Smart tourism destinations: an overview of current research trends and a future research agenda

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Abstract

Purpose – This study aims to provide an overview of the evolution of knowledge on smart destinations and identify the key issues addressed in the smart destination research domain, the main themes and sub-themes and research gaps in smart destination research as well as the future research agenda to address those gaps.

Design/methodology/approach – A bibliometric analysis of 409 studies published on smart destinations literature was conducted using the Bibliometrix R-package to provide a comprehensive review of studies published on smart destinations and identify the main research themes, gaps in the literature and future research opportunities.

Findings – Based on the research findings, a conceptual model of smart destination research has been proposed. This conceptual model can serve as a foundation for further knowledge generation in this research area. The findings also shed light on future research directions, highlighting research opportunities for the exploitation of cutting-edge innovations and digitalization across various dimensions of smart destinations.

Originality/value – Although past research has paid attention to the theme of smart destinations, this work advances scientific knowledge by providing a foundation for a new smart destination management paradigm focusing on accessibility, sustainability, digitization, experience co-creation and creativity as milestones.

Keywords Smart, Destination, Tourism, Destination management, Bibliometric

Paper type Literature review

智慧旅游目的地：当前研究趋势概述及未来研究议程

摘要

研究目的 – 本研究旨在提供关于智慧目的地知识演变的概览，并确定智慧目的地研究领域中涉及的关键问题、主要主题和子主题，以及智慧目的地研究的研究空白，同时提出未来研究议程以填补这些空白。

研究方法 – 本研究利用 Bibliometrix R 软件对发表的409篇智慧目的地文献进行了文献计量分析，以全面回顾关于智慧目的地的研究，并确定主要研究主题、文献中的空白以及未来的研究机会。

研究发现 – 基于研究结果，本研究提出了智慧目的地研究的概念模型。该概念模型可作为进一步知识生成的基础。研究发现还为未来研究方向提供了启示，强调了利用先进创新和数字化技术在智慧目的地各个维度上进行研究的机会。

Declaration of interest: none.

研究创新 – 尽管过去的研究关注了智慧目的地的主题, 但本研究通过提出以可达性、可持续性、数字化、体验共创和创意为里程碑的新智慧目的地管理范式,推进了科学知识的发展。

关键词 智慧, 目的地, 旅游, 目的地管理, 文献计量

文章类型 文献综述

1. Introduction

The ongoing development of information and communication technology (ICT) has induced significant changes in many fields, including the tourism industry. The ongoing advancement of technology has affected not only tourist experiences and the decision-making process but also destinations and the experience delivery process (Azis *et al.*, 2020), leading to the rise of "smart destinations." The concept of "smart destination" has become an important research topic for academia as well as a challenge for policymakers (Williams *et al.*, 2020) and, above all, for destination management organizations (DMOs) (Baggio *et al.*, 2020). Smart destinations, as an extension of smart cities, provide the ICT infrastructure needed to deliver customized tourism services that can satisfy visitors' needs (Lee *et al.*, 2021). Because smartness is a much broader concept that involves sustainability, governance, mobility, economic productivity and tourist-resident interactions, smart tourism destinations can improve and sustain their competitiveness, add value for all stakeholders and create better visitor experiences (Sorokina *et al.*, 2022).

Previous studies investigated the characteristics of smart cities, smart city development, the digitalization of destinations, the accessibility of smart cities, the effects of a destination's smartness on experience creation and delivery and the effects on traveler's attitudes and behaviors, among other aspects (Mandić and Garbin Praničević, 2019). While the findings of these studies made significant contributions to practical and theoretical knowledge development and the maturing of the field, an organized and systematic assessment of the current literature can provide important insights on knowledge development patterns in the field and help identify research gaps, thereby providing directions for future studies. Accordingly, this study lays the groundwork for a novel smart destination management paradigm centering on key pillars such as accessibility, sustainability, digitization, experience co-creation and creativity. Previous research explored various aspects of smart cities, including their characteristics, development, digitalization and accessibility (Bastidas-Manzano *et al.*, 2021). However, none of these studies focused specifically on the distinctive domains of smart destinations. Thus, this research is a pioneering endeavor in exploring uncharted aspects within the field. To that end, this study aims to contribute to the smart destination debate by identifying research trends, themes and methodologies through a comprehensive review of the literature utilizing the bibliometric analysis methodology. More specifically, this study aims to explore:

- the evolution of scientific knowledge on smart destinations over the years;
- the key issues addressed in the smart destination research domain;
- the main themes and sub-themes; and
- research gaps in smart destination research and the future research agenda to address those gaps.

The theoretical background of the present study is represented by the open innovation approach described in Section 1. In addition, a comprehensive review of smart destinations literature is provided in Section 2. Afterward, a discussion of the bibliometric methodology that explains the workflow and data processing is presented in Section 3. The results are

presented in Section 4. Finally, a research agenda is proposed, along with the discussion of results and conclusion, to address the gaps in the smart destinations literature in Section 5.

