

The role of innovation and sustainability in tourism lodgings in Douro Region, Portugal

O papel da **inovação e sustentabilidade** em alojamentos **turísticos** na Região do Douro, Portugal

MARIA LÚCIA PATO * [mljesus@esav.ipv.pt]

MARIA MANUEL LEGUÍSSIMO ** [maria_mane_18@hotmail.com]

Abstract | Innovation and sustainability are important tools for increasing the competitive advantage of tourism lodgings and for meeting tourist needs. The purpose of this study is to analyse the practices used by tourist lodgings located in the Douro Region, in Portugal, in terms of innovation and sustainability. This work was based on a direct survey conducted with 43 tourism lodgings from this particular region. The results obtained reveal that 63% of those tourism lodgings recognized the need to innovate, while 28% of them have never implemented any innovation strategies. In terms of sustainability, most of them (86%) stated that they had already carried out various initiatives to increase their sustainability. However, 61% had not defined any sustainability plan yet, and over 77% did not even have sustainability certification. In conclusion, the outcomes of this study show that while innovation and sustainability are topics that are indeed considered by tourism lodgings when they define their business strategy, they are not their primary focus. Some of the limitations of this study involve time constraints and the dimension of the sample. Time constraint, for instance, limited the response rate and made it impossible to conduct a more qualitative study and proceed with the subsequent triangulation of findings.

Keywords | Tourism lodgings, rural, innovation, sustainability, Douro

Resumo | A inovação e a sustentabilidade representam ferramentas importantes para aumentar a vantagem competitiva dos alojamentos turísticos e satisfazer as necessidades dos turistas. O objetivo deste estudo é analisar as práticas utilizadas pelos alojamentos turísticos em termos de inovação e sustentabilidade na Região do Douro, em Portugal. Este trabalho teve por base um inquérito direto a 43 alojamentos turísticos nesta região. Os dados foram tratados com base em estatísticas exploratórias simples. Os resultados revelam que 63% dos alojamentos turísticos encontram motivos para inovar, mas 28% nunca aplicaram nenhuma inovação no mesmo. Em termos de sustentabilidade a grande maioria (86%) refere integrar algumas ações relacionadas com a sustentabilidade, embora 61% não tenha um

* CERNAS-IPV Research Centre, Polytechnic Institute of Viseu, Portugal

** Faculdade de Economia do Porto, University of Porto

plano de sustentabilidade e mais de 77% não tenha qualquer certificação de sustentabilidade. Em suma, o resultado deste estudo revela que a inovação e a sustentabilidade são temas que os alojamentos turísticos têm em consideração quando se pensa a estratégia do negócio, mas não são o foco. Este estudo apresenta algumas limitações relacionadas com constrangimentos de tempo e dimensão da amostra. Concretamente, o constrangimento temporal não nos permitiu ter uma maior taxa de resposta e impossibilitou a realização adicional de um estudo mais qualitativo seguido da triangulação dos resultados.

Palavras-chave | Alojamentos turísticos, rural, inovação, sustentabilidade, Douro

1. Introduction

Due to the crisis that has affected rural areas and led to diverse demographic, economic, and socio-cultural problems (Pato & Teixeira, 2016), rural tourism has, for several decades, served as an important tool for the development of those specific territories. Rural tourism was particularly important for areas that have always been less favoured due to their geographical location (inland territories and/or mountainous regions). On the one hand, rural tourism is embedded in and relies on the rural “backwardness” in its most positive sense: the history, the authenticity, the nostalgia, the peace and quiet, the traditions and typical foods (Hjalager et al., 2018), and the sector attracts lifestyle entrepreneurs with diverse motives who seek to build their tourist offer on such assets (Brandth & Haugen, 2014).

On the other hand, rural tourism clearly contributes to the rural modernization processes (Zhu & Chang 2021), as it fosters the desire for comfort and creative technological reinvention. For that reason, in an era marked by competition between tourist destinations and environmental and socio-economic problems, innovation and sustainability emerge as crucial tools that any rural tourist enterprise should consider (Figueras et al., 2022; Isik et al., 2022; Kastenholz et al., 2022; Roblek et al., 2021).

Innovation and sustainability play a significant role in increasing the competitive advantage of tourism units (Arcese et al., 2021; Santos, 2021)

and destinations (Azmi et al., 2023). Additionally, they are crucial instruments that will effectively enable these units to meet tourists’ expectations (Antunes et al., 2023). At the same time, enterprises that choose to innovate and follow sustainable paths will have a positive impact on the physical space where they are located, thereby contributing to the competitiveness of a tourist destination (Azmi et al., 2023; Lane et al., 2022).

This seems to be even more critical in contexts characterised by a scarcity of human and financial resources, as is often the case in rural areas (Pato & Kastenholz, 2017; Rodrigues et al., 2021). In fact, by incorporating innovative approaches and sustainable practices, tourism in rural areas can not only flourish, but also contribute to minimizing the impact of the industry on the environment and local communities. By combining innovation and sustainability in rural tourism, it is possible to create a thriving industry that benefits local communities, preserves natural and cultural heritage, and attracts responsible visitors.

