Chapter 3
Sustainability Innovation in Tourism: A Systematic Literature Review

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Abstract Sustainability innovation has been discussed as an approach to tourism. The concept of innovation is still regarded as abstract or with little application, and the same is true of the concept of sustainable tourism. This systematic literature review intends to investigate the state of sustainability innovation in tourism addressing the question: "What are the potential ways to implement sustainable innovation within the tourism sector?"

The article is a systematic literature review (SLR) on sustainable innovation in tourism, in the databases Scopus, Web of Science and Science Direct, which resulted in 492 papers. By applying the PRISMA model and VOSviewer software, the study sample is narrowed to 50 papers collected from 25 journals, published between 2000 and 2022. The articles that make up the SLR comprise qualitative, quantitative and mixed studies, with the research aiming to summarise theories, ideologies, methods and practices at different levels and stages applied in different tourism contexts. This study categorises the main topics: business model, sustainable innovative strategies, innovative leadership and stakeholders' relationship.

The outcomes demonstrate diverse strategies for implementing sustainable innovation in the field of tourism, along with recommendations for future implementation across various tourism sub-sectors. These findings underline the importance of introducing sustainable innovations that foster sustainable development through collaborative efforts among all stakeholders. By creating added value to products and services, sustainable innovation enables companies within each tourism sector and the destination as a whole to differentiate themselves. The results also highlight

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that perceptions of sustainable innovation differ based on the level of knowledge, acceptance and understanding of individuals involved. Furthermore, the implementation of sustainable innovation can be customised to suit different objectives and applied at various levels within different tourism sub-sectors over an extended period of time.

Keywords Sustainable innovation · Tourism sustainability · Tourism · Systematic literature review

3.1 Introduction

Innovation is considered by Schumpeter (1934, p. 66) as "a mixture of new combinations" that comprises something new, the introduction of a new production method, opening to new markets, acquiring a new supply chain and incorporating a new form of organisation and development of new activities.

Applying innovation in tourism, according to Hjalager (2010), should consider (i) product or service innovation (changes in the product detected by the consumer), (ii) innovative processes (increased efficiency, productivity and flow), (iii) managerial innovation (optimisation of human resource management with the development of training and retention plans), (iv) management innovation (planning and management of tourist destinations) and (v) institutional innovation (promotion of collaborative networks, adaptation to new realities and legal framework).

This work aims to understand the state of the art on sustainable innovation in tourism, through a systematic literature review (SLR) between 2000 and 2022, considering the evolution of the concept, the different perspectives and its application in the tourism sector, providing guidelines, on the application and implementation of sustainable innovation in tourism. Considering the main goal "What are the potential ways to implement sustainable innovation within the tourism sector?," the specific objectives were defined as follows: to analyse the characteristics and obstacles to the implementation of sustainable innovation in tourism and to understand whether the profile of new entrepreneurs is associated with the implementation of sustainable innovation.

As a methodology, it is consistent with a SLR, which was conducted between December 2022 and January 2023, having resulted in a sample of 50 papers, taken from the databases Scopus, Web of Science and Science Direct, in line with key criteria: title, keywords, abstract and subject area.

The research commences by conducting a thorough literature review to elucidate the concepts under investigation. Subsequently, the study proceeds to outline the employed methodology, followed by the presentation of the obtained results. Finally, a conclusion is provided.

3.2 Literature Review

3.2.1 Sustainable Tourism

The UNEP and WTO (2005, p. 11) defines sustainable tourism as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities". As a result, tourism, in addition to meeting the needs of visitors, must also ensure the efficient management of its natural resources and promote more eco-friendly activities. According to Hallenga-Brink and Brezet (2005), sustainable tourism minimises or reduces the impact of tourism activities on the environment, promotes cultural preservation and preserves local communities through employment creation and attraction of human resources. Schaltegger and Wagner (2011) add that sustainable tourism is only effective if there is entrepreneurship and sustainable innovation from which the whole community can benefit, thus presenting a competitive advantage. Sustainability in tourism can be applied through innovation.

3.2.2 Sustainable Innovation

Innovation encompasses the complete journey of generating novel concepts, addressing challenges and introducing fresh ideas into processes, products or services (Hall & Williams, 2008). It is not a singular event but rather a continuous endeavour that extends across an extended duration. According to Hall and Williams (2008), innovation is described as the process of actively implementing any new idea that addresses problem-solving, resulting in the acceptance and adoption of new concepts or processes, products or services. Thus, acceptance and implementation are crucial aspects of innovation.

Fichter (2005, p. 1) mentioned that sustainable innovation as "the development and implementation of a radically new or significantly improved technical, organisational, business-related, institutional, or social solution that meets a triple bottom line of economic, environmental, and social value creation". All processes within the innovation journey, according to Charter and Clark (2007), including idea generation, research, development and commercialisation, must incorporate the dimensions of sustainability encompassing the environmental, social and economic aspects.

The innovation can be incremental or radical, as explained by Markides and Geroski (2005). Incremental innovation is the application of improvements to an existing product, service or process and focuses on efficiency, development, productivity and competitive differentiation of a product, while radical innovation is characterised by the creation of new markets, disruptive to consumers and markets (Markides & Geroski, 2005).

The integration of sustainable innovation into sustainable development protects natural resources, ensuring survival and common well-being (Dresner, 2008). In addition to reflecting on the community, the benefits of sustainable innovation also manifest in the reduction of production costs (in the industry) or, considering a long-term perspective, in a social and political paradigm shift, shaping and framing the market for a more sustainable environment (Schaltegger & Wagner, 2011).