2. Literature review
2.1 From smart cities to smart destinations
The golden age of ICT, resulting from the digital revolution, transformed entire market systems, leading them toward greater diversity and dynamism. The availability of new technologies also led to the development of smart cities, which provide their stakeholders with effective and efficient technological solutions (Yavuz *et al.*, 2018). The term "smart city" refers to a high-tech urban area where ICT is strategically implemented to increase its competitiveness while creating a sustainable environment and enriching the quality of life of local residents (Boes *et al.*, 2016). The concepts of smart tourism and smart destination emerged as a natural extension of the smart city concept (Khan *et al.*, 2017).

Smart destinations use a distinct approach to urban development by integrating ITCs with physical substructures (Gretzel *et al.*, 2015). This integration leads to efficient and sustainable usage of destination resources for creating and delivering new destination experiences and/or improving the existing destination experiences for the benefit of residents and tourists. As argued by Lamsfus *et al.* (2015), a destination is considered a smart destination if the use of technology empowers DMOs and other destination stakeholders in their decision-making processes and increases tourists' intention to visit by enhancing their level of awareness of the tourism offerings at a destination. Thus, the smartness of a destination elevates the competitiveness of the destination while improving and enhancing the quality of life for all stakeholders, including residents and tourists (Boes *et al.*, 2016).

2.2 Digitalization of smart destinations
As argued by Khan *et al.* (2017, p. 6), the key aspects characterizing the smartness of a destination include:

> Digitization of systems, processes and services; a higher level of interface between the tourist and the destination, the local community and government; a greater involvement of the local residence in the provision of products/services; a higher level of generation and use of data; a better orientation to the management of the tourist experiences.

Thus, by integrating advanced ICTs, smart destinations strive to enrich the tourist experience and enhance destination competitiveness (Sustacha *et al.*, 2023). Recent advances in technology, such as 5G/NBIoT/Wi-Fi, cloud computing, artificial intelligence (AI) and machine learning (ML), blockchain, robotics, augmented reality (AR), virtual reality (VR), extended reality (ER), the Internet of Things (IoT), the metaverse and ChatGPT, are rapidly turning all tourism resources into smart tourism resources (Sun *et al.*, 2022; Gursoy *et al.*, 2023). The integration of these technologies into a destination infrastructure not only helps destination managers transmute their destinations into smart destinations but also provides them with tools to transform the massive amounts of big data available into value propositions for all destination stakeholders (Chen, 2023). These technologies provide policymakers and companies with unique opportunities to understand and meet users' needs by offering tailored recommendations for activities at a destination.

2.3 Aspects of sustainability in smart destinations
ICT plays a key role in the development and implementation of sustainability initiatives, making destinations more sustainable in both developing and developed countries. The

development and integration of a smart digital infrastructure, guided by the sustainability principles, affords critical opportunities to smart destination stakeholders, including employees (Ray *et al.*, 2023) for transparent, innovative, creative, collaborative and mutually beneficial partnerships (Mandić and Garbin Praničević, 2019). This collaboration creates options for the implementation of sustainable initiatives using intelligent solutions that engage different actors such as public authorities, businesses, DMOs, community-based organizations, residents and other entities (Khan *et al.*, 2017). This partnership can also lead to the efficient and sustainable utilization of destination resources for creating and delivering new destination experiences and/or improving the existing destination experiences for the benefit of all stakeholders, including residents, businesses and tourists. Because tourism generates an increasing amount of waste and pollution, i.e. 8% of global emissions as well as more than 35 million tons of solid waste and about 300 liters of estimated water consumption per overnight stay (Fondazione Univerde, 2022), the development and implementation of smart sustainability initiatives and practices through the integration of new technologies into the sustainability infrastructure is extremely important in this process.

2.4 Smart destinations and accessibility
The only way for destinations to be open and inclusive is to promote the value of accessibility. At both the central and local levels, the development and implementation of policies for equal opportunity and, above all, equal access play a critical role in lowering inequalities among travelers; this requires a cultural shift and a commitment to accessibility by all destination stakeholders (Solima *et al.*, 2021). Ensuring accessibility not only means removing architectural or physical barriers but also requires a commitment to ensure that everyone can fully enjoy the destination by providing individualized, inclusive and safe experiences to all people, including those with physical, motor, sensory or cognitive special needs, whether permanent or temporary (Madera *et al.*, 2023). Accessible tourism relates to the process of ensuring that transportation, accommodation, information, destinations and attractions in the local tourism system adequately meet the needs of people, including those with disabilities (Buhalis and Darcy, 2011). By integrating appropriate technologies into the existing infrastructure, smart destinations can address each dimension of accessibility. For example, destinations and attractions can offer virtual experiences through the metaverse to travelers who cannot physically visit the site because of cost barriers or physical or cognitive disabilities (Buhalis *et al.*, 2023). Destinations and attractions can make information more accessible by using specialized apps to overcome limitations imposed by the disabilities of individuals. Furthermore, smart destinations can gather data about access needs and requirements of different segments through ICTs and develop profiles to efficiently meet the demands of diverse targets (Buhalis *et al.*, 2023). An emerging cutting-edge technology, blockchain, may be used to address these challenges and assist in making smart destinations more accessible (Jain *et al.*, 2023).

