

Jussara Aires / Carlos Costa / Filipa Brandão

Exploring Indicators and Determinants to Evaluate Innovation in Tourism Firms – A Systematic Literature Review

Abstract

Innovation is consensually recognized as a *sine qua non* factor for tourism firms' competitiveness. There is, however, less consensus on the way to assess it since its determinants, implicitly present in the concepts of innovation, which are based on typologies, have not yet been clearly defined. This is a central question that few researchers have tried to address. Thus, in this article, a systematic literature review was developed with the objective of presenting the state-of-the-art on the evaluation of firm-level innovation in tourism, highlighting its indicators. From the full analysis of 35 articles, it is noteworthy that the topic was analyzed in European, American, African, Asian, and Oceania contexts. As central elements, human resources management, quality, resources, projects, and knowledge (supported or not by technologies) are fundamental to evaluating innovation (predominantly incremental) in an industry where companies are easily subject to imitation by their competitors. The nature of innovation in its individual, structural, interactive, and/or systemic perspectives has been described based on the apprehension of managers' conceptions and conduct. As a challenge to be overcome by future investigations, the need to establish parameters for the quantification of the various indicators captured and, consequently, classification scales based on scores are pointed out.

Keywords: tourism, firm-level innovation, evaluation, indicators, determinants, systematic literature review

1. Introduction

Tourism is a dynamic sector that brings together demand, including numerous consumers with different profiles and rapidly evolving and changing their behavior, mostly induced by globalization (Costa, 2014); and supply, represented by a variety of organizations competing among themselves intensely, with the common purpose of satisfying the many needs of these consumers (Hjalager, 2010; Sharma, 2016). The survival and maintenance of the tourism business and destinations' competitiveness depend on their capacity to innovate (Gomezelj, 2016; Brandão & Costa, 2014).

Even in times of global crisis, the valorization of tourism has been justified and highlighted by the wide dissemination of its economic benefits, resulting from interactions that encourage consumption in the territories spread over the continents (World Tourism Organization [UNWTO], 2020; Zhong et al., 2021). Particularly from 2019, the COVID-19 outbreak has led to discouraging statistics and expectations related to the reduction of tourists' flows. The resulting worldwide scenario reinforced the pertinence of firm-level innovation to assure businesses' survival and has signaled the need to invest in research that can bring inputs and contributions to the tourism firms' and destinations' resilience and innovation performance, which demands for the definition of innovation determinants and indicators.

Jussara Aires, PhD, Corresponding author, Full professor, Stricto Sensu Postgraduate Programme (Master and PhD) in Administration, Potiguar University, Natal, Brazil; ORCID ID: <https://orcid.org/0000-0003-1942-1270>; e-mail: HYPERLINK "mailto:jussaradma@ua.pt" jussaradma@ua.pt; HYPERLINK "mailto:jussaradma@yahoo.com.br" jussaradma@yahoo.com.br

Carlos Costa, PhD, Full professor, Department of Economics, Management, Industrial Engineering and Tourism & GOVCOPP, University of Aveiro, Aveiro, Portugal; ORCID ID: <https://orcid.org/0000-0002-0089-6930>

Filipa Brandão, PhD, Assistant professor, Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro, Aveiro, Portugal; ORCID ID: <https://orcid.org/0000-0002-9323-4572>

In tourism, firm-level innovation is defined as a process of creating new value geared first towards customers, as the main arbiters of business competitiveness, but one that can also involve other stakeholders as major beneficiaries, such as the organization itself (employees), shareholders (profitability) and external partners (Organization for Economic Cooperation and Development [OECD], 2005). Innovation also refers to the generation, acceptance, and implementation of new ideas in the form of problem-solving, novelties, or significant improvements involving teams, reorganizations, cost-cutting, systems, communication, or combining products and services.

The multidimensional nature and concept of firm-level innovation in tourism, merely explained and reflected through typologies, has not been properly measured yet, and this compromises its assessment and, in some cases, the implementation of innovation processes. Measurement is a key area of concern, both theoretically and practically, for innovation in the experience economy (Tagues et al., 2021). Instead of diagnosis by scores, what has been demonstrated is its level of diversity (Verreynne et al., 2019) and lack of consensus and standardization. Indeed, almost three decades ago, Deming (1992) had already acknowledged the impossibility of achieving success and managing what is not measurable or measured. Following that logic, everything that can be defined is subject to understanding and measurement.

Thus, the objective of this article is to present the state-of-the-art of research on the evaluation of firm-level innovation in tourism, highlighting its determinants and indicators for measurement based on the different innovation typologies identified. In order to propose guidelines and a future research agenda, a reflexive and critical analysis of the related published articles is conducted. To fulfill this purpose, a systematic literature review aimed at understanding the existing knowledge gaps was carried out. The development of research capable of diagnosing the current state-of-the-art-on-the measurement of innovation in tourism companies, pointing out limitations and directions to enhance the management of innovation in the sector is extremely necessary and identified in previous studies (Camisón & Monfort-Mir, 2012; Krizaj et al., 2014).

The paper is organized as follows: in Section 2, the methodological approach used to select and analyze the articles is presented. Section 3 includes the presentation and analysis of the results, specifically the distribution of articles over time and among journals, the central subject, purpose, geographical contexts, the research approach and methods used, as well as the key results found. Based on them, the conclusions, including the contributions of the study, are presented in Section 4. Finally, in Section 5, limitations and recommendations for future research are detailed.

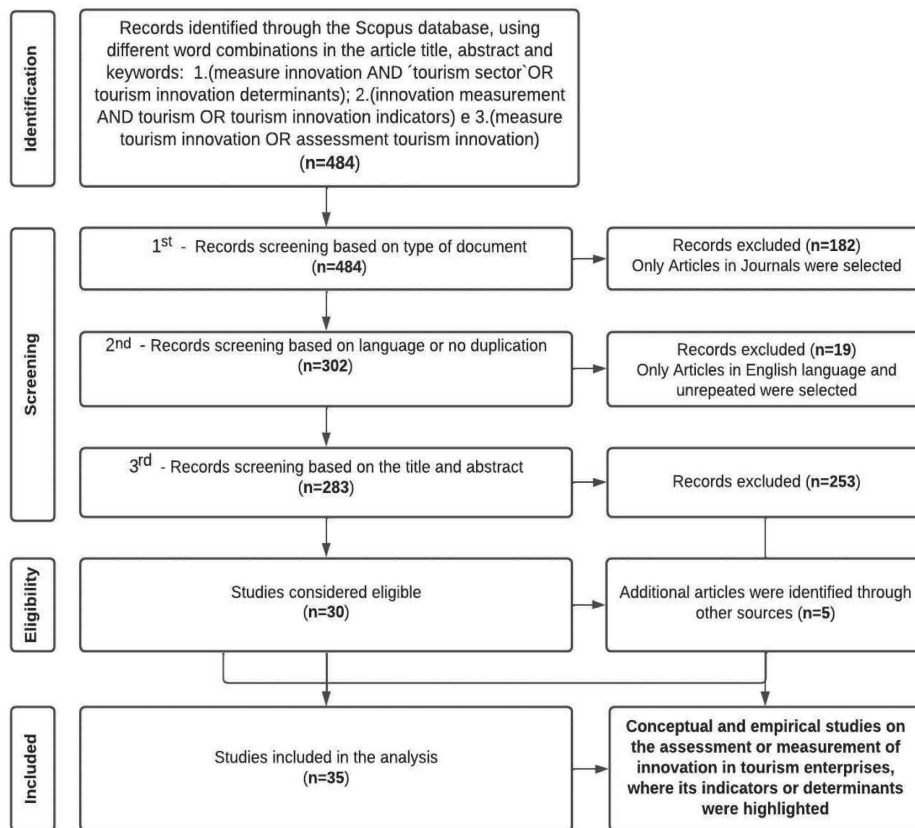
2. Methodology

Literature reviews play an essential role in academic research to gather existing knowledge and examine the state of a subject. They differ from traditional narrative reviews by adopting a replicable, scientific and transparent process. However, researchers in tourism, management, and related areas continue to rely on cursory and narrative reviews that lack systematic investigation (Linnenluecke et al., 2020). In this article, a systematic literature review is conducted, applying a research protocol that encompasses two stages: the first includes the selection of the articles, and the second, the analysis of their content.