Sustainable innovation in tourism can be applied at different levels of the value chain, from the management of human resources to the development of new products or the implementation of new technologies, resulting in a more innovative service offer with a positive impact on consumer demand and, consequently, on the development of more sustainable products (Streimikiene et al., 2021), positioning companies in the sustainable marketplace.

3.3 Research Methodology

The SLR methodology, which has been important for defining concepts and content in social sciences, consists of systematic and explicit data collection, which is derived from the definition of a clear research question and aims to identify, select and critically evaluate relevant research and collect the data that will be included in the literature review (Moher et al., 2009).

In this paper, the PRISMA method was used in the SLR, consisting of a checklist of 27 items grouped into 4 phases of a flowchart: (i) identification, with process description and analysis; (ii) screening, that is, the description of the article selection process; (iii) eligibility, identification of terminology within the scope of tourism sustainability and innovation; and (iv) finally included, referring to the articles that were included in the literature review.

The first step of the research was selecting databases, with the choice falling on the Web of Science, Scopus and Science Direct, given that these not only concentrate the largest number of articles but are also the main source of literature on sustainable innovation in tourism. The second step was analysing each article and identifying the relationship between sustainability and innovation, understanding their influence on tourism. The results will be presented, compared and discussed below.

The SLR was conducted combining three dimensions: “sustainability” AND “innovation” AND “tourism”, which resulted in 492 papers, published between the years 2000 and 2022. The articles were then subject to analysis and careful selection, to present the most reliable and representative results on the theme of sustainable innovation in tourism.

The literature on sustainable innovation in tourism took into consideration eight criteria: (1) availability in one of the three databases, with at least one citation; (2) presence of one of the three keywords, namely, “sustainability/sustainable”, “tourism” and “innovation/innovative”, in the title, abstract or full text; (3) restricted access, SLR and proceedings papers; (4) peer-reviewed papers; (5) journal

publications; (6) publications published between 2000 and 2022; (7) papers in the English language; and (8) consideration or application of sustainable innovation in tourism.

Considering the selection criteria, 492 potential articles were identified, and 89 duplicate articles were removed. Subsequently, 353 articles that did not meet the defined methodological criteria (no keywords in the title, abstract or full text, no open access, SLR or conference proceedings) were removed. The result was a sample of 50 articles with high interest in the study taken from the online databases Web of Science, Scopus and Science Direct, concerning 24 academic journals, information collected in December 2022 and January 2023.

To ensure the transparency and reliability of the study, the different concepts of the study, sustainable tourism and sustainable innovation, were identified and explained, validating the replicable review process. All studies that did not consider the main keywords or were not directly related to sustainable innovation or tourism were eliminated, as shown in the PRISMA diagram flow for the SLR (Fig. 3.1).

In addition, a database was created in Microsoft Excel, for subsequent bibliometric analysis, featuring the following information: publications, year of publication,

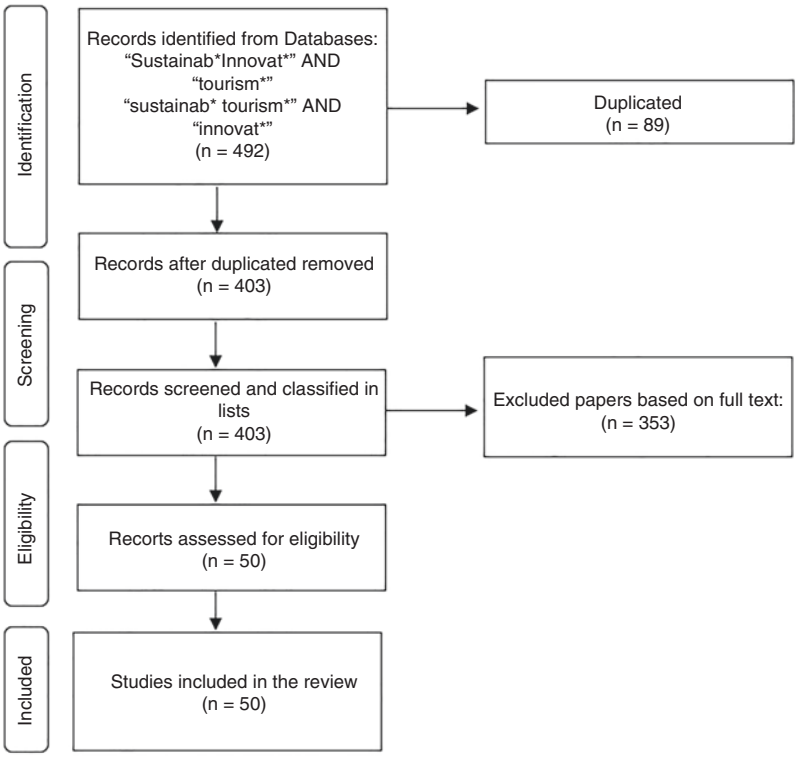

Fig. 3.1 PRISMA diagram flow adopted for the SLR. (Source: Adapted from Moher et al., 2009)

search location, number of citations, impact in percent of citations and research methods (qualitative, quantitative and mixed).

3.4 Bibliometric Analysis

The bibliometric analysis shows us a significant increase in the number of publications from 2018. The first article found in the database related to the topic under study dates to the year 2000, accounting for only three articles until 2010 (Fig. 3.2).