Despite the importance attributed to innovation and sustainability in tourism research, empirical studies that combine these two topics, and particularly those focusing on Portuguese rural territories, remain scarce. Previous studies have highlighted the need to understand territorial dynamics (identifying connections between local stakeholders and recognising their importance) and the role played by regional markets in developing innovative activities. Therefore, drawing on a direct survey involving 43 tourism lodgings located

in the Douro Region of Portugal, this study undertook to analyse the innovation and sustainability practices and strategies they have already implemented. To achieve this objective, the following research questions were suggested:

RQ1 - Are innovation and sustainability taken into consideration by tourism lodgings from the Douro Region when they define their business strategy?

RQ2 - Which innovative and sustainable strategies and plans are currently being implemented?

This paper is organised into four sections following the introduction: section 2, which explores the significance of innovation and sustainability in rural tourism entrepreneurship, section 3, which provides an overview of the region under study and describes the methodology used in the study, and section 4, which uncovers the outcomes of the study and their discussion. Finally, section 5 presents the main conclusions and the study's theoretical and practical contributions, as well as its limitations, and identifies avenues for future research.

2. Literature review

2.1. The gradual conversion of rural areas into tourism destinations

The new report issued by the Organization for Economic Cooperation and Development (OECD) "Rural Well-being: Geography of Opportunities" OECD (2020) stresses that rural places are facing stronger demographic pressures, with many countries experiencing population decline in rural regions (...) and challenges caused by an ageing population (...) and lower labour productivity levels and employment rates. This context has given rise, in many countries and particularly in Europe and Portugal, to greater concerns, as evi-

denced by the proliferation of agendas, programmes, and various forms of support designed to foster the development of rural areas (Aubert et al., 2022; Comanescu et al., 2019; Medeiros & Valente, 2023). Tourism has been increasingly recognised, particularly in recent years, as a major driver in the development of the less favoured regions, predominantly those located inland and/or in mountainous areas (Ribeiro & Marques, 2002) and has, therefore, greatly contributed to the desired revitalization of rural regions. This significant contribution is primarily due its capability to generate employment and income, contribute to social revitalization, and create a wide range of synergies across other sectors of activity (Ribeiro & Marques, 2002; Singhania et al., 2022), such as agriculture, food, or handicraft, among others. Additionally, rural tourism can provide valuable opportunities for traditionally underprivileged groups such as women (Ashrafi & Hadi, 2019; Cruz et al., 2020; Fathizadeh et al., 2022; Rao et al., 2022; Segovia-Perez et al., 2019) and younger people, for instance (Ballinas et al., 2020; Ghaderi et al., 2022). The COVID-19 pandemic has, in turn, prompted growing interest from tourists looking for new destinations and touristic experiences that favour natural and rural areas, away from crowded places, and offer open-air activities (Benitez-Aurioles, 2022; Silva, 2022). As emphasized by the World Tourism Organization—UNWTO (UNWTO, 2020) this newfound enthusiasm, combined with the already growing interest in more genuine experiences that offer stronger involvement with local communities, their products, traditions, and way of life, as well as a sustainable approach implemented throughout all stages of the touristic demand, opens up greater opportunities for the environmental, social, and economic revitalization of rural areas through tourism.

Recently, UNWTO has given considerable attention to rural tourism, by, for example, promoting the "Year of Tourism and Rural Development" (UNWTO, 2020) and conducting the survey

on “Tourism for Rural Development” (UNWTO, 2023). However, the success of any kind of tourism project in rural areas depend on multiple factors that include suitable conditions and resources to attract visitors (Santos, 2021), innovation (Azmi et al., 2023; Qu & Zollet, 2023; Roman et al., 2020; Ramos et al., 2018; Salvado et al., 2023), and sustainability strategies (Lane et al., 2022; Li et al., 2023; Madanaguli et al., 2023; Rodrigues et al., 2021).

2.2. Innovation and tourism in rural areas

Innovation, as a factor that stimulates changes, differentiation, and/or distinctiveness, will create a superior power within the market, allowing considerable advantages for business in rural areas (Dinis, 2006; Pato, 2020). In fact, in recent years, the notion of innovation has been primarily associated with increasing competitiveness or achieving success for the entity (Sin et al., 2020).

Joseph Schumpeter (1934) was one of the first authors to conceptualize the term “innovation” (Pato & Teixeira, 2016). During the elaboration of his ‘creative destruction’ theoretical construct, originally published in 1934 in “The Theory of Economic Development”, the author defined innovation as the changes in the existing production system introduced by the entrepreneur to make profits and reduce costs (Emami Langroodi, 2017, p. 68). According to Schumpeter, when innovations or changes (whether economic, social, political, and technical) occur in the economy, the stationary equilibrium is displaced, and the process of development starts (Emami Langroodi, 2017). These innovations can take the form of: i) the discovery of new source of raw materials; ii) the presentation of a new product; iii) the implementation of a new method of production; iv) the search for new markets; v) creation of new types of industrial organization (Pato, 2020; Pato & Teixeira, 2016). Despite the introduction of new definitions

for the concept of innovation by contemporary researchers, Schumpeter’s conception remains valid and continues to influence many of the new definitions suggested for the concept.