2.5 Cultural heritage and creativity as drivers of an improved smart tourism experience
Technological applications, which encourage different stakeholders, including both locals and tourists, to co-create and share cultural content, knowledge or narratives through storytelling, are at the base of the participatory approach that is becoming a powerful trend in both the cultural heritage and tourism domains (Giaccone and Bonacini, 2019). The participatory approach meets the need of institutions to promote collaboration and participation among users around museum collections and heritage management, with the aim of co-creating memories. Smart virtual experiences created by digital tools, such as the

metaverse, VR and AR, allow visitors to access cultural heritage knowledge via virtual storytelling and multimedia representations that integrate history, culture and personal values, rendering the visit more immersive and satisfactory (Trunfio *et al.*, 2022).

3. Methods and data

This work performed a bibliometric analysis to review and classify studies published on smart destinations to identify the main themes and sub-themes emerging in the extant literature. Bibliometrics is the application of mathematical and statistical methods to analyze and assess the quantity and quality of publications within a certain scientific domain (Durieux and Gevenois, 2010). It is a very useful methodology for developing a comprehensive overview of the main trends affecting a research area or country (Hood and Wilson, 2001). The *Bibliometrix* R-package was used to carry out the bibliometric analysis (Aria and Cuccurullo, 2017) because it contains a more extensive set of techniques and provides analytics and graphs for source metrics and structures (conceptual, intellectual and social) of knowledge (Moral-Muñoz *et al.*, 2020).

3.1 Data collection

Data were collected from the Web of Science database (WoS), the world's premier multidisciplinary academic database for published articles and citations, based on the recommendations of previous bibliometric studies (Korom, 2019). The following search equation was submitted to the WoS database on June 28, 2022, to identify the studies published on smart destinations:

$$TS = (\text{"smart} * \text{" AND "destination} * \text{"}) \, OR(\text{smart} * \text{touris} * \text{destination}*).$$

The bibliometric analysis process used in this study is presented in Figure 1. The keyword search was conducted in the "All Fields" section of the WoS database and yielded a large number of papers. Several filters were used to narrow the search field and focus only on publications in line with the study purposes. First, the search was limited to studies published in the "Business," "Economics," "Hospitality Leisure Sport Tourism" and "Management" fields, which decreased the number of studies on smart destinations to 633. A second filter was added to identify empirical studies published in refereed journals, excluding proceedings, papers, book chapters, review articles and editorial materials. This process resulted in the identification of 440 research papers. The last filter was applied to identify empirical studies published only in English-written contributions, which resulted in the identification of 414 empirical studies.

3.2 Data analysis

Once the data collection process was completed, the authors analyzed the title, abstract and keywords of each contribution. During this stage, five off-topic publications were removed. Hence, our final database count was 409 papers.