From 2018, a growth in the number of published articles is observed, with 2020 being the year with the highest number of publications, with 11 articles. Between 2020 and 2022, 25 articles were published, representing half of the sample under study (50 papers).

Regarding the number of publications by journal, as seen in Table 3.1, there is a dispersion of articles across the different journals, with some featuring only one article, while the journal *Sustainability* has put forward 21 articles.

This dispersion of articles may be related to the transversality of the sub-sectors that make up tourism.

Table 3.2 shows the geographical location of the studies. Most of the studies are multinational (nine), with simultaneous application in different geographical areas, followed by the four studies applied in China, Taiwan or Italy, which are more representative.

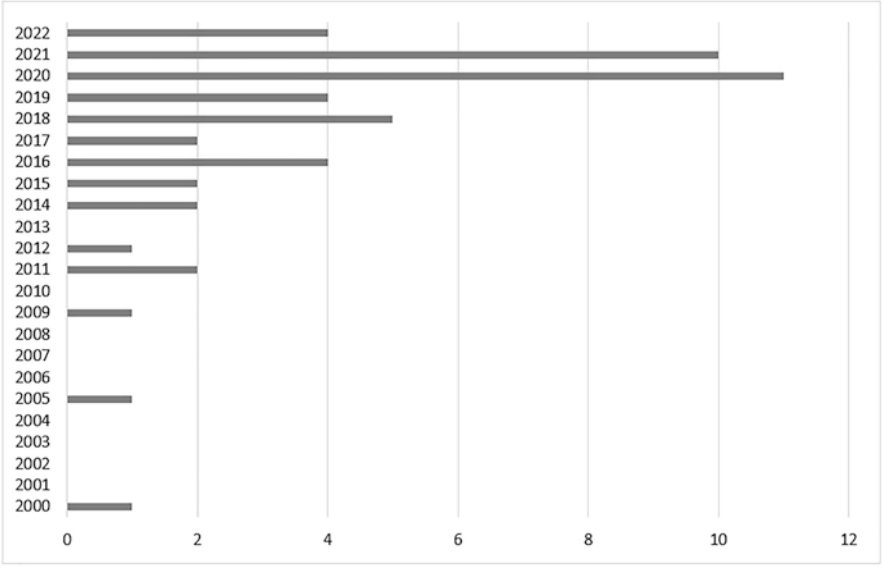

Fig. 3.2 Publication numbers per year (2000–2022)

Table 3.1 Number of publications per journal (2000–2022)

Journal	Number of publications per journal
Agronomy	1
Amfiteatru Economic	1
Baltic Journal of Management	1
Business Strategy and the Environment	1
Civil Engineering Journal	1
Energy Procedia	1
International Entrepreneurship and Management Journal	1
International Journal of Environmental Research and Public Health	1
International Journal of Hospitality Management	1
International Journal of Production Research	1
Investigaciones Europeas de Dirección Economía de la Empresa	1
Journal for International Business and Entrepreneurship Development	1
Journal of Business Research	2
Journal of Cleaner Production	1
Journal of Open Innovation: Technology, Market, and Complexity	1
Journal of Small Business Strategy	1
Journal of Sustainable Tourism	2
Kasetsart Journal of Social Sciences	1
Plos ONE	1
Procedia – Social and Behavioral Sciences	5
Sustainability	21
Sustainable Development and Planning	1
Tourism Management	1
Tourism Planning & Development	1

The other geographic locations all present at least one case study, up to a maximum of three case studies.

Figure 3.3 shows the number of references cited by each article. Most articles cite between 41 and 100 references, representing 64% of the sample.

It should be noted that 6% of the sample has up to 20 references, 14% between 21 and 40 references, 8% between 101 and 160 references and finally only 4% between 161 and 200 references.

The 50 selected papers include a total of 4964 citations. Table 3.3 shows the articles with the highest number of citations, representing 75.2% of the total citations.

It should be noted that the first journal concerning sustainable innovation in tourism dates from 2000, having been cited 974 times. The journal with the highest number of citations in the sample, 1971, dates from 2011.

Table 3.2 Number of publications per location

Location	Number of publications per location where the survey was conducted
Asian Region	1
Asia	1
Baltic Sea Region	1
China	4
Croatia	1
Europe	1
Germany	2
Greece	1
India	1
Indonesia	1
Italy	4
Mexico	1
Multinational	9
Netherlands	2
New Zealand	1
North America	1
Pakistan	2
Poland	1
Portugal	3
Romania	1
Spain	2
Sweden	1
Taiwan	4
Thailand	2
United States	1
Western Europe	1

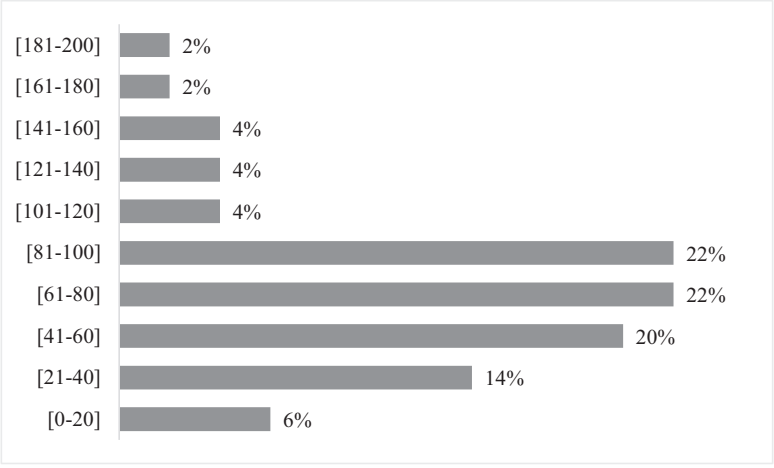

Fig. 3.3 Number of cited references

Table 3.3 Publications with more citations in the sample (75.2% of the total citations in the sample)