For instance, the Oslo Manual developed jointly by the OECD and Eurostat (the international reference guide for collecting and using data on innovation) suggests four different types of innovation: product innovation (introduction of a good or service that is new or significantly improved. These improvements will have a significant impact on its functional characteristics or intended uses); marketing innovation (implementation of a new marketing method involving considerable changes in product design or packaging, product placement, product promotion or pricing); process innovation (implementation of a new or significantly improved production or delivery method), and organizational innovation (implementation of a new organizational method in business practices, workplace organisation or external relations) (OECD & Eurostat, 2005). Schumpeter’s notion of innovation has influenced diverse research endeavours conducted on this topic and his influence has extended to the field of rural tourism (e.g., Fuste-Forne & Cerdan, 2021; Shpykuliak & Sakovska, 2020; Sin et al., 2020). Brandão (2014), for instance, emphasizes the importance of product innovation, organizational/managerial innovation, and marketing innovations. However, the author also embraces additional categories in her work, namely institutional innovation (extending beyond the organisation to represent new collaborative or organisational structures, such as networks or alliances); reverse community innovation (innovations that benefit local residents), and reverse business innovation (innovations that benefit other local business).

Wang and Ding (2022) emphasize the importance of product innovation. In their work, they state that for the owners/managers of small rural B&B, one of the key resources for innovation is their tradition and heritage, as a highly idiosyncratic resource that allows them to develop in-

novations with local characteristics. More importantly, they claim that innovation using traditions and heritage can, simultaneously, achieve sustainable objectives, encompassing heritage preservation and community socio-economic development (Menicucci, 2018; Widjojo & Gunawan, 2020).

Innovation is essential to the development of any tourism company and/or destination and its impact on rural environments is also noteworthy (Fuste-Forne & Cerdan, 2021). However, studies indicate that much remains to be done in this field. Hjalager et al. (2018) identified the following five innovation gaps in Scandinavian rural tourism:

- The portfolio gap refers to insufficient coordination between the resources and the offer and the chosen trajectory in terms of diversification.
- The policy departmentalization gap occurs when supporting entities engage in old-fashioned thinking. Some examples of this outdated way of thinking include, for instance, the exclusion of touristic matters from agricultural extension services and failure to coordinate the needs of rural production and development.
- The knowledge gap occurs when firms do not consider knowledge resources and do not access wider markets and network associations to develop their activity.
- The change motivation gap occurs when tourism firms' development strategy and respective investments do not align with current trends in the tourism market. As a result, there is a discrepancy between the aspirations and needs of the tourists and the offer provided by these firms.
- The resource interpretation gap happens when tourism firms possess the necessary assets to innovate but do not fully understand their potential; for example, firms may

not capitalize on opportunities to offer new tourism experiences that were not originally planned and that might, for instance, include strategies to leverage the traditions of the destination.

According to Lee et al. (2015), cooperation networks can help small and medium sized enterprises operating in the rural tourism industry with their innovation processes, while also contributing to rural development. These networks facilitate learning and innovation processes and serve as a mechanism of legitimisation and prestige, thereby making resource management smoother.

2.3. Sustainability and tourism in rural areas

The concept of sustainable development was formally introduced in 1987 in the seminal document "Our Common Future" report issued by the United Nations (UN). In this document, sustainable development is defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UN, 1987, p. 54). In this report, the UN also stresses the economic and social requirements that underlie the concept of sustainable development. The concept of sustainability will, then, encompass three interconnected pillars: economic, social, and environmental factors or goals (Purvis et al., 2019). As expected, the concept of sustainability in tourism (and of rural tourism, for that matter) is intrinsically linked to the concept of sustainable development and despite the many conceptualizations that have emerged over the years, the three-pillar conception still prevails (see Han, 2021; Saarinen, 2006). For instance, the seminal work conducted by Lane (1994, p. 13) on rural tourism clearly advocates that rural tourism should: i) sustain the culture and character of host communities, ii) sustain landscape and habitats; iii) sustain the rural economy. Additionally,

the author also emphasizes that rural tourism must support a tourism industry which is viable in the long term.

Rural tourism can pave the way towards tourism empowerment, as it involves the local community in decision-making processes. This empowerment ensures that the community has a stake in tourism development, leading to more responsible and community-friendly initiatives (Park et al, 2023). Within this context, the power of rural tourism should also be recognized as a formidable tool to achieve the sustainable development goals (SDGs) defined by the UN and created as part of a new sustainable development agenda whose aim was to address the world's most pressing problems with respect to people, planet, prosperity, peace and partnership (UN, 2015). According to the UNWTO (2020, p. 8), harnessing the power of tourism to foster rural development will enhance the sector's contribution to achieving various Sustainable Development Goals (SDGs), namely Goals 1 (No Poverty), 5 (Gender Equality), 8 (Decent Work and Economic Growth), 10 (Reduced Inequalities), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 15 (Life on Land), and 17 (Partnerships for the Goals). It will also foster the implementation of the Global Code of Ethics for Tourism.