3.3 Data visualization

This study supplemented the bibliometric analysis with visualization techniques to outline existing knowledge on the smart destination domain. Specifically, this work applied performance analysis and science mapping procedures. Performance analysis allows for the evaluation of research based on bibliometric indicators, extracted from bibliographic data (Moral-Muñoz *et al.*, 2020). On the other hand, the science mapping process generates a
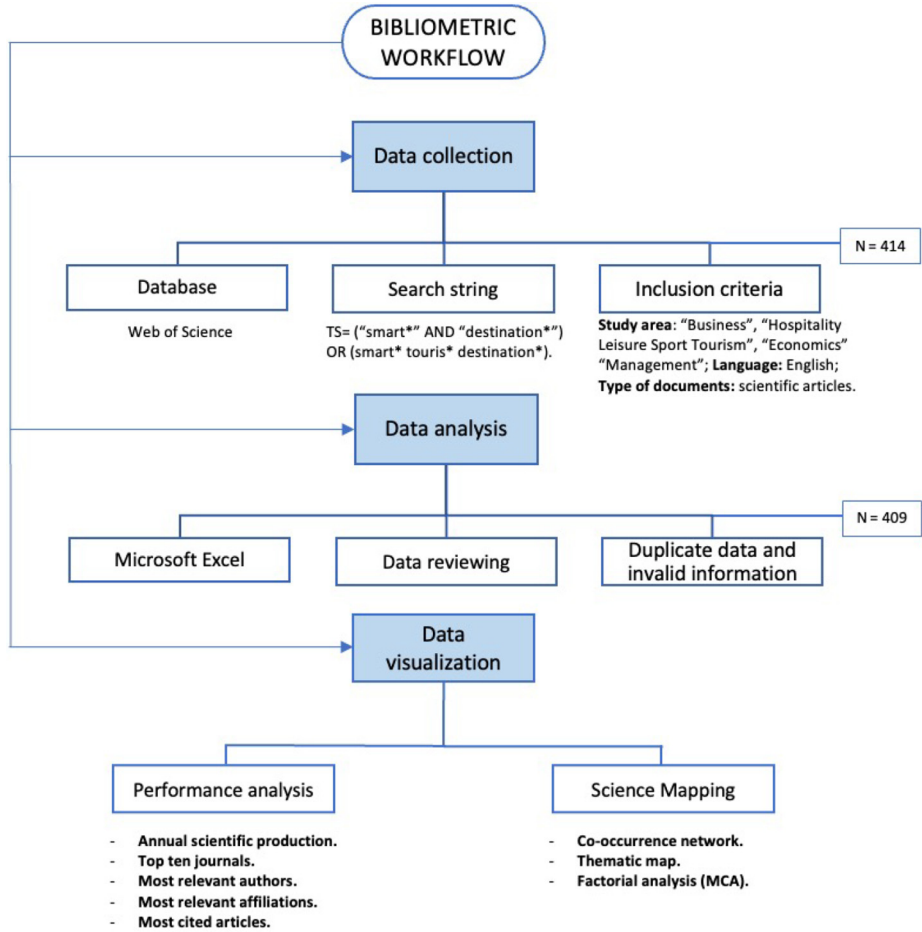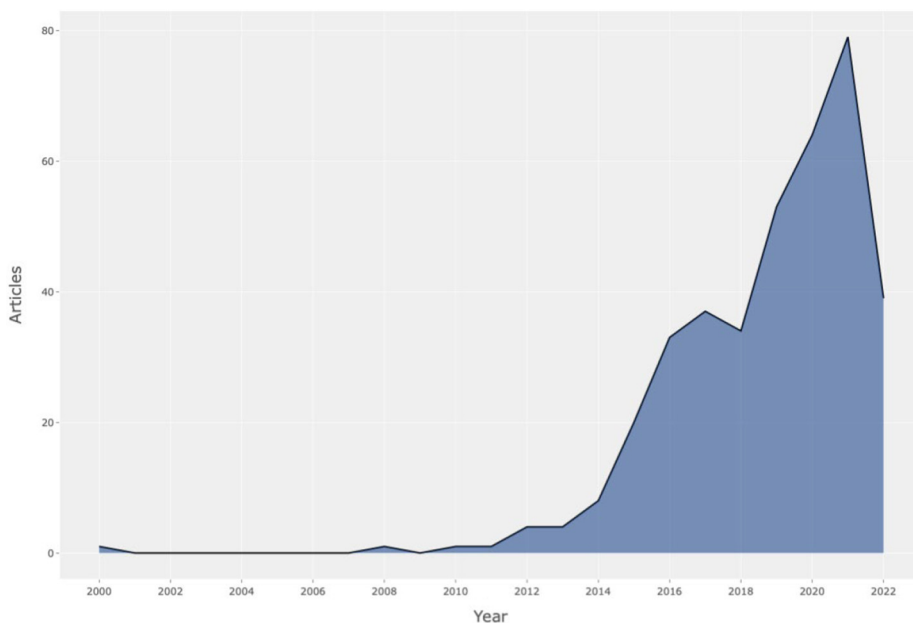
Figure 1.
Bibliometric
workflow

Source: Authors' own creation

display of the structural and dynamic aspects of studies (Herrera-Viedma *et al.*, 2014). It is used mainly to discover how disciplines, topics and documents are related to one another based on their physical proximity on the map (Moral-Muñoz *et al.*, 2020).

4. Results

4.1 Publication trends

Figure 2 presents the publication trends of the studies since 2000. As shown in Figure 2, very few (only eight) studies were published on smart destinations between 2000 and 2012, representing 1.95% of the research output. These early contributions examined the exploitation of the power and reach of the internet in delivering customized messages to customers, destination branding, the effects of smart growth on the eco-efficiency of tourist destinations, technological development in the tourism field, with a focus on near-field communication and the effects of smart growth on the transportation system and travel

Figure 2.
Annual publication trends

Source: Authors' own creation

behavior. Research on smart destinations started receiving significant attention from scholars in 2013. There was a steady increase in the number of studies published on the topic, reaching its peak in 2021 and establishing the smart destination research domain as an expanding area of study. Studies published since 2013 represent about 98% of the publications on smart destinations.

4.2 Conceptual structure

Figure 3 presents the thematic map, also known as the strategic diagram, derived from the bibliometric analysis using the *Bibliometrix* software. The two-dimensional graph captures the landscape of the smart destination literature by strategically mapping keywords extracted from the titles of selected papers (Della Corte *et al.*, 2019). The map is divided into four quadrants based on density (Y-axis), which measures the strength of intra-cluster cohesion and expresses the extent to which the keywords are connected and how themes are developed, and centrality (X-axis), which indicates the degree of inter-cluster interaction and, thus, the importance within a specific research area (Forliano *et al.*, 2021).