2.1. Articles selection

The protocol used to select the articles is reported in Figure 1. As demonstrated, the identification of the studies was carried out through a thorough search on the Scopus database, using the following search combination codes: ('measure innovation' and 'tourism sector' or 'tourism innovation determinants'), ('Innovation measurement' and 'tourism' or 'tourism innovation indicators') and ('measure tourism innovation' or 'assessment tourism innovation') in the article title, abstract and keywords without any restriction of time or subject. This database is one of the largest databases of peer-reviewed literature, and it has been used in several previous innovation and tourism studies (Aires & Varum, 2018; Dann et al., 2019; Eusébio, et al., 2020).

Figure 1
PRISMA flow diagram of the article selection process



The time interval for all years up to November 2021 was considered. A total of 484 records were obtained, including books or chapters of books, reports, letters or editorial texts, reviews, and conference proceedings. The search criteria were then configured to capture only articles in journals. As a consequence of this first screening, the sample of records was reduced to 302. Further, only articles written in English were selected, and 19 more records were excluded.

Manual screening of the titles and the abstracts of the 283 records was developed by the researcher to ascertain if each paper was relevant for inclusion in this study. Concerning the inclusion criteria, it was decided to include both conceptual and empirical studies (qualitative and quantitative), where indicators and/or determinants of enterprise innovation in tourism supply could provide inputs for its proper innovation measurement and assessment.

The main justification for the exclusion of the remaining 253 articles was due to the fact that they present approaches with an emphasis on: assessing the performance of (or between) destinations (without considering tourism companies); the influences and effects of the use of technological resources on consumer behavior; conceptual or empirical models to highlight the role of institutions and clusters in the management, policy and socio-economic development of destinations; public innovation policies to improve organizational performance and destination management; socio-environmental sustainability restricted to archaeological sites; and the effects of innovation restricted to health services in tourism. It is also important to highlight the exclusion criterion of repetition of some articles and approaches. Consequently, only 30 articles were selected. To increase this sample, two complementary searches were carried out on the Google Scholar database and Online Knowledge Library (b-on). From these analyses, only three additional articles were added. Further,

the references of the 33 articles identified were considered, and two more articles were included in the sample. Finally, a total of 35 articles were selected to be integrally analyzed in the second stage.

2.2. Analysis of the articles

A descriptive analysis was carried out, presenting aspects such as the distribution over time, themes, authorship, and journal.

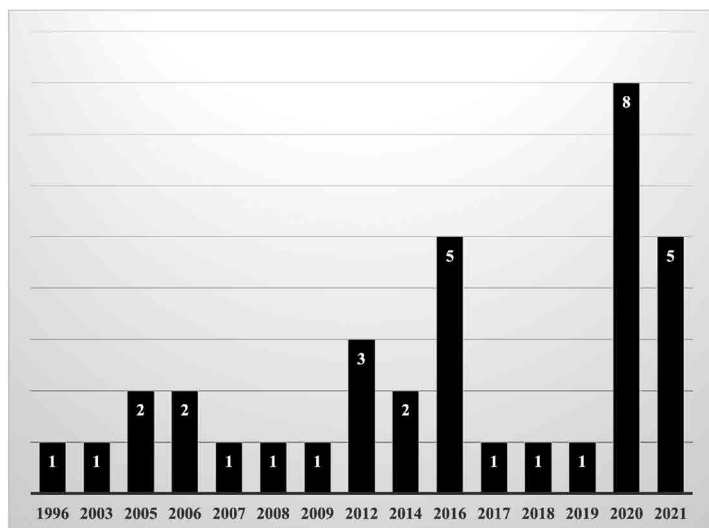
A content analysis of the articles was carefully developed. In this way, themes were grouped according to the objective and the geographical context in which the study was conducted. Complementarily, the frequency of words (in the title, abstract, and keywords) of the articles was analyzed using the Iramuteq software. The terms most frequently used in the research field are depicted in a word cloud. The relation among concepts, typologies, determinants and indicators of innovation in tourism was also analyzed. A survey of the different typologies considered in the research was made, and from this, the determinants and indicators capable of measuring or assessing the level of innovation in tourism enterprises were identified. The research methods (type of approach, data collection, data analysis, and variables) were also identified and grouped, as well as the main findings and conclusions.

3. Results

3.1. Distribution of the articles over time

Business innovation is not a new topic in the tourism literature. However, issues particularly related to the nature and measurement of innovation are always current and relevant, even if they are still scarce. There seems to be a growing interest in the assessment of innovation in tourism among researchers, as most of the articles were published over the past ten years (74%), mainly in 2020 (23%), 2021, and 2016 (14%, each one) (Figure 2).

Figure 2
Number of articles published by year of publication



3.2. Themes, authorship, title, geographical context, and journals

Concepts, typologies, and indicators of innovation in tourism firms (cross-sector) or particularly in the hotel industry, are commonly contemplated in the articles (Table 1).

Table 1
Themes, authorship, title, geographical and context

Theme	Authorship	Title	Context
Eco-innovation and social and/or environmental sustainability	Hjalager (1996)	Tourism and the environment: the innovation connection	Europe
	Alonso-Almeida et al. (2016)	Shedding light on eco-innovation in tourism: a critical analysis	Europe, America, Asia, Africa, Oc.
	Aksoy et al. (2019)	Social innovation in service: a conceptual framework and research agenda	-
	Bell & Ruhanen, (2016)	The diffusion and adoption of eco-innovations amongst tourism businesses: The role of the social system	Australia
	García-Pozo et al. (2016)	ECO-innovation and economic crisis: A comparative analysis of good environmental practices and labor productivity in the Spanish hotel industry	Spain
	Nam et al. (2020)	Hotel ICON: towards a role-model hotel pioneering sustainable solutions	China
Cooperation, human resources, and other key tourism enterprise innovation indicators	Jacob et al. (2003)	Innovation in the tourism sector: Results from a pilot study in Balearic Islands results.	Spain
	Brunner-Sperdin & Peters (2005)	Importance and measurement of entrepreneurial quality and processes in tourism	Austria
	Orfila-Sintes et al.(2005)	Innovation activity in the hotel industry: Evidence from the Balearic Islands	Spain
	Orfila-Sintes & Mattsson (2009)	Innovation behavior in the hotel industry	Spain
	Pikkemaat & Weiermair (2007)	Innovation through cooperation in destinations: First results of an empirical study in Austria	Austria
	Vadell & Orfila-Sintes (2008)	Internet innovation for external relations in the Balearic hotel industry	Spain
	Brooker et al. (2012)	Innovation within the Australian outdoor hospitality parks industry	Australia
	Thomas & Wood (2014)	Innovation in tourism: Re-conceptualizing and measuring the absorptive capacity of the hotel sector	England
	Booyens & Rogerson (2016)	Tourism innovation in the global south: Evidence from the Western Cape, South Africa	South Africa
	Omerzel & Jurdana (2016)	The influence of intellectual capital on innovativeness and growth in tourism SMEs: empirical evidence from Slovenia and Croatia	Slovenia and Croatia
	Succurro & Boffa (2018)	Patenting patterns in the tourism industry: Evidence from Italy	Italy
	Karmanov et al. (2020)	The process of innovation diffusion and adoption of innovations in the business modelling for travel companies	Russia
	Melián-Alzola et al. (2020)	Hotels in contexts of uncertainty: Measuring organisational resilience	Spain
	Ruel & Njoku (2020)	AI redefining the hospitality industry	-
	Tajeddini et al. (2020)	Importance of human-related factors on service innovation and performance	Japan
	Taques et al. (2021)	Indicators used to measure service innovation and manufacturing innovation	-
	Williams et al. (2021)	Innovation, risk, and uncertainty: A study of tourism entrepreneurs	Spain and United Kingdom
Su et al. (2021)	Enhancing resilience in the Covid-19 crisis: Lessons from human resource management practices in Vietnam	Vietnam	
Guidance for measuring innovation in tourism enterprises	Pikkemaat & Peters (2006)	Towards the measurement of innovation — A pilot study in the small and medium sized hotel industry	Austria
	Volo (2006)	A consumer-based measurement of tourism innovation	Italy
	Pivcevic & Pranicevic (2012)	Innovation activity in the hotel sector - the case of Croatia	Croatia
	Camisón & Monfort-Mir (2012)	Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives	Spain
	Krizaj et al. (2014)	A tool for measurement of innovation newness and adoption in tourism firms	Slovenia
	Nordli (2017)	Measuring innovation in tourism with Community Innovation Survey: A first step towards a more valid innovation instrument	Norway
	Hjalager & Gesseneck (2020)	Capacity-, system- and mission-oriented innovation policies in tourism - Characteristics, measurement and prospects	Overseas countries and territories
	Valença et al. (2020)	Innovation radar in hospitality: A new procedure to evaluate innovation in hotels	Brazil
	Nordli & Rønningen (2021)	Tracking hidden innovations in tourism	Norway
	Sipe (2021)	Towards an experience innovation Canvas: A framework for measuring innovation in the hospitality and tourism industry	United States

According to Table 1, all the research that detailed aspects, behavior, and specific characteristics of innovation in the tourism sector, covered the hospitality industry (at least 16 of the articles restricted their discussions to the hotel industry). Based on the analysis of related objectives, we grouped the 35 articles into three following themes: *'Eco-innovation and social and/or environmental sustainability'* (encompasses the debate on solutions that balance social, economic, and environmental needs and concerns); *'Cooperation, human resources and other key indicators of tourism firm innovation'* (in this group, the enhancement of dynamic business capabilities is predominant, centered above all on human cognition and conduct to diversify and disseminate the innovation implemented in the sector) and *'Guidance for measuring innovation in tourism enterprises'* (brings together the most critical discussions to question the effectiveness and adequacy of sectoral innovation measurement instruments, giving them directions for their improvement, development and/or validation).