3. The Case Study and Methodological Procedures

3.1. The Case Study

With an area of 4032 km², the Douro Region (DR) is located in the northeastern part of mainland Portugal and includes 19 municipalities. This is a predominantly rural region (Guedes & Rebelo, 2020) characterized by multiple vineyards that represent the Demarcated Douro Region (DDR)—the world's oldest demarcated wine region (established in 1756) (Albuquerque, 2022).

This is where the famous Porto wine is produced. The region has a low population density (45,5 inh./km²), far below the country benchmark of 113,2 inh./km² in 2022 (Pordata, s.d.). In addition, more than 1/4 (28,7%) of the population is 65 years old or older (Pordata, s.d.). In 2020, the DR had the lowest Synthetic Regional Development Index among all the Portuguese regions, an indicator that reflects the combined performance in competitiveness, environmental quality, and cohesion (INE, 2022).

However, the environmental and cultural excellence of the landscape has contributed to the promotion of multiple types of tourism. Rural, cultural, and wine tourism are among the most representative. There are plenty of resources that directly contribute to the development of tourism in the Douro Region: (1) the Porto Wine and other renowned wines produced in the region, (2) the famous Douro River landscapes and their vineyards, (3) the Douro River itself as an important waterway, (3) the existence of natural and archaeological heritage sites, (4) the gastronomy, (5) the local culture, (6) the abundance of solar farms and wine-growing villages, (7) cross-selling opportunities with the city of Porto. The region also boasts several mentions/designations, one of the most important being its integration in the Alto Douro Wine Region (ADWR) (10% of the DDR) classified as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2001 for its unique landscape and cultural distinctiveness (Guedes & Rebelo, 2020).

3.2. Methodological Procedures

To analyse the innovation and sustainability practices and strategies adopted by the tourism lodgings operating in the DR, a methodological procedure consisting of four interrelated stages was used (Figure 1).

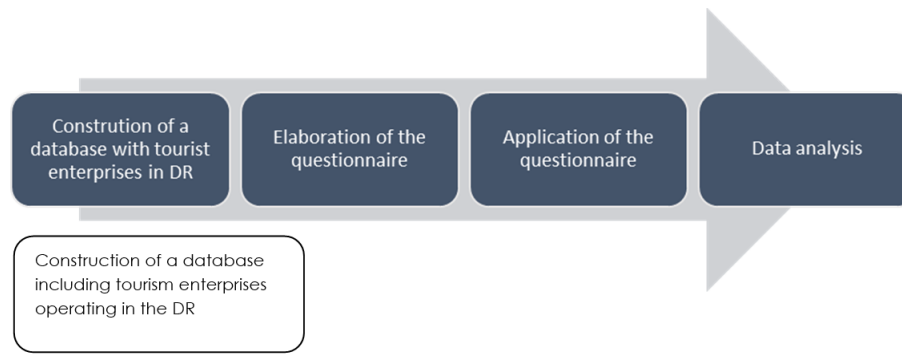


Figure 1 | Methodological procedure

The first stage involved the construction of a database comprising the tourism lodgings units operating in the DR. To achieve this objective, data was retrieved from the National Platform of Turismo de Portugal – Registo Nacional de Empreendimentos Turísticos (RNET). Two hundred and nineteen municipalities records were extracted from the database. Since it was not possible to contact all tourism lodgings and as 16 of them were part of the same group, the final sample ended up with 193 tourism lodgings units.

The second stage included the development of a questionnaire based on the literature review, with particular emphasis being placed on the works conducted by the Global Reporting Initiative (GRI, 2022), the OECD and Eurostat (2005) and Pato & Teixeira (2020). GRI is an international organization that helps organizations and business take responsibility for their actions, by providing them with a set of indicators to measure the sustainability impacts of their performance (GRI, 2022). The Oslo Manual (OECD and Eurostat, 2005) is the international reference guide for collecting and interpreting data on technological innovation adopted by enterprises.

The questionnaire included five major sections:

- i) general characteristics - to gather information about the tourism enterprise and establish a profile of sustainable and innovative enterprises (type of tourism enterprise, size, market segmentation);
- ii) entrepreneurial ecosystem - to assess whether

tourism enterprises are part of any entrepreneurial ecosystem and determine if it is a key factor influencing sustainable and innovative tourism enterprises; iii) innovation - to determine if innovation is a priority for tourism enterprises and the type of innovations that are being implemented; iv) sustainability - to assess whether sustainability is a priority for tourism enterprises and understand the type of sustainable actions that are being implemented; v) Impact measurement - to understand if tourism enterprises are concerned about measuring the impact of their actions in terms of sustainability and whether or not they have been awarded sustainability certifications.

The third stage involved the administration of the questionnaire. To identify problems related to the content of the questions, namely the misinterpretation of individual terms or concepts, and establish what needs to be eliminated or revised, the questionnaire was first tested as a pilot survey with 3 tourism lodgings. Based on the feedback gathered on the content and the overall structure of the questionnaire, several corrections were made and some questions were clarified. The next substage (from July 4th, 2022 to August 25th, 2022) involved emailing the questionnaires to all (193) the lodgings listed in the database. By the end of the collection process, 43 complete questionnaires were obtained, which represents a response rate of approximately 22%.