Authors	Publications	Title	Year	Keywords	Number of citation
Ateljevic, I.; Doorne, S.	*Journal of Sustainable Tourism*	"Staying Within the Fenc': Lifestyle Entrepreneurship in Tourism	2000	Economic development entrepreneur, lifestyle, small-scale industry, New Zealand	974
Horng, JS.; Liu, CH.; Chou, SF.; Tsai, CY.; Chung, YC.	*International Journal of Hospitality Management*	From Innovation to Sustainability: Sustainability Innovations of eco-friendly hotels in Taiwan	2017	Diffusion of innovation, environmental marketing strategy, hotel, organizational environment, sustainable development, sustainability innovation, Taiwan	117
Kusi-Sarpong, Simonov; Gupta, Himanshu; Sarkis, Joseph	*International Journal of Production Research*	A supply chain sustainability innovation framework and evaluation methodology	2018	Supply chain management, sustainability, innovation management, manufacturing, best-worst method, environment	290
Najda-Janoszka, M.; Kopera, S.	*Procedia - Social and Behavioral Sciences*	Exploring barriers to innovation in the tourism industry – the case of the southern region of Poland	2014	Barriers, innovation, tourism industry, SMEs, regional tourism	141
Schaltegger, Stefan; Wagner, Marcus	*Business Strategy and the Environment*	Sustainable Entrepreneurship and Sustainability Innovation: Categories and Interactions	2011	Sustainability, innovation, institutional, sustainable, social	1971
Smerecnik, K.; Andersen, P.	*Journal of Sustainable Tourism*	The diffusion of environmental sustainability innovations in NorthAmerican hotels and ski resorts	2011	Sustainable tourism, sustainable development, diffusion of innovation, tourism management, hotel, ski resort	241

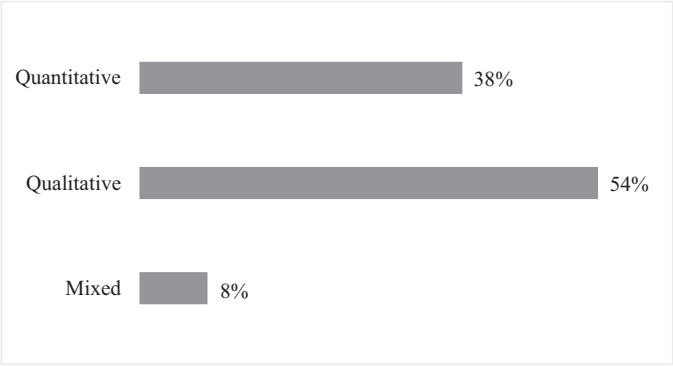

Fig. 3.4 Research methods

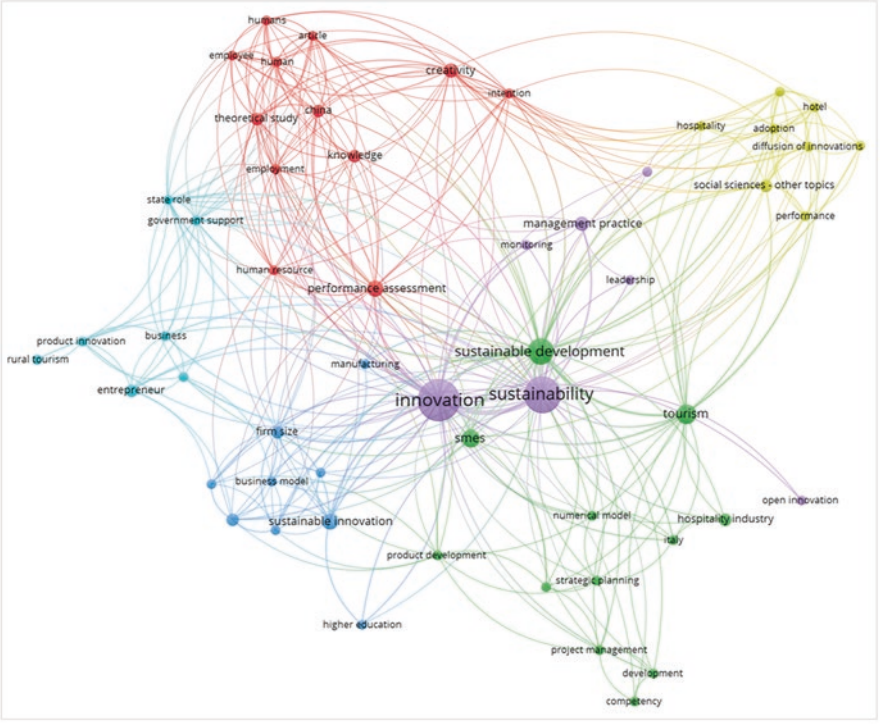

Fig. 3.5 VOSviewer keywords

Figure 3.4 shows the analytical approach used in the sampled papers. The qualitative approach represents 54% of the sample, compared to the quantitative approach, 38%, and the mixed methods approach, 8%, of the sample.