There is a great variety among the authors of these articles. Almost all (93%) wrote one paper, and only Anne-Mette Hjalager, Anne Nordli, Birgit Pikkemaat, and Francina Orfila-Sintes are authors of two (separately). The articles are published in journals of several areas, which reveals the relevance of this topic to different fields. However, there is a higher prevalence of articles from the multidisciplinary field of 'tourism, leisure, and hospitality management' (62%), with a notable contribution of 'environmental science' (21%), 'psychology' (7%) and 'geography, planning, development and others' (10%). It is important to notice that journals can be related to more than one of these fields.

Commonly, the geographical context corresponds to the country of origin of the main author of the research. The spatial distribution of the published articles addressing guidelines to assess tourism firm innovation is focused on Asia (11%), Africa (6%), Latin America (6%), North America (6%), Oceania (8%), and Europe (63%). Among European countries, Spain, England, the United Kingdom, Italy, Croatia, Austria, Slovenia, Norway, Vietnam, and Russia are highlighted. Spain emerges as the country where most studies were conducted (about 23% of the total). Overseas Countries and Territories (OCTs), comprising 25 islands located in the Caribbean and in the Atlantic, Antarctic, Arctic, Indian, and Pacific Oceans, that depend on four EU Member States – Denmark, France, Netherlands, and the United Kingdom are highlighted in Hjalager and Gesseneck (2020).

3.3. Most frequently used terms

According to the three previously identified themes (Table 1), word clouds were generated with the qualitative analysis software Iramuteq, which allowed us to develop a word frequency query. To do so, this task separately analyzed the word frequency in specific items of the articles read, namely, the title, keywords, and abstract. By default, we excluded conjunctions and/or prepositions and similar, which helped to substantially reduce the number of meaningless words. Other words with a frequency of less than three were excluded, mainly because they may not be meaningful to the study objectives. Additionally, expressions matching the search terms used in the initial protocol were also excluded. Based on each list of frequencies, the software created the word clouds represented in Figure 3.

Figure 3
Word frequency in abstracts, titles and keywords

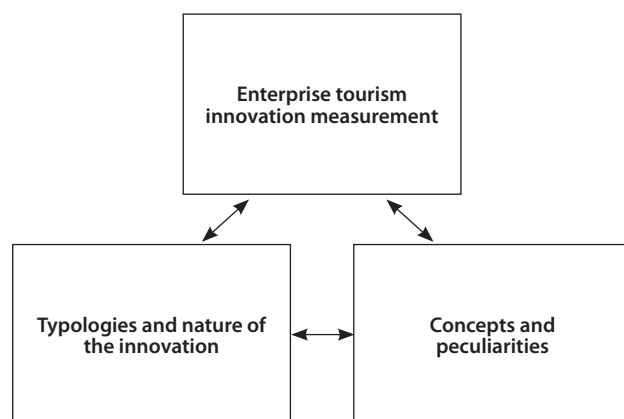


Figure 3 demonstrates that only the expressions 'companies', 'evaluate', 'hotel', 'SMEs', and 'service' are common in the analyzed lists. The tourism sector is an amalgam of industries, services, and commerce or retail companies. Small and medium-sized enterprises (SME) service providers are predominant (Omerzel & Jurdana, 2016; Verreynne et al., 2019). In fact, the hotel industry is strategic, and it has been exclusively or commonly contemplated in studies on tourism SME innovation. Hotels (especially those of higher categories) offer a complex range of products and services involving these three sectors. The words 'concept', 'innovation types', and 'enterprises' also appear with high frequency in at least two of the three lists of frequencies. This suggests that the analysis of concepts and typologies of business innovation may reveal key indicators and determinants for assessing or measuring tourism SME innovation, which, even in crisis times, should encompass experiential offerings that engage customers and other stakeholders in particular ways.

3.4. From concepts and typologies to indicators for measuring tourism innovation

The innovation economy in the tourism sector is saturated in a lack of consensus and unquantifiable uncertainty (Williams et al., 2021; Aires & Varum, 2018). A portion of this is due to the nature of tourism supply, the lack of applicability of methods for measuring innovation for tangible products, and the difficulty in transferring the available tested models to the heterogeneous group of activities in the tourism sector (Tajeddini et al., 2020). Anyway, it is noted that any attempt to evaluate innovation in tourism enterprises starts with the analysis of concepts, characteristics, and typologies (Figure 4). Conceptually, different approaches exist within the theoretical framework for innovation (Tagues et al., 2021). Classifications are diverse, which to some extent, hampers establishing a set of specific tourism indicators.

Figure 4
Knowledge consolidation cycle on tourism innovation measurement



Innovation is a complex social phenomenon for which researchers and international organizations have offered multiple concepts, presenting strong similarities. Differences are much more prominent when it comes to the operationalization of the concept and specification of types, modes, or processes of innovation (Booyens & Rogerson, 2016; Krizaj et al., 2014; Nordli, 2017). In general, innovation concepts present in the analyzed articles are based on Schumpeter (1934), for whom innovation is the new or improved combination of existing resources. Particularly, it is seen as a result of an idea about something new or an organizational improvement (invention), i.e., the realization of the initially proposed idea and its commercial implementation (Tagues et al. 2021).

This definition inspired the conceptual uniformity by the OECD through the Oslo Manual (OM) (Brandão & Costa, 2014). Thus, innovation is the implementation of a new or significantly improved product (good

and/or services), process, new or improved marketing method, or organizational change in business practices, workplace organization, or external relationship (OECD, 2005). There must be something new, at least for the firm, and innovation implementation must be reproduced more than once. The definition in the OM, which distinguishes among four innovation types: product, process, market, and organizational, has been broadened from goods to goods and services (Camisón & Monfort-Mir, 2012).

In tourism firms, innovation is a source of performance improvements in the form of reducing costs, improving service quality and optimization, improving organizational flexibility, and transforming environmental changes into opportunities (Nam et al., 2020; Williams et al., 2021). The typology of service innovation suggested by the OM may be considered the starting point to reach specificities still hidden in the sector. Although many findings and indicators that come from the innovation context in manufacturing are simply too narrow to be useful for organizations whose main economic offering is an experience, they are not fully disposable. In the tourism sector, innovation is less about producing radical or inimitable things and more about readapting, searching for information, sharing knowledge and co-creating values, and knowing how to effectively use the available human and technological potential. Innovation is collective, incremental and ongoing (Alford & Jones, 2020; Booyens & Rogerson, 2016; Orfila-Sintes, et al., 2005; Pikkemaat & Weiermair, 2007; Sipe, 2021; Vadell & Orfila-Sintes, 2008).

3.4.1. Synthesis of indicators and types of innovation in tourism

The human component, which is embodied in cognitive, motivational, and emotional processes and permeates sectoral progress logically, is crucial for the assessment of innovation dynamics in SMEs. People, with their experiences and skills, in addition to boosting and stimulating sectorial innovation, constitute their main indicator, ending up being directly involved with others. If expressions like 'human resource management' or simply 'people management', were replaced by 'human resource management (technological and non-technological)', this effort would be coherent and timely. Innovative actions are all interrelated in such a way that they interfere in the development of others (albeit of different types and natures); they give rise to the result of experience, appreciation, and evaluation of experiences carried out in a given context. Both the propensity and degree of impact of the innovation, as well as its multidimensional nature and typologies, can be very different, depending on these contexts. While this differentiation makes it difficult to develop a universal model that brings together all innovation indicators for tourism SMEs, some of the main ones are presented in Table 2.