4. Results and Discussion

4.1. General characteristics of the sample

Most of the sample is composed by lodgings officially registered as “Turismo no Espaço Rural (TER)” units, particularly “Casas de Campo” and “Agro-turismo” units (34%). The remaining are “Turismo de Habitação” units (12%), Hotels (8%), Camping/and and/or Caravan Park (4%), Tourist Apartments (2%), and Tourism Complexes (2%).

Those tourism lodgings are located in the Viseu, Vila Real, Bragança, and Guarda districts and the highest response rates were obtained in Vila Real and Viseu (44% and 42%, respectively).

Every rural tourism company from the sample includes at least 1 lodging unit. According to RNET, 2 respondents did not provide information on this topic. The majority of the sample has between 1 to 10 lodging units. The remaining units are distributed as follows:

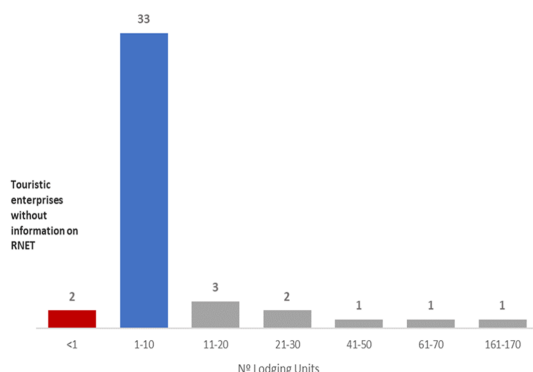


Figure 2 | Tourism lodgings for each unit

The majority of the rural tourism lodgings (25 to be more precise) are relatively new to the tourism activity, and opened to the public between 2010 and 2020. The highest number of openings was observed between 2010 and 2019. The numbers collected show that the same trend is far from being over, since seven more tourism lodgings have opened their doors in the Douro Region in the past two years (between 2020 and 2022).

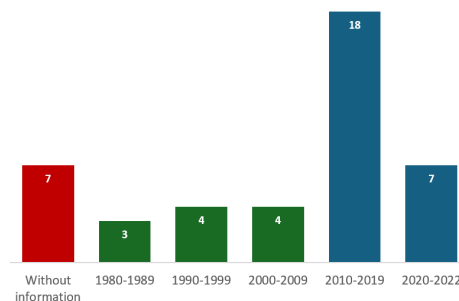


Figure 3 | Opening date of the lodging

4.2. Innovation concerns and practices

Over the past two decades, innovation in tourism firms has received increased attention (Madanaguli et al., 2022). In rural areas, the importance of innovation is further reinforced by ample evidence suggesting that it directly influences both the economic and sustainable development of those regions (Palmi & Lezzi, 2020) and stakeholders' attitudes (Madanaguli et al., 2022).

The results presented suggest that 63% of the respondents felt the need to innovate. Among this group, most of the owners/managers admitted that the innovations implemented in their lodgings had two primary aims: to adapt to the market dynamics and increase demand. Although less prominent, service improvement was another reason highlighted by the respondents (Figure 4).

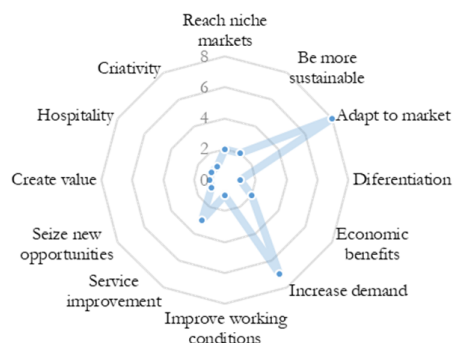


Figure 4 | Reasons to innovate

It should also be noted that the majority (72%) of the respondents admitted that they had already implemented some sort of innovation in their tourism lodging (Figure 5). Product/service innova-

tion was the most frequently implemented type of innovation, followed by marketing innovation.

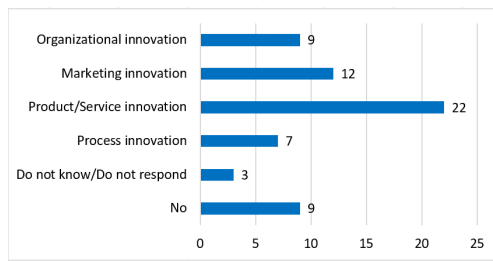


Figure 5 | Type of innovation

However, in an era where local networks are increasingly viewed as social relationship structures that enable entities to leverage territorial resources and empower company strategies (Coria et al., 2021; Coria et al., 2022), our study shows that only 21% (9) of the rural tourism lodgings reported having implemented some sort of organizational innovation.

This may, in our opinion, prove the inability of those tourism enterprises to establish partnerships/collaborations with other stakeholders/entities from the region. On the other hand, this lack of innovative vision can be attributed to the owners/managers' knowledge gap, since it appears that these firms do not have the willingness or the ability to tap into knowledge resources or access wider networks associations as a way to foster the development of their activity. Rural tourism providers must cultivate alliances with other community entities to create local and, eventually, external synergies. This assumption is clearly supported by our findings that indicate that 58% of the tourism lodgings have not established relationships with local associations (Figure 6).

