innovation, and fostering the adoption of sustainable technologies are essential actions to consolidate smart tourism ecosystems in Latin America. These advances will contribute to enhancing the competitiveness, resilience, and sustainability of destinations within the broader context of global digital transformation.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Research: Greysi Samantha Cotrina-Coral.
Methodology: Greysi Samantha Cotrina-Coral.
Drafting - original draft: Greysi Samantha Cotrina-Coral.
Writing - proofreading and editing: Greysi Samantha Cotrina-Coral.