In the upper-right quadrant, our analysis reveals three dominant themes within the smart destination research domain: "Satisfaction," "Impact" and "Travel." The positioning of these themes underscores their prominence in literature, suggesting that they serve as focal points for researchers and practitioners alike. Moving to the lower-right quadrant, we identify transversal themes, including "Foundations," "Management" and "Co-creation." Additionally, "Model," "Destination" and "Tourism" emerge, albeit with less established relevance. This quadrant highlights areas that are less explored in the current literature, indicating potential research gaps. Further exploration of these themes could contribute significantly to closing existing gaps and providing nuanced insights. The lower-left
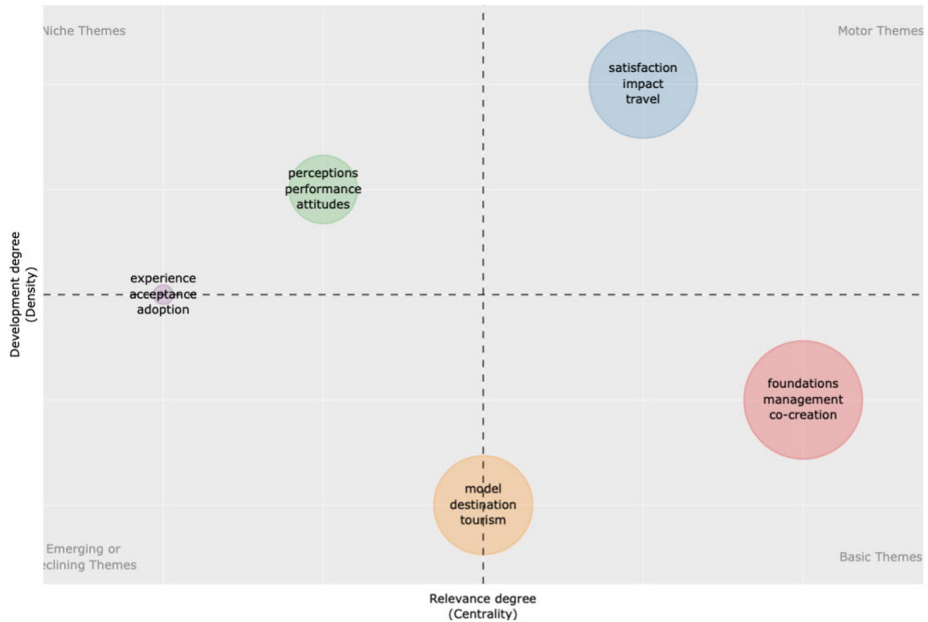
Figure 3.
Thematic map

Source: Authors' own creation

quadrant captures themes such as "Experience," "Acceptance" and "Adoption," exhibiting characteristics of either emerging or declining trends. While these themes have some presence in the literature, their positioning in this quadrant suggests a need for deeper examination. Understanding the dynamics of these themes can offer valuable insights into evolving trends or areas that might be losing relevance. In the upper-left quadrant, specialized and underrepresented themes such as "Perceptions," "Performance" and "Attitudes" are highlighted. Despite their low centrality, the high density indicates active development in these areas.

The final analysis performed on the smart destination literature provided a summary and visualization of the contextual structure of related keywords. This conceptual structure map was generated using multiple correspondence analysis. Through this analysis, four main clusters were identified as presented in Figure 4. The research themes examining the development of smart destinations are represented by the violet cluster, which includes "innovation," "city" and "cities," supporting the basic assumption that smart destinations were created as a natural extension of smart cities. Researchers investigating this cluster might find insights into the trajectory of smart destination development, the influence of technological advancements and the interconnectedness between smart cities and smart destinations. The green cluster points out concepts associated with the tourism experience in a smart environment, such as "information technology," "experiences" "co-creation," "social media," "travel" and "hospitality." This cluster highlights the role of technology in shaping and enhancing the overall tourist experience. Researchers exploring this cluster might uncover valuable insights into how technological innovations, social media interactions and collaborative experiences contribute to the creation of a smart and immersive tourism environment. The red cluster encompasses a diverse range of concepts focusing on smart
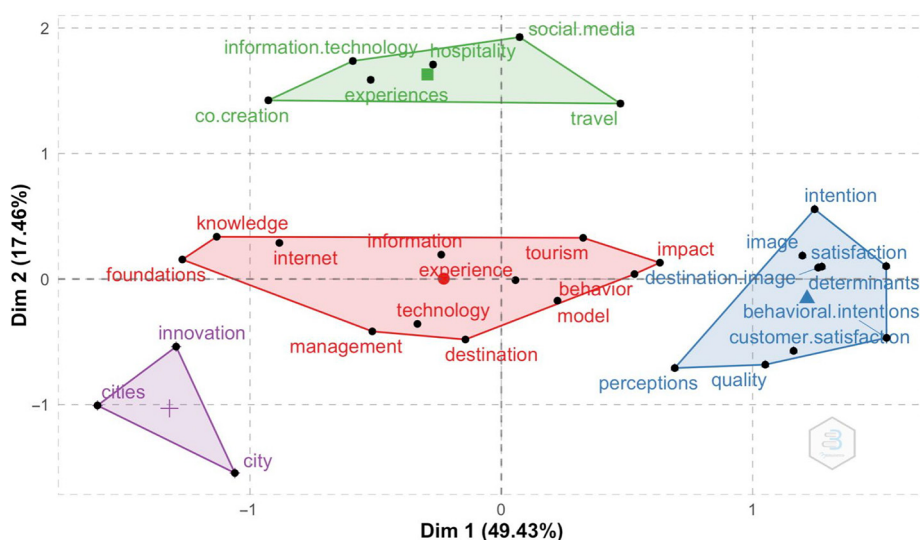
Source: Authors' own creation