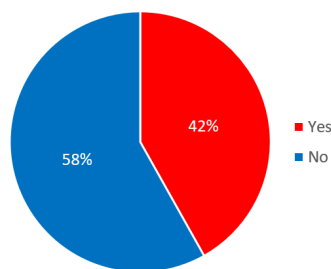


Figure 6 | Connections with local associations

Empirical research also reveals that only a small number of the tourism lodgings have applied for initiatives or programmes designed to provide support and/or motivate firms to adopt a more innovative conduct. Thirty four lodgings from our sample reported not having applied to any of the different initiatives they were offered (Figure 7).

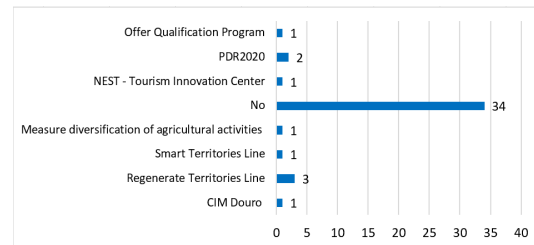


Figure 7 | Application to any program/initiative to support innovation

These findings are somehow difficult to understand, especially considering Trigo and Silva's (2022) argument that, in the case of wine tourism industry in the region, a win-win relationship between all stakeholders in the Douro region is of extreme importance.

4.3. Sustainability concerns and practices

While the role of sustainability and its importance to tourism in rural areas are widely acknowledged (Gica et al., 2021; UNWTO, 2020), Figure 8 shows that the main reasons referred by respondents for implementing a sustainable tourism strategy are merely related with operational efficiency, minimization of costs, and opportunities for growth.

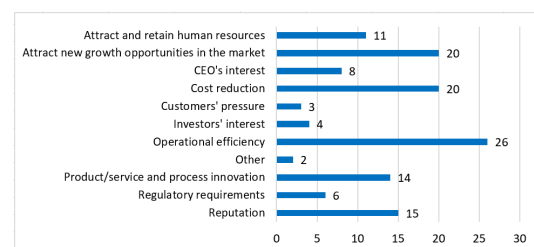


Figure 8 | Reasons to implement a sustainable business strategy

There is currently widespread agreement on the importance of being familiar with the 17 SDGs and of how significant their adoption can be for tourism enterprises (Castanho et al., 2023). The fact that almost 56% of the tourism lodgings included in our sample report having no knowledge of those 17 SDGs is clearly cause for concern (Figure 9).

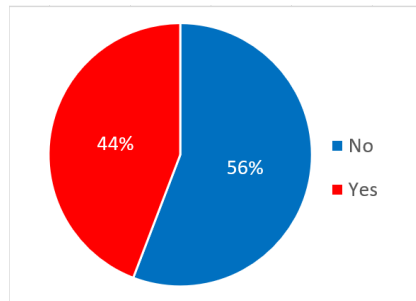


Figure 9 | Knowledge of the 17 SDGs

Nonetheless, Figure 10 illustrates that most of the tourism lodgings (86%) surveyed have already implemented some form of sustainable practice.

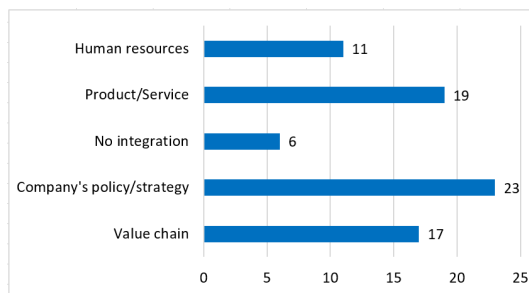


Figure 10 | Sustainable practices

When asked about the existence of sustainable certification for the unit, only a minority (24%) of the tourism lodgings responded that they did have a plan, while 77% replied that they did not have sustainability certification, neither were in the process of obtaining it (Figure 11).

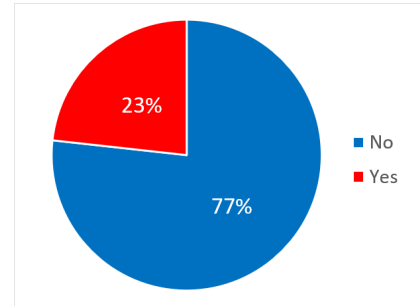


Figure 11 | Existence of a sustainability certification

The green key certificate clearly emerges as the most popular (Figure 12) form of certification among tourism lodgings that have already possess sustainability certification.