According to van Eck and Waltman (2010), VOSviewer is a computer program for creating, visualising and exploring the maps of science based on any type of

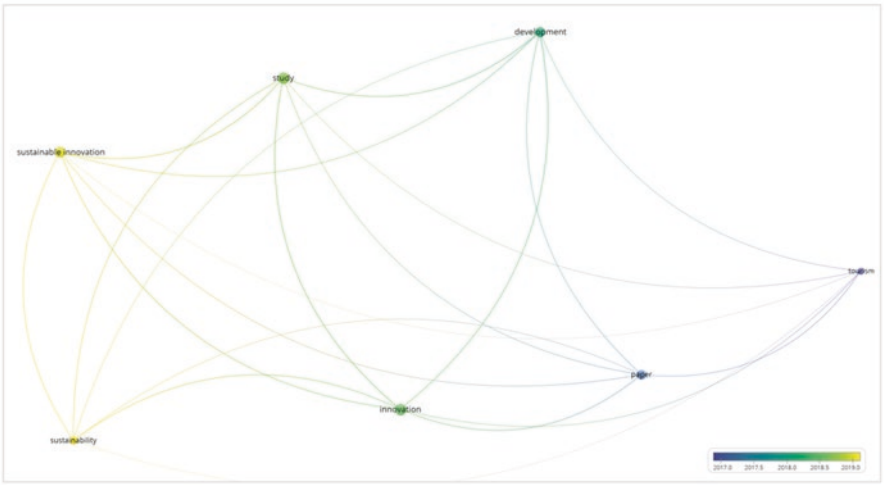

Fig. 3.6 VOSviewer titles and abstracts

network data. This computer program can be used for analysing all kinds of bibliometric network data.

We applied the VOSviewer to identify the large dimensions of SLR, innovation, sustainability, sustainable development and tourism (Fig. 3.5).

A more significant link, of equal distance, is observed between innovation, sustainability and sustainable development and a more moderate link with tourism. It can be concluded that innovation and sustainability are dimensions with more significant linkage and with stronger connections (larger nodes).

The map of co-occurrence between the titles and abstracts used in the VOSviewer (Fig. 3.6) identifies seven keywords in the sample of selected articles. The most highlighted dimensions are innovation, development, sustainable innovation and tourism, with strong links and a similar distance between them.

3.4.1 Results

This section is divided into four main topics: business model, sustainable innovative strategies, innovative leadership and stakeholders' relationships.

3.4.1.1 Business Model

Tourism has a high impact on the sustainable economic growth of a country. Providing SME with sustainable innovation strategies will have an important impact on the business world according to Muñoz-Pascual, Curado and Galende (2019).

Drawing from an analysis of relations, the authors aimed to verify the options for the implementation of sustainable innovation in SME based on the triple bottom line. It was demonstrated that social and environmental relations and the costs with human resources and partnerships are important in product innovation, being important elements in the development of new products.

On the other hand, Najib et al. (2021) analysed the factors affecting sustainable innovation in SME and concluded that sustainable organisational innovation depends on the innovation potential of employees and the innovation culture of the organisation, which is influenced by its leaders and the challenges in the process of implementing social responsibility (Sundström et al., 2020).

According to Melane-Lavado et al. (2018), large- and medium-sized companies that keep in touch with outside organisations have been shown to increase their innovative potential. This sharing of information with universities, internal organisation, customers and even the cooperation with competitors increases the potential for innovative growth, to the extent that this is proportional to openness with organisations outside the company.

Horng et al. (2017) studied the association between innovation diffusion, environmental marketing strategy, sustainability innovation and the organisational environment. The study concluded that the organisational environment moderates the relationship between innovation diffusion and environmental marketing strategy. Buijtendijk et al. (2021) concluded that actors interpret sustainability in different ways, and for this reason, in its implementation phase, innovation is considered a failure, causing tensions and conflicts and often calling into question the cultural efficiency of the organisation.

External factors can be drivers or inhibitors of innovation implementation, according to the study applied to the hotel industry by López-Fernández, Serrano-Bedia and Gómez-López (2009). The results revealed that there is a significant and positive relationship between being a large company and belonging to a hotel group and the decision to undertake and implement innovative activities. Also in the value chain, the company size influences distribution and how business models are developed, as confirmed by Aguilar-Fernández and Otegi-Olaso (2018).

Due to the lack of resources, small companies, according to Tohănean et al. (2020), present financial vulnerabilities in the application of sustainable innovation but on the other hand also present greater flexibility in decision-making or in changing strategies. Financial vulnerability is observed in the study of Lin et al. (2020), where they apply touchpoints in rural tourism and identify budgetary constraints as an obstacle to product development.

In line with these results, Aguilar-Fernández and Otegi-Olaso (2018) applied the business model for sustainable innovation, the BMfSI, with the results showing that the size of a company is a differentiating element for implementation innovation. Additionally, small companies should consider information from socio-environmental indicators, involvement with suppliers and the active inclusion of customers as agents of change.