Table 2
Summary of key determinants of innovation

Authors	Innovation types	Dimensions and indicators/determinants of tourism innovation
Hjalager (1996); Hjalager & Gesseneck (2020)	Environmental, product or service, managerial, process, management, and institutional	<p>Organizational structure and resource optimization</p> <ul style="list-style-type: none"> • Basic or advanced conditions with essential elements to support management and main activities (e.g., acquisition of machinery, equipment, physical space, internet, technologies, etc.) • Changes in infrastructure to achieve differentiation • Selection of experienced and qualified personnel • Use of human, material, and/or technological resources to diversify products and services • Organizational or non-technological changes and incentives for creativity and generation of ideas • Continuous dedication to the development of innovation <p>Personal characteristics (managers, teams) and enterprises</p> <ul style="list-style-type: none"> • People engaged in knowledge-intensive activities; gender, age, time of experience, higher education degree, and entrepreneurial profile • Knowledge management combined with risks and uncertainties • Size or dimension, age, activity, and type of company.
Brunner-Sperdin & Peters (2005)	Product, process, marketing, and communication (internal or external)	
Orfila-Sintes et al., (2005);	Supported by ICTs (mainly products and/or technological processes)	
Pikkemaat & Weiermair (2007);	ICT-based product/process, marketing, organizational (focus: external relations)	
Vadell & Orfila-Sintes (2008); Karmanov et al. (2020)	Technological and internet applied to marketing and organizational management (focus: external relations)	
Pivcevic & Pranicjevic (2012); Succurro & Boffa, (2018); Taques et al. (2021); Sipe (2021)	Product, process, marketing, and organizational management	

Table 2 (continued)

Authors	Innovation types	Dimensions and indicators/determinants of tourism innovation
Brooker et al. (2012)	Product, process, and management. Business profile: minimalist, imitative, or innovative	Supply and market solutions <ul style="list-style-type: none"> • Sales, launch, improvement, and/or withdrawal of products/services
Camisón & Monfort-Mir (2012)	Product, process, technology, marketing, market, management, and institutional	<ul style="list-style-type: none"> • Changes in products/services for environmental reasons, economic and/or social viability • Conquest of new (market segments)
Thomas & Wood (2014)	Product, process, marketing, market, management, and institutional	<ul style="list-style-type: none"> • Creation of solutions for (increasing) the satisfaction of experiences and needs, interests, or problems pointed out by stakeholders
Krizaj et al. (2014); Jacob (2003); Volo (2006)	Product, process, marketing, market, and institutional	Ecological awareness, sustainability, and policies <ul style="list-style-type: none"> • Protection measures and asset appreciation
Alonso-Almeida et al. (2016)	Eco-innovation related to product, process, technology, marketing, and organizational	<ul style="list-style-type: none"> • Stimulating consumption and rational production of resources • Holding events, developing and implementing sustainable projects (social, economic, environmental, cultural, etc.)
Booyens & Rogerson (2016)	Product, marketing, environmental, organizational, process, structural and social	<ul style="list-style-type: none"> • Valorization and investments in digital marketing • Capacity for regularization and legal compliance • Attracting investments and cooperation to promote the destination
Omerzel & Jurdana (2016)	Product, process, marketing, and organizations focused on human, social, and organizational capital	Relationship with stakeholders and value co-creation <ul style="list-style-type: none"> • Efforts, tools or strategies to capture stakeholder needs/suggestions
Bell & Ruhanen (2016); Orfila-sintes & Mattsson (2009)	Methods, ideas, products, services, processes, and/or technologies	<ul style="list-style-type: none"> • Quantity of knowledge sources and appropriate sources of funding • Strategic decisions based on the information captured
García-Pozo et al. (2016); Nam et al. (2020)	Socio-environmental sustainability focused on cooperation, competitive and technological differentiation, cost reduction	<ul style="list-style-type: none"> • Actions taken to improve the relationship with stakeholders • Creation of new points of contact, using technology (or not) to narrow interactions and improve communication.
Aksoy et al. (2019); Pikkemaat & Peters (2006)	Social focused on intra-entrepreneurship, cooperation, market orientation, and social well-being	<ul style="list-style-type: none"> • Creation of partnerships, networks, groups or forms of cooperation • Generation of revenue from the effort to strengthen interactions between customers, suppliers, competitors, partners and offer more complete products/services
Nordli (2017); Nordli & Rønningen (2021)	Visible (product, process, marketing, and organizational) and hidden (incremental)	Quality management and process agility <ul style="list-style-type: none"> • New or improved processes, management systems and/or software, sustainability actions for obtaining quality, increasing efficiency, effectiveness and / or reducing costs or quality
Alford & Jones (2020)	Technical, entrepreneurial, organizational, institutional, and digital marketing competencies	<ul style="list-style-type: none"> • Investments in artificial intelligence and market studies • Expenses on information and communications technology or R&D • Non-R&D expenditure on external innovation • Newness or improvements related to logistics, storage or delivery
Melián-Alzola et al., (2020)	Competitors, customers, intermediaries, suppliers, partners, policies-laws, technology, environment	
Valença et al. (2020)	Environmental, product, process, marketing, technological, organizational, management, institutional, and logistics	Human management of people, resources, projects and knowledge <ul style="list-style-type: none"> • Acquisition of human capital, training to develop skills, ability to retain and disseminate specialized knowledge, know-how, well-being and motivation of people
Tajeddini et al. (2020)	Creating value for stakeholders by offering products, services, processes, marketing, and management strategies	<ul style="list-style-type: none"> • Use of the company's brand in other types of business • Absorption capacity (ability to seek, identify, assimilate, explore and apply knowledge effectively)
Ruel & Njoku (2020)	Technological, process, marketing, organizational (artificial intelligence)	<ul style="list-style-type: none"> • Development of projects and management processes that transform knowledge and know-how into competencies and advantages
Su et al. (2021)	Reliance on cost reduction and improvement of operational adjustments (focus on survival, adaptation, and innovation strategies)	<ul style="list-style-type: none"> • Dynamic, open and entrepreneurial leadership • Departmentalization and constant monitoring of the environment (including performance and satisfaction of suppliers, partners, competitors, customers, employees, society and the environment)
Williams et al. (2021)	Risk and uncertainty management involving services, decisions, relationships, and processes	<ul style="list-style-type: none"> • Patent registration/application, patent requests or protection of innovation during research period

According to Table 2, indicators can be classified appropriately in a combination of three types, which involve a broader perspective of organizational innovation: **input** indicators represent the firm's innovation efforts, that is, they comprise the available information on expenses, human capital allocation or innovative initiatives;

on their part, **intermediate** indicators share features such as public availability of information, and the highest level of detail regarding innovation types; **output** indicators can measure multiple aspects of the innovative outcome, determining the degree of innovation generated (Tagues et al., 2021).

Indicators should be able to sustain value over time, as well as contribute to medium- and long-term policies, which try to remove barriers and risks. As responses to problems in society associated with tourism (e.g., carbon footprint issues, over-tourism, biodiversity degradation, health challenges, etc.), policies create incentives, accelerating enterprises' innovation processes in line with broader territorial needs. This might open and renew discussions about the future of tourism (Hjalager, 1996; Hjalager & Gesseneck, 2020). In turn, managers should have control over stakeholders' perceptions, behavior, or performance (Brunner-Sperdin & Peters, 2005; Melián-Alzola et al., 2020; Su et al., 2021; Williams et al., 2021). Managing innovation requires ongoing efforts to encourage and support creativity from people within and outside the firm, as well as cultivating organizational strategy culture and procedures that can turn new ideas into novelties and improvements at the tourism destination and business level.

3.5. Research methods

In this section, the methods used in the articles are described. It was considered useful to understand methodologies that have been adopted to assess innovation dynamics in tourism enterprises. Some articles are merely theoretical; that is, they were written as a discussion in which the literature was reviewed, and some synthesis and deductions were presented, the course of events in a project was presented, or the results of a project were discussed. Most articles selected for this systematic review included case studies involving empirical research. In regard to the type of data, collection method, and sources, the articles were classified into the following three groups: primary data (represented by 14% of the articles), secondary data (represented by 34% of the articles), and both primary and secondary data (represented by 52% of the articles). As the name suggests, primary data is that which is collected for the first time by the researchers. It is factual and original, while secondary data is just the analysis and interpretation of the primary data, which was already collected or produced by the investigating agencies, organizations, or others earlier. Table 3 shows the type of data, collection method, and sources.