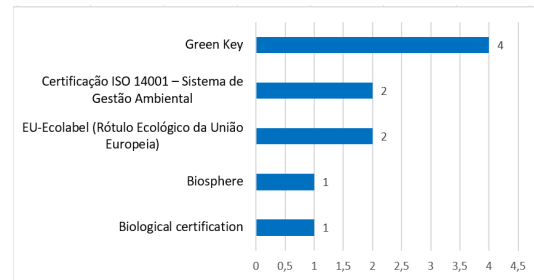


Figure 12 | Type of tourism lodgings certifications

Since the green Key certificate is typically associated with environmentally friendly practices, such as energy efficiency, waste management, and water conservation, it seems that the environmental dimension is highly valued among the Douro region lodging units. The results do not permit the conduction of a more rigorous analysis (given the low number of responses), however it seems that the opportunity to affirm the region as a fine example of socio-cultural and economically sustainable tourism is being wasted. It should be noted that the power of sustainability in rural tourism lies in its ability to create a harmonious balance between economic development, cultural preservation, and environmental conservation. By adopting sustainable practices, tourism can be a positive force that benefits both the local community and the environment, ensuring a more resilient and enduring tourism industry.

5. Conclusions, implications and avenues for future research

Drawing on an exploratory analysis involving 43 tourism lodgings from the Douro Region, this paper presents some important considerations on the role of innovation and sustainability in tourism lodgings operating in the region. Firstly, it confirms that a great percentage of tourism lodgings are aware of the importance of innovation and sustainability. They recognize that both innovation and sustainability are crucial for them to adapt to the market dynamics, increase demand (through the implementation of innovation strategies), and achieve operational efficiency, cost reduction, and growth opportunities (through sustainability practices). Therefore, evidence suggests that innovation and sustainability hold great significance to tourism lodgings' owner or managers when they design their development strategy (RQ1), particularly due to their influence on meeting market needs. This is coherent with the works of Pikemaat et al. (2019) and Madanaguli et al. (2023), which highlight the importance of innovation and sustainability in tourism and rural tourism.

Then, findings reveal that product and marketing innovation are the most valued dimensions by the lodgings' owners. Sustainability, in turn, emerges as a crucial dimension in the lodgings' policy and in the definition of product/services offered to the market (RQ2). These outcomes also suggest that the establishment of collaborative networks with other stakeholders aimed at increasing the success and competitiveness of lodgings, a strategy that was highlighted by Coria et al. (2021, 2022), is seriously undervalued by the respondents. This behaviour is in clear contrast to the strategies advocated by Hjalager et al., 2018, who consider that actors, including firms and others, who choose to accelerate innovative initiatives and investments and have a sustainable conduct might ideally increase their profits and develop their enterprise portfolios.

In conclusion, the results of this study demonstrate that while innovation and sustainability are topics that tourism lodgings' managers take into account when they define their business strategy, these topics are not their primary focus. Most tourism lodgings lack a sustainable plan and have consistently failed to come up with a sustainability report that would help them measure the impact of their actions. The fact that they are newly-formed companies and the typology of these companies (most of them are tourism companies operating in rural areas often facing limited financial support and scarce resources) can account for this sort of management strategies. Bearing all this in mind, it could be argued that there is still a long way to go until the Douro Region can be established as an innovative and sustainable tourism region.

The data presented in this paper draws the public's attention to the existing gap between rhetoric and practice in terms of the incorporation of innovative and sustainable measures in tourism companies. In other words, this study intends to make a valuable contribution to addressing questions related to the importance of innovation and sustainability strategies and their implementation in the tourism lodgings units. The outcomes demonstrate that in this particular region (and maybe in other regions with similar characteristics) innovation and sustainability are not sufficiently significant to have a clear impact on the success and competitiveness of both the touristic lodging activity and the region. To improve their success as an innovative and sustainable territory, tourism lodging managers should devote greater attention to these issues and be more aware of the potential benefits they can provide. This can be achieved by making effective education for sustainability widely available, thereby making a major contribution to promoting the respect for the local cultural and economic context (Chen et al., 2022). At the same time, the development and implementation of various strategies to encourage entrepreneurship and improve people's innovative spirit are increasingly

important (McElwee et al., 2018). In this context, the advancement of rural tourism will require continuous and critical monitoring to guarantee the functionality and effectiveness of the institutions that serve as intermediaries or promoters.

Time constraints posed a clear limitation on this study and had a negative impact on the sample size. The field work was conducted as part of a master's thesis at the University of Porto and strict deadlines had to be met. Consequently, the survey was only available online for approximately 8 weeks and during the summer, a period of intensive work for tourism lodgings. For that reason, only a small percentage of responses was obtained. This limited sample size only permitted the conduction of a descriptive study and denied us the chance to conduct any other type of data analysis or interpretation. On the other hand, those time constraints made it impractical to conduct a more qualitative study and subsequent triangulation of findings.

Still, we recognize the relevance of a systematic qualitative study that is capable of providing a deeper understanding of the way tourism promoters think and act, of their motivations, aspirations, attitudes, and behaviours (Pato & Kastenholz, 2017). This study offers valuable insights that would definitely contribute to a clear definition of innovation and sustainability strategies, as well as promote their integration into the broader community.

A possible avenue for future research could involve complementing the data gathered in this study with a more qualitative study specifically focusing on the innovation and sustainability strategies adopted by the tourism lodgings from the region. Another avenue for research could involve the observation and assessment of the aspects that tourists value the most in terms of innovation and sustainability.