To reduce the tensions and conflicts generated in the initial phase, Cappa et al. (2016) suggest integrating open innovation for collaborative product development,

offering more competitive, marketable and sustainable products and reducing costs with a direct impact on energy consumption and pollutant gas emissions, reaching a wider range of consumers with less purchasing power. Regarding sustainable innovation design in SME, Hallenga-Brink and Brezet (2005) propose to implement product and service innovation based on five objectives: (i) to motivate SME to redesign their business based on the three pillars of sustainability; (ii) to transform sustainable vision and desires into innovative concepts; (iii) to promote pilot projects within daily business practices; (iv) to stimulate a structured approach, considering internal and external factors; and (v) to provide a practical kit to include sustainable products in their business.

Lopez-Valeiras et al. (2015) suggest a sustainable business model, based on management accounting and control systems and their relationship with sustainable innovation and international performance at an organisational level. The results confirm that management accounting and control systems influence and have a positive impact on the development of innovation and organisational performance, adding that there is critical capacity, on the part of organisations, to increase organisational performance and sustainable innovations. With a more global vision of radical innovation, Muñoz-Pascual et al. (2019) present a proposal for implementing the D4S (development four sustainability) model that encompasses radical innovation and aims at developing new products and product-service systems (PSS), challenging consumption and products. The design for sustainability model is focused essentially on incremental design (benchmarking) and radical design (new product design). There is a huge potential to redefine emerging consumption and production patterns, and small investments can stimulate radical changes with a high impact on the production of new products and be economically sustainable at the same time.

In their turn, Muñoz-Pascual et al. (2019) present a second proposal, based on the design diamond method, by Roozenburg and Eekels (1991) (product innovation) and Brezet et al. (2000) (eco-efficient service design) (Cit.by Muñoz et al., 2019). They assumed that projects and networks offer the opportunity to generate new ideas among members, not competitors; the application of this method allowed the opening of communication channels, where all participants collaborated with innovative ideas. Co-creation is, therefore, pointed out by Paniccia et al. (2017) as a model for generating sustainable innovation. In the study developed and applied to religious lodges, they concluded that lodges can be considered sustainable when they apply co-evolutionary adaptations with their territory and tourists and in this way positively affect sustainable development and create value.

Veronica et al. (2020) consider that sustainable innovation management is fundamental to changing management patterns and consequently modifying behaviours in society, placing stakeholders as the main and fundamental actors in the implementation of innovation. Focused on the influence, tangible and intangible, of stakeholders in the orientation of companies towards sustainable innovations, the results show that if SME are available for the co-creation, sharing and reuse of environmental knowledge, this element will provide growth and knowledge sharing and can adopt innovative sustainability strategies.

3.4.1.2 Sustainable Innovative Strategies

As explained by Li et al. (2021), in some cases, sustainable innovation strategies become a daily practice in companies, which address internal cultural diversity, concluding that the communication and management of cultural intelligence in a heterogeneous cultural environment is more prone to knowledge sharing among employees, thus becoming necessary to implement and share clear and objective guidelines on the process of implementing sustainable innovation.

Cosma et al. (2014) consider sustainable innovation in new marketing approaches and the new distribution dynamics to stimulate demand. In their study, applied to guesthouses, the owners understood that when they implement innovation, they are differentiating themselves from the competition through product, service, personality and image. Innovation should be considered in a permanent, global and dynamic way. On the other hand, Chiara Tagliabue et al. (2012), who address the new accommodation concepts and terminologies, with a focus on accommodation in historic areas, consider them as innovative concepts as they apply to the renovation of historic buildings. The authors suggest a new concept, the "Albergo Diffuso", which is characterised by a harmonious and sustainable relationship with the local community, reconciling economic, social, cultural and other interests. Floričić (2020) in a study applied to hospitality, proves that companies with businesses and operations supported by sustainable innovation positively influence the consumer and make the company more competitive.

The sustainable innovation applied to local cuisine by Chen et al. (2022) aimed to analyse the practices of innovation and agricultural practices through the application of the analytic hierarchy process. In the first stage, indicators were created to measure the use of local cultural heritage and the sustainable development of innovation, and later the weighting between the indicators was measured by the experts. The results show that education and training were considered as primary indicators of local cultural heritage, with the secondary indicators being sustainability and sustainable development. They concluded that education and training are central to local food heritage. This conclusion is supported by Shirazi and Hajli (2021) who addressed the impact of information and communication technologies, human capital, institutional policies and the socio-economic and environmental environment as parameters of sustainability. The results demonstrate the need to adapt policies and curricular plans, given the objectives of sustainable development and the technological capacities that each person can develop. In a similar line, Ferreras-Garcia et al. (2021) developed their study with business students, intending to identify the perception of innovation and skills of each student. The study confirmed the predisposition to acquire skills in innovation, highlighting that women have a high appetite for innovation.

Sustainable innovation in catering was addressed by Chung et al. (2021) seeking to understand the interrelationship of catering environmental policies and the psychological effects on the service function. Additionally, this study considered customer loyalty and mobile service improvement to better meet customer needs. The authors concluded that the strategies already adopted, such as coupons,

differentiated information for people with special needs and attractive menus, are innovative factors that show good results; however, there are innovation features that can be considered such as integrated GPS, the development of a specialised platform dedicated to catering companies and service design with the creation of a mobile catering van.

Companies that integrate a strategy promoting sustainability and environmental regulation are usually committed to the process of innovation and sustainable development, as referred by Xing et al. (2019) in their study. The authors concluded that the lack of environmental regulation of a company can affect the environmental and financial performance and, therefore, the development of sustainable innovation. Moreover, they consider that a company that adopts environmental regulation will have an internally positive performance, as it motivates all employees and fosters the application of new environmental measures. In healthcare tourism, Szymańska (2015) identifies a need to apply a sustainable model. Adopting a qualitative approach, the author concludes that innovation in health tourism is still complex since this type of tourism operates at different levels of innovation.