Table 3
Type of data, collection method, and sources

Type of data	Type of data collection method/sources	Authors/year
Primary data	Case study, interview, and/or survey	Jacob et al. (2003); Nam et al. (2020); Sipe (2021); Su et al. (2021); Williams et al. (2021)
Secondary data	Quantitative data provided by national or international sources or online reviews	Aksoy et al. (2019); Alonso-Almeida et al. (2016); Brunner-Sperdin & Peters (2005); Camisón & Monfort-Mir (2012); Hjalager (1996); Hjalager & Gesseneck (2020); Karmanov et al. (2020); Krizaj & Bukovec (2014); Ruel & Njoku (2020); Succurro & Boffa (2018); Tagues et al. (2021); Volo (2006)
Both primary and secondary data	Experiments from project application forms, university-led seminars, videos, meetings, and presentations; Case study interviews and/or questionnaires	Alford & Jones (2020); Bell & Ruhanen (2016); Booyens & Rogerson (2016); Brooker et al. (2012); García-Pozo et al. (2016); Melián-Alzola et al. (2020); Nordli (2017); Omerzel & Jurdana (2016); Orfila-Sintes et al. (2005); Orfila-Sintes & Mattsson (2009); Pikkemaat & Peters (2006); Pikkemaat & Weiermair (2007); Pivcevic & Pranicevic (2012); Tajeddini et al. (2020); Thomas & Wood (2014); Vadell & Orfila-Sintes (2008); Valença et al., (2020); Nordli & Rønningen (2021)

Primary data sources include surveys, observations, experiments, questionnaires, and interviews. Secondary data sources are government publications and statistics, websites, books, journal articles, internal records, etc. Additionally, Table 4 presents a summary of the methodologies (in empirical studies) used by the authors considered in this literature review.

Table 4
Methods of data analysis

Type of methods	Type of data collection method/source	Description of the method	Authors/year
Qualitative	Forms or fieldwork that enables and informs theory development	Experiments, discovery-orientated approach, and content analysis	Alford & Jones (2020)
	Interviews	Content analysis	Jacob et al. (2003); Brooker et al. (2012); Bell & Ruhanen (2016); Nordli (2017); Nordli & Rønningen (2021); Su et al. (2021); Tajeddini et al. (2020); Williams et al. (2021)
Both qualitative and quantitative	Survey based on CIS and Interviews	Descriptive statistics and content analysis	Booyens & Rogerson (2016)
	Questionnaires and/or interviews	Content analysis and Correspondence analysis; Content analysis and correlations	Pikkemaat & Peters (2006); Pikkemaat & Weiermair (2007)
	Semi-structured interviews and surveys	Content analysis and descriptive statistics	Sipe (2021)
Quantitative	Questionnaires	Descriptive statistics, linear regression analyses; corrected least squares dummy variable model	García-Pozo et al. (2016); Orfila-Sintes & Mattsson (2009)
		Descriptive statistics, correlations, χ^2 tests t-tests, structural equation models, exploratory factor analyses and confirmatory factor analyses, ANOVA, multivariate analysis of variance	Melián-Alzola et al. (2020), Omerzel & Jurdana (2016), Thomas & Wood (2014), Vadell & Orfila-Sintes (2008)
		Cluster analysis	Pivcevic & Pranicevic (2012)
		Descriptive statistics	Orfila-Sintes et al. (2005), Valença et al. (2020)

Based on Table 4, only seven empirical studies (26%) rely merely on qualitative analysis and methods. They are articles in which, in addition to literature reviews, only qualitative methods were used, such as semi-structured or in-depth interviews, focus groups, (n)ethnographic studies, forms or fieldwork that enable and inform participants about theory development, case studies, discovery-orientated approaches and experiments, action research or more than one of these methods. In all these cases, content analysis is present.

In addition to literature reviews, only twelve articles (34%) used quantitative analysis and data collection methods, including surveys, questionnaires, or, in a few cases, secondary data. Regarding the main analysis method used in these cases, the following can be highlighted: descriptive statistics, linear regression analyses, corrected least squares dummy variable model, correlations, χ^2 tests, T-tests, structural equation models, exploratory factor analyses, confirmatory factor analyses, ANOVA, multivariate analysis of variance and cluster analysis.

Both qualitative and quantitative analyses and methods are represented only in four articles (or 11%). They are articles in which, in addition to literature reviews, qualitative methods were used, followed by quantitative methods; in most cases, qualitative methods like interviews were performed in the first phase with the aim of obtaining enough information and knowledge in the area of research to develop an appropriate and reliable questionnaire, which was used in the second phase. Consequently, methods such as content analysis, correspondence analysis, and descriptive statistics were similarly used. It is still important to highlight that company managers, such as leaders or entrepreneurs, were commonly the target respondents of empirical studies.

Studies of a quantitative nature very commonly encompass three main stages: observation of facts to raise information about the problem, conceptual, behavioral, or activity characterization; definition of hypotheses; and finally, testing and validating of these hypotheses. The fulfillment of these steps led to the identification of dependent and explanatory variables (presented in Table 5). They further characterize and specify certain

concepts, making assumptions measurable. An independent variable is one that influences, determines, or affects other variables; that is, it is the determining factor, condition, or cause for a given result, effect, or consequence. The dependent variables, on the other hand, are those whose behavior can be ascertained due to the oscillations of the explanatory variables; that is, they correspond to what is desired to be predicted and/or obtained as a result. However, indicators captured depending on questionnaires tend to be temporally more restrictive, although broader in their organizational innovation bias. Examples of typical difficulties are mentioned by Taques et al. (2021): the provision of incorrect information; or the respondent's subjectivity, especially in closed-end questions with scale levels.

Table 5
Variables

Authors	Dependents	Explanatories
Jacob et al. (2003)	Innovation	New or improved forms of services; Significant changes in the distribution and marketing of services and in the internal structure; partnerships to expand new markets; entry into new markets and use of technologies
Orfila-Sintes et al. (2005)	Innovation	Introduction of technological changes; process; introduction of internal or acquired changes from suppliers; human capital investments (premium, training and outsourcing)
Pikkemaat & Peters (2006)	Innovation	Quality assurance, marketing, technological information (use of ICTs) human resource management
Pikkemaat & Weiermair (2007)	Innovation	Cooperation, strategic alliances and partnerships among SMEs
Vadell & Orfila-Sintes (2008)	Internet innovation in relations with customers and stakeholders	Size; organizational structure; integration of the hotel into a business group; number of months in operation; managers' view and proactive attitude towards purchasing processes and sales purposes; vision of the low level of technological training of the team; changes caused by the internet and the need for joint action between tour operators at the destination level; managers' awareness of financial, expense and risks implications
Orfila-Sintes & Mattsson (2009)	Innovation	Size; quality usage; additional services; reason for the trip; booking form; occupation; competitive strategy
Pivcevic & Pranicevic (2012)	Innovation	ize per No. (bed)rooms/beds; cycle: seasonal/whole year; occupation; type of ownership; type of business; no. of employees; type of management; leasing, location
Thomas & Wood (2014)	Innovation or absorptive capacity	Knowledge acquisition (13 items), knowledge assimilation (15 items), transformation (16 items) and knowledge exploration (11 items)
Booyens & Rogerson (2016)	Innovation	Introduction of new or improved products/services, introduction of new or improved processes, significant changes for environmental reasons, introduction of significant marketing changes, introduction of significant organizational changes
García-Pozo et al., (2016)	Variations in productivity: eco-innovative practices, category, age, foreign, capital participation, strategic plan, location	Quantified environmental costs and savings, training of employees on environmental issues, green purchasing policies applied, marketing strategies and campaigns, energy and water saving measures, trash or waste recycling, environmental awareness, star rating of the hotel, years since opening, foreign share capital participation, strategic plan development and location in the capital city
Omerzel & Jurdana (2016)	Intellectual capital	Human capital (4 items), social capital (4 items) and organizational capital (3 items)
Melián-Alzola et al. (2020)	Organisational resilience	Needs met, alliances, strategic vision, designs and updates, experiences, relationships, continuous and stimulated learning, ideas, quality, stakeholder satisfaction, improvements, opportunity identification, environment adaptation, newness incorporating technologies, occupancy rate, competitive position, new environmental conditions, average market share growth, image and reputation, customer loyalty
Valença et al. (2020)	Innovation	Offer (4 items), platform (2 items), solutions (2 items), customers (2 items), consumer experience (2 items), value added (1 item), processes (6 items), organization (3 items), supply chain (3 items), presence (1 item), networks (1 item) and brand (2 items)
Sipe (2021)	Innovation or uniqueness of the organization	Amenities, animal encounters, shows, food, venues, props, products, basic offerings; Interactions; service quality (effectiveness, personality, technical service); years of experience, methods, convenience, peace of mind, brand promises equities, excellence, quality, heritage, past and future intertwined, soul, grander purpose

It is also noticed that innovation in tourism companies appears mainly oriented by four perspectives: individual (highlighting factors related to personal/company profile and characteristics), structural (organizational aspects), interactive (analysis of the link between action and structure), and systemic (focused on the national and regional influence of innovative activity). In most cases, the measurement or evaluation variables contemplate the internal organizational structure and provide multidimensional scales to measure the company's performance and innovative capacity. Not unlike secondary databases (surveys and business innovation measurement tools such as the Community Innovation Survey - CIS and Innovation Radar), studies are based on the Schumpeterian concept of innovative performance, measuring innovation at a national, regional, or local stage and tend to show their levels of innovation and activities, not simultaneously covering the four approaches mentioned (Camisón & Monfort-Mir, 2012). In general, the data presented also suggest inconsistency in relation to the ways of measuring and evaluating innovation dynamics in tourism companies.