destination management. It contains the highest number and variety of concepts, demonstrating that a wide range of scholarly publications explored the relationships among those concepts. The blue cluster directs attention to studies investigating tourist-related issues in the context of smart destinations. These concepts include "perception," "quality," "destination image," "intention" and "satisfaction." Consequently, studies included in this cluster provide a valuable foundation for studies seeking to bridge the gap between technological advancements and the enhancement of tourists' overall experience and satisfaction at smart destinations.

5. Discussion and conclusions
The findings suggest that while the number of publications on smart destinations was relatively small before 2013, smart destination research has received rapidly increasing attention from scholars in various fields, including tourism, business, economics and management. Since 2013, the number of studies on smart destinations has significantly increased. This rapidly increasing research interest in smart destinations resulted in the generation of significant knowledge in the area, which can be explained by the relevance of the topic for destinations, destination stakeholders and destination marketing organizations. These studies have invested and integrated a multitude of ICTs in their destination management ecosystems, supply chains involving both upstream and downstream processes and stages, the creation and delivery of tourism experiences and marketing communications. Furthermore, the application of ICTs in a certain industry contributes to information sharing among all individual actors by promoting collaboration in the planning, management, coordination and control of network resources, which enables organizations to more efficiently and effectively address changes in consumers' needs and competitors' strategies.

Figure 5 presents a conceptual overview of the smart destination literature derived from the findings of both the literature review and the bibliometric analysis. The figure clearly shows the complexity and dynamism of the tourism industry and the complex nature of
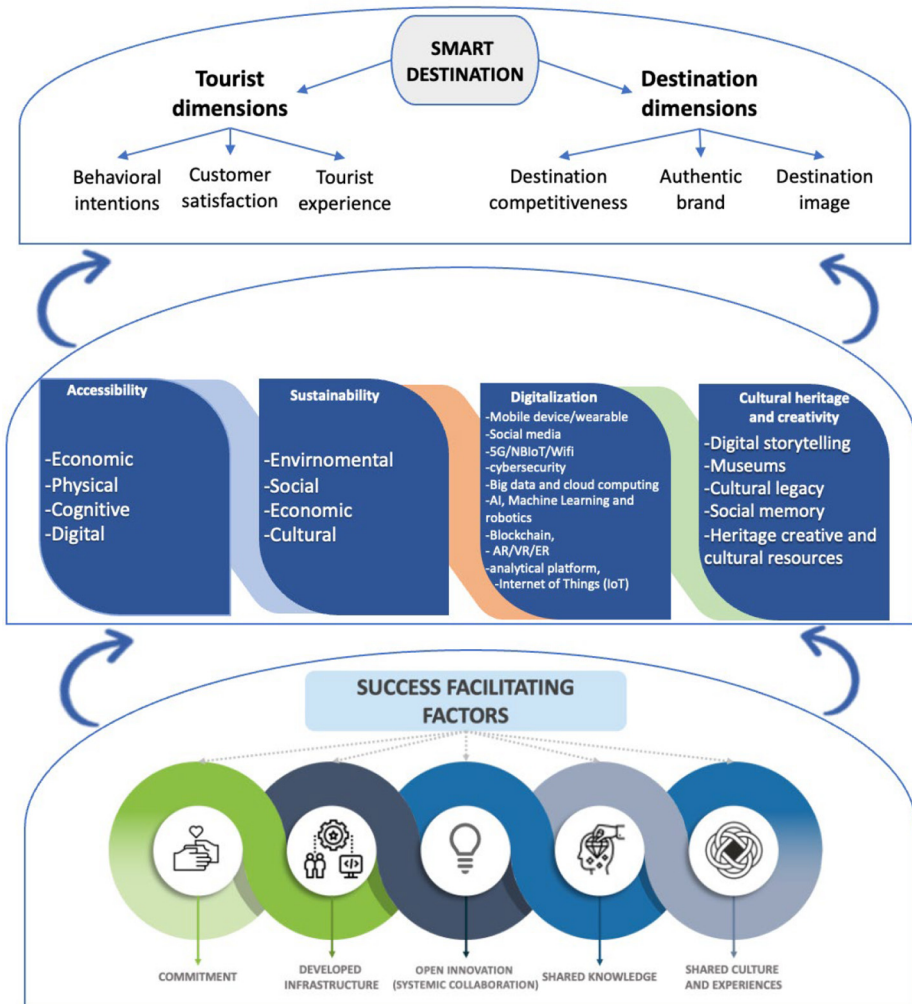
Figure 5.
Smart destination
conceptual model