Creative industries play an important role in the implementation of sustainable innovation, as they stimulate creativity and unite the different stakeholders of a regional ecosystem, contributing to environmentally, socially and economically sustainable solutions for the whole community and companies (Gerlitz & Prause, 2021). Based on the creation of a Living Lab, Cigir (2018) proposes a study with different stakeholders. Living labs are spaces where ideas are shared and gaps, constraints and opportunities are identified. Additionally, new possibilities can be tested and reflected upon during the process. This working model applied to the different stakeholders still needs further application to assertively respond to the different objectives and interests of all stakeholders.

3.4.1.3 Innovative Leadership

A leader plays an important role in society and in a company. A sustainable entrepreneurial leader is essential in the implementation of sustainable innovation practices, as they understand and see the usefulness of sustainable innovation in the marketplace, deriving competitive advantage (Schaltegger & Wagner, 2011).

An entrepreneurial leader's profile, according to Ateljevic and Doorne (2000), is related to the motivation of these entrepreneurs and their simplistic perception of sustainable innovation and high levels of opinion, according to Smerecnik and Andersen (2011). A lifestyle entrepreneur provides facilitating tools for the introduction and implementation of innovative products in the industry, which are able to combine and articulate values, in line with the objectives of sustainability and with respect to the community and its values, while stimulating regional development by promoting the creation of market niches (Ateljevic & Doorne, 2000). For Dias and Silva (2021), the entrepreneur lifestyle is reflected at a local level, since knowledge is transmitted between generations, and when it includes innovation, it results in a combination of relational capital and innovation, which translates into

the absorption of knowledge. Another characteristic of an innovative leader is age, as stated by Triantafillidou and Tsiaras (2018), who in their study, applied in Greece, concluded that age is one of the most important factors in implementing sustainable innovation in tourism.

Regarding aforementioned simplistic perception, Smerecnik and Andersen (2011) consider it a crucial condition for the adoption of sustainable innovation, another condition being the relative advantage with the implementation and communication of environmental indexes. A leader's environmental position is intrinsically related to the adoption of sustainable innovations and innovation and to the adoption of high-performance practices.

Schaltegger and Wagner (2011) in their study based on a typology of sustainable entrepreneurship integrating social and institutional entrepreneurship concluded that to be innovative is to offer organisational and technical improvements, which can be accepted and validated by the market with high success. This type of sustainable development presupposes sustainable innovation which, as a rule, is associated with a business leader with high awareness and concern for social and environmental objectives through the implementation of innovative products and/or processes in the market. With regard to this determination to implement innovative processes or products, Ahmad and Normala (2016) address the perspective of the professionals and their perception on what they consider to be essential characteristics of an innovative leader in the events industry. It was concluded that the ability to overcome challenges and create "goodwill" is an essential characteristic, with authors identifying that innovation requires innovative skills, involving the preparation and design of events, as well as hard and soft skills.

Cai et al. (2020) add that leaders are crucial in the implementation of innovation, as they influence, stimulate and implement innovation processes in a company. This theory is also confirmed by Ek Styvén et al. (2022) who in their study on the level of perception of innovation and creativity, applied to employees in the tourism and hospitality sector, concluded that the possibility of being creative and innovative and the possibility of adding economic value are important factors for retaining human capital in companies.

The study by Ochoa-Jiménez et al. (2021) addresses the conversion of knowledge into innovative applications with a sustainable effect. The results show that knowledge management is directly and positively related to innovation and sustainability. Companies that aim at knowledge management increase their competitive advantage by increasing sustainable innovation, since knowledge is a determining factor of innovation, translating into the implementation of new products, processes or new production approaches. In turn, Xue et al. (2020) state that the project manager has the responsibility to lead the project towards sustainability through innovation. This study showed that there is a positive impact when the project manager holds soft competencies and mediates the impact of innovation in this relationship. Bressan and Pedrini (2020) corroborate the theory of the leader's position on sustainability. In their study on innovation-oriented innovation applied in micro and small enterprises, they confirmed that the position of the leader has a direct impact on the implementation of sustainable innovation. Allied to sustainable innovation

models, the role of the project manager and its impact on the management of the innovation process should be considered. The study of Xue et al. (2020) demonstrates the positive impact of the project manager's soft skills, as innovation is directly related to the sustainable development of the project.

Another study, from Mrusek et al. (2021) who studied the impact of sustainability on leadership in the innovation management of Michelin star chefs and the impacts of innovation in haute cuisine, concluded that the type of leadership is key for innovation in the latter. However, sustainability is not a concern in this restaurant segment due to customer expectations, legislation or insufficient government support. External factors, such as market demand or the involvement of a variety of stakeholders, were considered key determinants for the type of innovation, and internal factors such as leadership, business vision, consumer brand loyalty and consumer skills and involvement were considered as key factors for innovation decisions and success. In addition to the need for leadership and networking, financial availability is also required, which in many cases is the most important criterion, according to the study by Kusi-Sarpong et al. (2019) which concluded that companies still see sustainability from an environmental perspective and look at sustainable innovation from an economic perspective.

It is confirmed that entrepreneurs or investors who take a daily stance in defence of social and environmental responsibility and in the relationship between all stakeholders promote innovation oriented towards sustainability more vigorously.