Although the term "measurement" alludes to a quantitative effort, there is a significant number of articles that apply a qualitative approach to achieve the proposed objectives. In this sense, it is important to note that "measuring" denotes, in many cases, the sense of "evaluating" and, in addition, explores another meaning: "initiative" or "political action". Indicators and determinants of innovation do not always appear in a "measurable" way. They are diverse and may vary depending on the potential of the contexts. In any case, directly or indirectly, the articles contemplate the propensity and impacts of innovative activities for improving the performance experienced by tourism firms. The central concepts, ideas, and results of the articles complement each other (Table 6).

Table 6
Main findings of the articles

Authors	Main findings
Hjalager (1996); Hjalager & Gesseneck (2020)	Innovation policies are governmental endeavours aimed at increasing the capacities and possibilities for businesses to increase profitability, growth, job creation and life quality, social and environmental benefit. This is done through the introduction of new products, processes, marketing methods, technologies, management systems and collaboration models. They encourage business dynamics and sustainability
Orfila-Sintes et al. (2005); Orfila-Sintes & Mattsson (2009); Ruel & Njoku (2020)	Higher category hotels and those belonging to a chain or business group tend to be more innovative. The selection of qualified people and the encouragement of the development of human resources skills and competences are essential. R&D departments are usually not physically or internally built in the tourism SMEs. They are managed by suppliers, who introduce R&D incorporated into technologies or artificial intelligence.
Brunner-Sperdin & Peters (2005); Omerzel & Jurdana (2016); Thomas & Wood (2014)	Perceptions, entrepreneurial conduct and organizational characteristics (related to the profile, structure, availability and use of information) in the economic environment of tourism SMEs should be considered to assess quality. Innovation is also highly dependent on the company's intellectual capital (composed of human capital, organizational capital and social capital, which are interconnected). The ability to acquire, assimilate and use external knowledge (absorptive capacity) is defined, evaluated and can be measured.
Pikkemaat & Peters (2006); Pikkemaat & Weiermair (2007); Booyens & Rogerson (2016)	In the tourism business, innovation is easy to copy, predominantly incremental and non-technological in services, despite the existence of integrated systems based on ICT. In addition to the company level, the prospects of the tourist destination, network systems and cooperation also need to be considered to measure innovation.
Vadell & Orfila-Sintes (2008); Jacob et al. (2003)	The size of companies, the number of months per year that they remain in operation, the internet, ICTs, awareness and positive managerial attitudes towards the internet enhance external relations and innovation.
Brooker et al., (2012); Pivcevic & Pranicevic (2012)	Few SMEs have an innovation level that is beyond incremental, but it is not radical, revolutionary or disruptive. This group of "strategic innovators" are the first to adopt ideas from other sources and adapt them to their particular context. These new ideas are introduced in increments of three to four years, giving individuals enough time to assess the market's reaction to changes and viability.
Aksoy et al. (2019); Alonso-Almeida et al. (2016); Bell & Ruhanen (2016); García-Pozo et al. (2016); Melián-Alzola et al. (2020); Nam et al. (2020)	Eco-innovation (not necessarily involving technologies, but resilience, mindset and entrepreneurial conduct), as a response to consumers' and stakeholders' needs, seeks to reconcile social, economic and environmental concerns. It involves resource savings, recycling, interior design, engineering projects, environmental protection campaigns, new, adapted or improved products, services, processes, business models, reduction of environmental damage and costs. Social innovations strengthen the firm's image, facilitating internal and external relations.
Camisón & Monfort-Mir (2012); Krizaj & Bukovec (2014); Nordli (2017); Nordli & Rønningen (2021)	Newness levels in tourism SMEs should be measured. However, instruments such as CIS have serious anomalies. The analyses have not captured much of the incremental innovation, nor the internal heterogeneities of the innovation of tourism firms. A Schumpeterian approach and others based on the dynamic capabilities of companies should be considered. Surveys should not contain language and technical issues. Researches should qualitatively examine innovation reported by managers, their entrepreneurial and firms' aspects. Hidden innovations are showed.

Table 6 (continued)

Alford & Jones (2020)	Peer-to-peer clusters are an effective means of placing digital marketing knowledge and technology in tourism SMEs. Knowledge transfer and the adoption of complex new technologies for non-technological entrepreneurs require more than training programmes. Each firm has its particularities regarding experiences, knowledge and technological experience. Collaborative projects facilitated by universities enhance digital marketing innovation.
Karmanov et al. (2020)	Travel companies' innovative activities in the market include finding a niche; product development; determining the scope of services; refinement of pricing; expansion of promotion activities; methods for solving problems; research; ensuring investment; adoption of management systems; and cooperation with stakeholders
Sipe (2021)	Current innovation practices and measures were identified by senior business managers. The study also presents a unique and updated perspective on innovation experience.
Succurro & Boffa (2018)	Patent registration is classified into five types: 1) Hospitality services (technological systems for management, safety and control of environmental pollution); 2) Catering services (automated machines and equipment to streamline processes and guarantee quality standards); 3) Related to internal organization (ICTs for safety at work and human management of people); 4) E-marketing; and 5) Not directly related to tourism.
Su et al. (2021)	Human resource resilience-building practices can sustain the tourism workforce, enhancing organizational resilience.
Volo (2006)	Proposed a conceptual model of tourism innovation to facilitate its measurement.
Tajeddini et al. (2020)	Firm size, collaboration, foreign ownership, investment in human resources, the level of formal training for employees, knowledge management and instilling creativity through the firm are crucial indicators in tourism firms. Interactive and supportive innovation is highly dependent on the leadership's commitment and support toward innovation. Managers should establish trust with employees in order to motivate and enthuse them.
Taques et al. (2021)	Devising or building a consolidated and standardized database indicators of tourism SMEs remains a challenge. It is not trivial because there are many peculiarities depending on the contexts. Broader periods for data consideration are mandatory to truly verify innovation effects over time as a learning process, as well as the possibility of drawing cross-sector, or even cross-region and cross-country comparisons.
Valença et al. (2020)	Innovation can be measured. Hotel Innovation Radar - RIH tool was validated. SMEs were evaluated from 12 dimensions: offer, platform, solutions, customer, customer experience, value capture, processes, organization, supply chain, presence, network and brand. Five ordered innovation stages innovation were identified: basic operational, advanced operational, basic innovative, intermediate innovative and advanced innovative.
Williams et al. (2021)	Over time, increased experience and knowledge, including tourism marketing knowledge, allows entrepreneurs to convert some uncertainties into risks, in the context of the enterprise's dynamic capabilities. Innovation is a risk and the way it is understood by managers is as important as their "reality".

Innovation results may be either visible (new-product development and existing-product improvement) or invisible (cooperation, partnership or processual improvements for increasing efficiency) (Camisón & Monfort-Mir, 2012; Nordli, 2017; Karmanov et al., 2020; Krizaj & Bukovec, 2014; Tajeddini et al., 2020). Sustainability has been and will continue to be, one of the key concepts for understanding the future of tourism. Green and ecological solutions, the appreciation for the sociocultural authenticity of communities, the preservation of biodiversity, and the guarantee of social well-being and economic security of destinations with the sustainable use of environmental and cultural resources, need to be part of the structure of a new tourism model (Alonso-Almeida et al., 2016; Aksoy et al., 2019; Bell & Ruhanen, 2016; García-Pozo et al., 2016); Melián-Alzola et al., 2020; Nam et al., 2020). This prioritizes the safety and well-being of people (stakeholders) in the context of leisure or work.

Some research gaps were identified from the results analyzed. For example, it is necessary to explore how knowledge in SMEs can be more effectively transferred given the likely different entrepreneurial learning styles. Technology-in-practice theory provides a useful paradigm for future researchers who are studying the acquisition and sharing of digital marketing knowledge by tourism entrepreneurs (Alford & Jones, 2020). Plausibly, a better understanding of innovation and circular economies could be advanced from the local or regional, national, or international level with the study of measurement of interdependencies, assessing interaction and contribution levels (including all stakeholders) to implement innovation. Results should be more quantified.