Source: Authors' own creation

cooperation needed between individual actors involved in the tourism ecosystem (Jiang and Ke, 2019). Indeed, tourist destinations are complex domains characterized by private and public actors' interaction influenced by social, economic and political factors while delivering an integrated travel experience (Trunfio and Campana, 2019). Furthermore, local knowledge gained through various sources, including ICTs, affects the configuration and evolution of the destination (Ozseker, 2018). In such a context, open data, shared social knowledge and connectivity serve as the basis for the creation of tourism experiences and new mechanisms of innovation and dissemination (Xiang, 2018). A destination can become a local innovation system in which both the attitude to innovate and local co-evolution depend on the variety, quantity and knowledge level of the players and the type of relations

established among them (Ozseker, 2018). Through collaboration mechanisms, actors can create smart governance as a component ensuring accountability, commitment and trust among them and the successful implementation of ICT applications in the destination's development (Damayanti *et al.*, 2021). Underlying principles of smart destination management provide the foundations for a new destination management paradigm with accessibility, sustainability, digitization, experience co-creation and creativity as milestones. In this light, by exploiting ICT-based opportunities, smart destinations enhance access to tourism services, spaces and experiences, stimulate innovative and smart solutions and promote the spread of entrepreneurial activities, collaboration and partnership among all stakeholders, which results in the generation of the critical support needed for the survival and success of the entire smart destination ecosystem (Moore, 1993). Thus, the successful development of a smart destination requires the unwavering collaboration of innovation and partnership culture. While each stakeholder is a critical contributor to the development of smart destination ecosystems, they must also foster a collaborative culture when it comes to innovation and technology integration to successfully address the rapidly changing needs and wants of travelers. This approach can serve as a powerful accelerator of smart destination development by working toward a common vision.

5.1 Theoretical implications
The conceptual model proposed in this study provides a framework for identifying the main drivers of real smart and sustainable destination management. The integration of new technologies into smart destination ecosystems can provide several benefits to travelers during their pre-trip information search process and while they are visiting the destination. The wide-ranging effects of new technology integration need further investigation because the findings can yield critical insights and provide a roadmap for better comprehension of the potential benefits and challenges these integrations can present for various stakeholders. Thus, further conceptual, theoretical and empirical research is needed to understand how the integration of new technologies into the smart destination ecosystem can improve travelers' experiences.

Scholars should seek to develop new theoretical models that aim to understand the effects of new technology integration on experiences and their implications for experience co-creation. While the technologies integrated into smart destination ecosystems can offer significant benefits to stakeholders, they might also pose significant challenges such as real-time data management and updates, security concerns and digital estrangement. Managing these challenges is critical for ensuring long-term sustainability (Momayez *et al.*, 2023) and success of smart destinations. Thus, there is an urgent need for further research on data security and data management and how data security and privacy concerns might influence travelers' attitudes and behaviors toward smart destinations. Furthermore, travelers with disabilities, older travelers and less-experienced users could have a hard time navigating the technologies available in smart destinations. There is a need for further research on how to make technologies offered in smart destinations more accessible to those travelers.

5.2 Managerial implications
In addition to its theoretical contributions, this study has significant managerial implications that can guide decision-making and strategic planning within smart destination organizations. Accordingly, managers and tourism players are challenged to navigate the tangled area of data security, supported by innovative technologies such as blockchain and taking cutting-edge measures to safeguard travelers' information in an era when trust and privacy are paramount. This process has the potential to empower tourists by ensuring that they have control over their personal information, thereby fostering a sense of agency in times of

heightened data awareness. Initiatives demonstrating a commitment to building trust significantly contribute to positive perceptions of smart destinations. At the same time, data security underscores the need for robust protection strategies. As service delivery becomes increasingly complex, managers find themselves at the forefront of innovation.

The integration of human and non-human resources within the same service environment presents an opportunity to create seamless tourism encounters. This requires a delicate balance in which human warmth is intertwined with technological efficiency to provide tourists with a holistic and memorable experience (Chang, 2022). Consequently, envisioning and strategizing the overall mapping of smart destinations requires managerial skills. It involves comprehensive planning and coordination, with infrastructure and IT components converging to deliver smart tourism services and products. Managers and policymakers should take a visionary approach, ensuring that the synergy between technology, destination planning and the collaboration of all the players involved in the tourism industry aligns seamlessly for a truly smart and integrated offer.