3.4.1.4 Stakeholders' Relationship

The success of a sustainable destination depends on the cooperation between stakeholders (Bouchon & Rawat, 2016). In the study developed by Veronica et al. (2020), when there is stakeholder engagement, sustainable development becomes essential for all companies, and when there is sustainability-driven growth, adaptation and innovation, companies are more receptive to co-creation, sharing and reuse of environmental knowledge.

For knowledge sharing, the behaviour and attitude of the innovative employee are crucial for the overall sustainable innovation performance of an organisation, as stated by Zhang et al. (2021). In their study, focusing on human resource management and the relationship between an organisation's high-performance work system and innovative work behaviour, related to extra-organisational government support and talent policy, they show that government support for promoting talent policy positively influences innovative attitudes and perceived behavioural control. Innovative behaviour can be improved, as stated in Thongsri and Chang (2019) through three factors: market orientation, management partnerships and government support. In the study, it is found that interactions between management partnerships, customers and competitive orientation can enhance sustainable product innovation while interactions between government support and policies can enhance innovative behaviour. In their study, Aldieri and Vinci (2019) address the importance of spillovers and confirm their internal and external impact, recommending

measures that would stimulate innovative and sustainable investment, such as increasing and promoting new technologies and adapting labour market policies.

Coupled with open innovation and government support, the authors Costa and Matias (2020) argue that business success is contingent on sustainable innovation and that the public sector has an important role in empowering and collaborating towards sustainable innovation, from open innovation. According to the authors, open innovation can enhance sustainable innovation ecosystems and drive digital transition. The result of the study revealed that companies that have more technologies are prone to foster innovation, regardless of the type of innovation or sector of activity and companies that have their business directed towards the external market and exports are more predisposed to innovative strategies, except for areas related to marketing. They concluded that sustainability is strongly related to public policies.

Another dimension is community; Srisawad and Ounvichit (2016) studied a multicultural tourist community to assess the respect for the cultural diversity of young people in the community and to innovate and evaluate a learning process to raise their respect. The study showed that young people had a low level of respect for cultural diversity. Given the results of the study, they implemented the constructivist learning model as innovated, the L-CULTURA (the learn to cultivate cultures model) where youths engage in nine spiralling steps of taking up challenges.

Ciasullo et al. (2020) studied TrentoSmartCity as a smart community with a global vision for resource exploitation, with value propositions and co-creation practices, because of stakeholder engagement. They identified that key stakeholders in the ecosystem and governance can strategically manage these elements for the harmonisation of objectives at various levels to achieve social growth. In the approach to a rural community, Bouchon and Rawat (2016) aim to identify the constructive process and impact on the local community. The results showed positive community participation and involvement in tourism services, having also demonstrated that non-formal education is considered a more comprehensive strategy that could meet the needs of formal communities as it provides skills and lifelong learning that can be transported to tourism and develop global/local citizens.

As conditioning factors for the implementation of sustainable innovation in micro-enterprises and SMEs, Najda-Janoszka and Kopera (2014) identified some barriers that were explored and framed in three dimensions: organisational, environmental and innovative process specifics. The results of the study concluded that the barriers emerge or tend to be more visible in the interconnection between local tourist business stakeholders; another conclusion is that there is a skills barrier when it comes to entrepreneurs, namely, insufficient skills, competencies and low formal levels of qualification, as well as a lack of motivation to engage in innovation processes. Many variables and limitations are identified in the tourism industry, being necessary to apply a study at different levels of the industry. The application of policies should be rethought at different levels, namely, regarding the clarity needed from markets and the training that is being provided. The low level of knowledge passed formally and informally in training actions, vocational tests, internships, etc. is also highlighted, reinforcing the urgent need to educate managers and business owners, making them aware of the importance of innovation and competitiveness, in line with the high quality and qualification of human resources.

3.5 Conclusions

The SLR shows us the growth of studies on the theme of innovation, and sustainability applied to tourism, with a special focus from 2020, with the publication of 25 articles, revealing the importance of the themes for the tourism sector that is undergoing constant transformation and evolution.

Business models, sustainable innovative strategies, innovative leadership and the relationship with stakeholders were identified as the most important dimensions and the ones with the highest incidence of studies.

The SLR, which involved 50 research projects, focused on the application of sustainable innovation in tourism, demonstrating that the theme is being addressed transversally in the industry. Additionally, it was found that sustainable innovation has different perceptions, which vary according to the level of knowledge, acceptance and understanding of those involved. In turn, implementation can be applicable in the different tourism subsectors, applied at different levels and with different objectives, which extend over time.

Another conclusion is the need for innovative sustainable strategies and business models so that new processes or the introduction of innovation can materialise. However, this materialisation is only possible when there is an innovative leader, with innovative hard and soft skills, who has a cooperative relationship with other stakeholders. It is also perceived that small companies have more difficulties in the implementation of innovation; however, through co-creation, they can overcome the lack of resources (human and financial) and implement minor innovative sustainable initiatives, making them more competitive.

This SLR presents the current state of the art and aims to provide guidelines for the future, demonstrating that sustainable innovation in companies can start with a leader, a business model or with sustainable strategies and can materialise together with stakeholders.

Some limitations were found, namely, with the restricted access to some articles, which were not available for download; another limitation was the gap of publications between 2000 and 2014, in which only six papers were published, and that can be considered as a limitation in the development of the theme.

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