Succurro and Boffa (2018) offer a way to measure innovation activity that, until their study, had only been common in other fields. These authors studied successful patent applications by Italian hotels in relation to

firm performance and found significant positive results. This opens the way for future researchers to explore patents as a proxy of innovation activity in other countries and other tourism businesses. Additionally, as shown in the previous section, incremental innovation is predominant. Thus, future research also may explore the reasons behind this and address the following research question: what is the tourism industry missing to disrupt its own markets?

Employees are certainly the backbone of tourism enterprises. However, it is necessary to investigate what specific types of rewards are better to motivate employees' innovative behaviors depending on specific employee characteristics such as level of education, front- or back-of-the-house roles, and national origin since the industry's workforce is highly diverse in those aspects. Also, little is known about how different employee structures within the industry affect innovation results.

4. Conclusions

This systematic literature review has fulfilled the objective of presenting an overview of the research on the assessment of innovation developed by tourism enterprises. The results of the analysis of the state-of-art allow identifying determinants and indicators of sectoral innovation, as well as the typologies, interrelated concepts, pathways, theoretical-methodological approaches, and results. Most studies are developed within the European context (65% of the articles), although countries from all continents appear in the selected works. About 83% of the articles were published in the last decade, especially in 2020.

It was found that innovation in tourism companies is still mainly associated with industry and the technologically advanced characteristics of products, with services also present in manufacturing companies. The boundaries between the different types of tourism innovation are blurred. Additionally, the nature of tourism products is complex, and their characteristics are often more intangible as well as more interactive.

Few authors consider tourism as a particular and specific phenomenon. The convergence approach is thus predominant, evidenced in the effort to adapt theories, models, data collection, and analysis instruments from traditional scientific areas to tourism (covering retail, industry, and service SMEs). It is also concluded that the surveys and instruments hitherto used to measure tourism innovation (based on Oslo Manual) should not be rejected but improved by implementing alternative paths, starting from the demarcation approach, and thus moving them in a more integrative and comprehensive direction (divergent approach).

As a central element, the human management of people, quality, resources, projects, and knowledge (whether or not supported by technologies) is key to assessing innovation (predominantly incremental) in a sector where companies are more easily subject to imitation by their competitors. The nature of innovation in its individual, structural, interactive, and/or systemic perspectives has been described based on apprehending the conceptions and conduct of managers. We have taken an important step, by capturing, gathering, and grouping information, in search of knowledge and consensus in a field of knowledge where many relevant but still scattered contributions already exist.

5. Limitations and recommendations for future research

This article is not exempt from limitations. Since the literature review is retrospective, some of the identified suggestions for future research have already been or are currently being explored. By concentrating the analyses on the field of tourism, focusing on a few disciplines exclusively from the literature review, some additional topics and niche research areas may have been overlooked or only briefly discussed. Findings are also limited by the use of the terms and the articles selected for review. Different publications, such as conference proceedings, books, and industry literature, could have offered additional insights. In fact, the small number of studies reviewed compromises, in part, the generalization of conclusions on this topic, even though some trends and problems identified are common in different areas.

The assessment of innovation in tourism firms depends on instruments capable of measuring it adequately, and for that, definitions and parameters need to be clear. It is not enough to list indicators and test their universal validity; it is necessary to quantify them and then establish classification systems based on scores. Such a classification should promote the comparison of business innovation performance in different contexts, namely, between different tourism firms, distinct destinations, or countries, and allow to conduct longitudinal studies. The development of empirical research on the determinants of innovation in contexts not yet investigated may bring out (new) indicators and typologies. To this purpose, the use of qualitative and quantitative approaches (together) is recommended as a way to complement knowledge on the subject.

Acknowledgements

This work was financially supported by the Coordination for the Improvement of Education Personnel (CAPES Agency), Ministry of Education, Brazil (BEX 00967-15-7); by the Research Unit on Governance, Competitiveness, Public Policies (UIDB/04058/2020) + (UIDP/04058/2020), funded by national funds through FCT - Fundação para a Ciência e a Tecnologia and by Anima Institute.

References

- Aires, J.D.M., & Varum, C.A. (2018). La investigación sobre la medición de la innovación en las empresas de turismo: Revisión de la literatura [Research on the measurement of innovation in tourism companies: Review of the literature]. *Estudios y Perspectivas En Turismo*, 27(1), 102-120. http://www.scielo.org.ar/scielo.php?script=sci_arttext&pid=S1851-17322018000100006
- Aksoy, L., Alkire, L., Choi, S., Kim, P.B., & Zhang, L. (2019). Social innovation in service: A conceptual framework and research agenda. *Journal of Service Management*, 30(3), 429-448. <https://doi.org/10.1108/JOSM-11-2018-0376>
- Alford, P., & Jones, R. (2020). The lone digital tourism entrepreneur: Knowledge acquisition and collaborative transfer. *Tourism Management*, 81, 429-448. <https://doi.org/10.1016/j.tourman.2020.104139>
- Alonso-Almeida, M.D.M., Rocafort, A., & Borrajo, F. (2016). Shedding light on eco-innovation in tourism: A critical analysis. *Sustainability*, 8(12), Article 1262. <https://doi.org/10.3390/su8121262>
- Bell, C., & Ruhanen, L. (2016). The diffusion and adoption of eco-innovations amongst tourism businesses: The role of the social system. *Tourism Recreation Research*, 41(3), 291-301. <https://doi.org/10.1080/02508281.2016.1207881>
- Booyens, I., & Rogerson, C.M. (2016). Tourism innovation in the global south: Evidence from the Western Cape, South Africa. *International Journal of Tourism Research*, 18(5), 515-524. <https://doi.org/10.1002/jtr.2071>
- Brandão, A.F.F., & Costa, C. (2014). Inovação em turismo: Uma abordagem sistémica e territorial [Innovation in tourism: A systemic and territorial approach]. In R. Costa, Z. Breda, C. Costa & F. Brandão (Eds.), *Produtos e competitividade do turismo na Lusofonia* (2nd ed., pp. 70-89). Escolar Editora.
- Brooker, E., Joppe, M., Davidson, M.C.G., & Marles, K. (2012). Innovation within the Australian outdoor hospitality parks industry. *International Journal of Contemporary Hospitality Management*, 24(5), 682-700. <https://doi.org/10.1108/09596111211237246>
- Brunner-Sperdin, A., & Peters, M. (2005). Importance and measurement of entrepreneurial quality and processes in tourism. *Journal of Quality Assurance in Hospitality & Tourism*, 5(1), 73-90. https://doi.org/10.1300/J162v05n01_06
- Camisón, C., & Monfort-Mir, V.M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives. *Tourism Management*, 33(4), 776-789. <https://doi.org/10.1016/j.tourman.2011.08.012>
- Costa, C. (2014). Gestão estratégica do turismo: Evolução epistemológica dos modelos e paradigmas e tendências para o futuro [Strateško upravljanje turizmom: Epistemološka evolucija dva modela i paradigme i trendovi za budućnost]. In C. Costa, F. Brandão, Z. Breda & R. Costa (Eds.), *Turismo nos países Lusófonos: Conhecimento, estratégia e territórios* (pp. 19-40). Escolar Editora.
- Dann, D., Teubner, T., & Weinhardt, C. (2019). Poster child and guinea pig - Insights from a structured literature review on Airbnb. *International Journal of Contemporary Hospitality Management*, 31(1), 427-473. <https://doi.org/10.1108/IJCHM-03-2018-0186>