With reference to sustainability issues, governments are central in fostering an environment enabling sustainable and technologically advanced smart destinations. Policies encouraging innovation and responsible tourism are essential components of this role. Governments' influence extends beyond legislation; it includes setting a vision that aligns with global sustainability goals and promotes the responsible development of smart tourism destinations. Policymakers must formulate and promote a forward-looking agenda that includes encouraging sustainability practices, addressing heritage challenges and supporting responsible tourism. On the other hand, businesses are encouraged to collaborate on initiatives for environmental activities, ensuring that sustainability remains a cornerstone of their practices.

5.3 Conclusions

This study offers a comprehensive understanding of smart destination literature development and, therefore, can serve as a foundation for further knowledge generation in this area. Annual publication trends identified in this study suggest that while the number of publications in the area is rapidly increasing every year, knowledge development in smart destination literature is still at an embryonic stage. Our research suggests possible research gaps in the literature and highlights potential future research opportunities for the exploitation of cutting-edge innovations across the main themes of the smart destination literature. Specifically, even if the adoption of the smart destination as a framework for destination management represents a growing trend, the role of the government and the costs/benefits of developing smart destination structures have not been widely analyzed. Accordingly, there is a need for more studies to further advance tourism public policy and planning practice. Moreover, the integration of sustainability and open innovation within the context of knowledge-based smart destination development emerges as an unexplored field in the literature. In this sense, a future research avenue is to investigate how open innovation can foster collaboration in networks involving companies, governments and communities, thereby promoting inclusive and sustainable smart environments. Dynamic and progressive research in the smart destination management area can help destinations become smarter while creating and delivering satisfactory tourism experiences in an era when disruptive technologies are triggering big changes.

5.4 Future research agenda and limitations

Table 1 presents a structured overview of future research directions, outlining exemplar questions guiding each line of research. These questions address critical aspects such as data transparency supported by blockchain, the safety of travelers' data, the integration of

Lines of research	Exemplar questions
Accessibility	• How transparent data relationship supported by blockchain can make tourist feel in charge of their information? • How safety of travellers' data can be ensured against data theft? • How both human and non-human staff can be integrated into the same service setting to provide service experiences to tourists?
Digitalization	• How can an overall mapping of SD, conceived as a holistic system in which infrastructure and IT components come together in delivering smart tourism services/products, be envisaged? • How can destinations and tourism providers exploit blockchain/artificial intelligence/augmented reality/virtual reality/metaverse to enhance the overall tourism experience? • How could innovations based on blockchain/artificial intelligence/augmented reality/virtual reality/metaverse reduce the lack of trust and risk appetite that tourists are willing to accept in their travel experiences?
Sustainability	• What are the conditions and sub-factors for the implementation of effective sustainable SDs? • How environmental activities (e.g. pollution redaction, sustainable waste management, renewable energy resources exploitation, etc.) can contribute to enhance SDs' sustainability? • What are the challenges of blockchain/artificial intelligence/augmented reality/virtual reality/metaverse in improving sustainability in the tourism industry?
Cultural heritage	• How can SDs face specific challenges (e.g. carrying capacity, access management, etc.) related to cultural heritage? • What factors could foster the development of sustainable and circular cultural tourism models through the adoption of blockchain/artificial intelligence/augmented reality/virtual reality/metaverse? • Which strategies could allow the preservation, protection and valorization of cultural heritage assets through the development of responsible, sustainable and ethical tourism practices?

Source: Authors' own creation

Table 1.
Future research
directions

human and non-human staff and the overall mapping of smart destinations as holistic systems delivering innovative tourism services/products. Table 1 serves as a roadmap for scholars, providing clear directions for advancing knowledge in the smart destination field.

Consequently, we stress the need for further exploration into digitalization, with a specific focus on emerging technologies such as blockchain, AI, AR, VR and the metaverse. While technologies offer benefits, they also pose challenges such as real-time data management, security concerns and digital estrangement. The integration of smart technologies into destinations' existing infrastructure can support destinations in accelerating the development and implementation of sustainable solutions in destination management, experience creation and delivery processes. However, the literature on the effects of technology integration on sustainability is rather fragmented and descriptive, focusing mainly on the exploration of practical case studies in empirical settings. Therefore, there is a pressing need for future research to understand the underlying effects of technology integration on sustainability and the critical technological determinants of successful sustainability solution development and implementation.

While the findings of this study make important contributions to the smart destination literature, this study is not free from certain limits. The study exclusively used the WoS database to identify publications that examined issues related to smart destinations. In addition, only publications in English within the subjects of Business, Economics, Management and Hospitality Leisure Sport Tourism were included. These two limitations might have introduced bias into the process of identifying topics and other content

categories. Future studies should conduct a more in-depth and cross-disciplinary analysis by including other kinds of publications (e.g. conference proceedings and book chapters) covering related themes and using additional databases (e.g. Scopus and Google Scholar). Moreover, we suggest that future studies use additional bibliometric instruments and complementary research techniques (e.g. content analysis) to better examine the themes under review and the quality of the bibliometric evidence.

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