- Deming, W.E. (1992). *Qualidade: A revolucao da administracao* [Quality: A revolution in management]. Saraiva.
- Eusébio, C., Carneiro, M.J., Madaleno, M., Robaina, M., Rodrigues, V., Russo, M., ... Monteiro, A. (2020). The impact of air quality on tourism: A systematic literature review. *Journal of Tourism Futures*, 7(1), 111-130. <https://doi.org/10.1108/JTF-06-2019-0049>
- García-Pozo, A., Sánchez-Ollero, J.-L., & Ons-Cappa, M. (2016). ECO-innovation and economic crisis: A comparative analysis of environmental good practices and labour productivity in the Spanish hotel industry. *Journal of Cleaner Production*, 138, 131-138. <https://doi.org/10.1016/j.jclepro.2016.01.011>
- Gomezelj, D.O. (2016). A systematic review of research on innovation in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 28(3), 516-558. <https://doi.org/10.1108/IJCHM-10-2014-0510>
- Hjalager, A.-M. (1996). Tourism and the environment: The innovation connection. *Journal of Sustainable Tourism*, 4(4), 201-218. <https://doi.org/10.1080/09669589608667268>
- Hjalager, A.M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1-12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Hjalager, A.-M., & Gesseneck, M.J.V. (2020). Capacity-,system-and mission-oriented innovation policies in tourism-characteristics, measurement and prospects. *Journal of Policy Research in Tourism, Leisure and Events*, 12(2), 197-216. <https://doi.org/10.1080/19407963.2019.1605609>
- Jacob, M., Tintoré, J., Aguiló, E., Bravo, A., & Mulet, J. (2003). Innovation in the tourism sector: Results from a pilot study in the Balearic Islands. *Tourism Economics*, 9(3), 279-295. <https://doi.org/10.1177/135481660300900303>
- Karmanov, M.V., Kiseleva, I.A., Kuznetsov, V.I., Zavrzhin, A.V., & Shubina, I.V. (2020). The process of innovation diffusion and adoption of innovations in the business modelling for travel companies. *Journal of Environmental Management and Tourism*, 11(2), 346-354. [https://doi.org/10.14505/jemt.v11.2\(42\).13](https://doi.org/10.14505/jemt.v11.2(42).13)
- Krizaj, D., Brodnik, A., & Bukovec, B. (2014). A tool for measurement of innovation newness and adoption in tourism firms. *International Journal of Tourism Research*, 16(2), 113-125. <https://doi.org/10.1002/jtr.1905>
- Linnenluecke, M.K., Marrone, M., & Singh, A.K. (2020). Conducting systematic literature reviews and bibliometric analyses. *Australian Journal of Management*, 45(2), 176-194. <https://doi.org/10.1177/0312896219877678>
- Melián-Alzola, L., Fernández-Monroy, M., & Hidalgo-Peñate, M. (2020). Hotels in contexts of uncertainty: Measuring organisational resilience. *Tourism Management Perspectives*, 36, Article 100747. <https://doi.org/10.1016/j.tmp.2020.100747>
- Nam, H.V., Lo, A., Yeung, P., & Hatter, R. (2020). Hotel ICON: Towards a role-model hotel pioneering sustainable solutions. *Asia Pacific Journal of Tourism Research*, 25(5), 572-582. <https://doi.org/10.1080/10941665.2020.1746367>
- Nordli, A.J. (2017). Measuring innovation in tourism with Community Innovation Survey: A first step towards a more valid innovation instruments. *Scandinavian Journal of Hospitality and Tourism*, 17(4), 423-440. <https://doi.org/10.1080/15022250.2016.1247382>
- Nordli, A.J., & Rønningen, M. (2021). Tracking hidden innovations in tourism. *Creativity and innovation management*, 30(2), 303-319. <https://doi.org/10.1111/caim.12440>
- Omerzel, D.G., & Jurdana, D.S. (2016). The influence of intellectual capital on innovativeness and growth in tourism SMEs: Empirical evidence from Slovenia and Croatia. *Economic Research-Ekonomska Istraživanja*, 29(1), 1075-1090. <https://doi.org/10.1080/1331677X.2016.1211946>
- Orfila-sintes, F., & Mattsson, J. (2009). Innovation behavior in the hotel industry. *Omega - The International Journal of Management Science*, 37(2), 380-394. <http://doi.org/10.1016/j.omega.2007.04.002>
- Orfila-Sintes, F., Crespi-Cladera, R., & Martínez-Ros, E. (2005). Innovation activity in the hotel industry: Evidence from Balearic Islands. *Tourism Management*, 26(6), 851-865. <https://doi.org/10.1016/j.tourman.2004.05.005>
- Pikkemaat, B., & Peters, M. (2006). Towards the measurement of innovation - A pilot study in the small and medium sized hotel industry. *Journal of Quality Assurance in Hospitality & Tourism*, 6(3-4), 89-112. https://doi.org/10.1300/J162v06n03_06
- Pikkemaat, B., & Weiermair, K. (2007). Innovation through cooperation in destinations: First results of an empirical study in Austria. *Anatolia*, 18(1), 67-83. <https://doi.org/10.1080/13032917.2007.9687036>

- Pivcevic, S., & Pranicevic, D.G. (2012). Innovation activity in the hotel sector - The case of Croatia. *Economic Research-Ekonomska Istrazivanja*, 25(1), 337-363. <https://doi.org/10.1080/1331677X.2012.11517568>
- Ram, Y. (2021). Metoo and tourism: A systematic review. *Current Issues In Tourism*, 24(3), 321-339. <https://doi.org/10.1080/13683500.2019.1664423>
- Ruel, H., & Njoku, E. (2020). AI redefining the hospitality industry. *Journal of Tourism Futures*, 7(1), 53-66. <https://doi.org/10.1108/JTF-03-2020-0032>
- Schumpeter, J.A. (1934). *The theory of economic development*. Harvard University Press.
- Sharma, D. (2016). Enhancing customer experience using technological innovations: A study of the Indian hotel industry. *Tourism Themes*, 8(4), 469-480. <https://doi.org/10.1108/WHATT-04-2016-0018>
- Sipe, L.J. (2021). Towards an experience innovation canvas: A framework for measuring innovation in the hospitality and tourism industry. *International Journal of Hospitality and Tourism Administration*, 22(1), 85-109. <https://doi.org/10.1080/15256480.2018.1547240>
- Su, D.N., Tra, D.L., Huynh, H.M.T., ThiNguyen, H.H., & O'Mahony, B. (2021). Enhancing resilience in the Covid-19 crisis: Lessons from human resource management practices in Vietnam. *Current Issues in Tourism*, 24(22), 3189-3205. <https://doi.org/10.1080/13683500.2020.1863930>
- Succurro, M., & Boffa, F. (2018). Patenting patterns in the tourism industry: Evidence from Italy. *International Journal of Tourism Research*, 20(4), 538-541. <https://doi.org/10.1002/jtr.2203>
- Tajeddini, K., Martin, E., & Altinay, L. (2020a). The importance of human-related factors on service innovation and performance. *International Journal of Hospitality Management*, 85, Article 102431. <https://doi.org/10.1016/j.ijhm.2019.102431>
- Taques, F.H., López, M.G., Basso, L.F., & Areal, N. (2021). Indicators used to measure service innovation and manufacturing innovation. *Journal of Innovation and Knowledge*, 6(1), 11-26. <https://doi.org/10.1016/j.jik.2019.12.001>
- Thomas, R., & Wood, E. (2014). Innovation in tourism: Re-conceptualising and measuring the absorptive capacity of the hotel sector. *Tourism Management*, 45, 39-48. <https://doi.org/10.1016/j.tourman.2014.03.012>
- Vadell, J.B.G., & Orfila-Sintes, F. (2008). Internet innovation for external relations in the Balearic hotel industry. *Journal of Business & Industrial Marketing*, 23(1), 70-80. <https://doi.org/10.1108/08858620810841506>
- Valença, M.N., Sobral, M.F.F., Lima, T.L.D.A., & Farias, D.D.M. P. (2020). Innovation radar in hospitality: A new procedure to evaluate the innovation in hotels. *Journal of Hospitality and Tourism Technology*, 11(2), 313-326. <https://doi.org/10.1108/JHTT-10-2017-0119>
- Verreynne, M.-L., Williams, A.M., Ritchie, B.W., Gronum, S., & Betts, K.S. (2019). Innovation diversity and uncertainty in small and medium sized tourism firms. *Tourism Management*, 72, 257-269. <https://doi.org/10.1016/J.TOURMAN.2018.11.019>
- Volo, S. (2006) A consumer-based measurement of tourism innovation. *Journal of Quality Assurance in Hospitality & Tourism*, 6(3-4), 73-87. http://doi.org/10.1300/J162v06n03_05
- Williams, A.M., Rodríguez Sánchez, I., & Škokić, V. (2021). Innovation, risk, and uncertainty: A study of tourism entrepreneurs. *Journal of Travel Research*, 60(2), 293-311. <https://doi.org/10.1177/0047287519896012>
- World Tourism Organization. (2020, March 5). *Facts and figures*. <http://www.unwto.org/facts/eng/vision.htm>
- Zhong, L., Sun, S., Law, R., & Li, X. (2021). Tourism crisis management: Evidence from COVID-19. *Current Issues in Tourism*, 24(19), 2671-2682. <https://doi.org/10.1080/13683500.2021.1901866>

Submitted: November 21, 2021

Revised: March 04, 2022

Accepted: April 20, 2022