Acknowledgment

This work is funded by National Funds through the FCT - Foundation for Science and Technology, I.P., within the scope of the project Ref^a UIDB/00681/2020. Furthermore we would like to thank the CERNAS Research Centre and the Polytechnic Institute of Viseu for their support.

References

- Albuquerque, A. S. (2022). Douro demarcated region's institutions: a contribution to its study. *Revista Jurídica Portucalense*, (32), 11-26. [https://doi.org/10.34625/issn.2183-2705\(32\)2022.ic-01](https://doi.org/10.34625/issn.2183-2705(32)2022.ic-01)
- Antunes, M., Dias, A., Goncalves, F., Sousa, B., & Pereira, L. (2023). Measuring Sustainable Tourism Lifestyle Entrepreneurship Orientation to Improve Tourist Experience. *Sustainability*, 15(2). <https://doi.org/10.3390/su15021201>
- Arcese, G., Valeri, M., Poponi, S., & Elmo, G. C. (2021). Innovative drivers for family business models in tourism. *Journal of Family Business Management*, 11(4), 402-422. <https://doi.org/10.1108/JFBM-05-2020-0043>
- Ashrafi, A., & Hadi, F. (2019). The Impact of Tourism On Developing Shiraz Rural Women Entrepreneurship. *Revista Universidad Y Sociedad*, 11(4), 72-76.
- Aubert, F., Frere, Q., Lepicier, D., & Vedrine, L. (2022). Decentralization and rural development policies effectiveness: a quasi-experimental evaluation of the LEADER programme. *Regional Studies*. <https://doi.org/10.1080/00343404.2022.2129606>
- Azmi, E., Rose, R. A. C., Awang, A., & Abas, A. (2023). Innovative and Competitive: A Systematic Literature Review on New Tourism Destinations and Products for Tourism Supply. *Sustainability*, 15(2). <https://doi.org/10.3390/su15021187>
- Ballinas, D. A. R., Farrera, R. A. M., Munoz, D. E. R., & Seijas, M. Y. C. (2020). Labor exclusion and insertion practices in productive rural tourism activities in two cross-border communities in Mexico and Guatemala. *Pe-ríplo Sustentable*, (39), 322-358.
- Benitez-Aurioles, B. (2022). Territorial Impact of COVID-19 on Tourism. An Opportunity for Rural Development in Spain. *Ager-Revista De Estudios Sobre Despoblacion Y Desarrollo Rural*, (35), 99-130. <https://doi.org/10.4422/ager.2022.12>

- Brandão, A. F. (2014). *Innovation in tourism: the role of regional innovation systems* (PhD thesis), University of Aveiro. <http://doi.org/10.13140/RG.2.1.3719.4409>
- Brandth, B., & Haugen, M. S. (2014). Embodying the rural idyll in farm tourist hosting. *Scandinavian Journal of Hospitality and Tourism*, 14(2), 101-115. <https://doi.org/10.1080/15022250.2014.899136>
- Castanho, R. A., Couto, G., & Santos, C. (2023). Tourism promoting sustainable regional development: focusing on rural and creative tourism in low-density and remote regions. *Revista De Estudios Andaluces*, (45), 190-206. <https://doi.org/10.12795/rea.2023.i45.10>
- Chen, F. H., Tsai, C. C., Chung, P. Y., & Lo, W. S. (2022). Sustainability Learning in Education for Sustainable Development for 2030: An Observational Study Regarding Environmental Psychology and Responsible Behavior through Rural Community Travel. *Sustainability*, 14(5). <https://doi.org/10.3390/su14052779>
- Comanescu, I. S., Foris, D., & Foris, T. (2019, May 09-10). Dimensions of the Funding Programmes For Sustainable Rural Development In Romania. Paper presented at the *International Scientific Conference on Economic Science for Rural Development (ESRD)*, Jelgava, Latvia. <https://doi.org/10.22616/ESRD.2019.005>
- Coria, E. C., Castro, J. A. V., & Juarez, A. B. (2021). Local Networks For Cooperation In Tourism: Advantages For Tourism Enterprises. *Turismo-Estudos E Praticas*, 10(1).
- Coria, E. C., Martinez, E. O., & Michel, J. P. I. (2022). The integration of tourism entrepreneurs into inter-firm cooperation networks in rural environments: A relational analysis. *Investigaciones Turisticas*, (23), 73-93. <https://doi.org/10.14198/inturi2022.23.4>
- Cruz, M. G., Devesa, M. J. S., & Quinones, P. G. (2020). The entrepreneurial woman in rural tourism: peculiarities of the Costa Rican case through the literature review. *Cuadernos De Turismo*, (46), 185-214. <https://doi.org/10.6018/turismo.451691>
- Dinis, A. (2006). Marketing and innovation: Useful tools for competitiveness in rural and peripheral areas. *European Planning Studies*, 14(1), 9-22. <https://doi.org/10.1080/09654310500339083>
- Emami Langroodi, F. E. (2017). SchumpeterRS Theory of Economic Development: A Study of the Creative Destruction and Entrepreneurship Effects on the Economic Growth. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3153744>
- Fathizadeh, F., Azizpour, F., Sharghi, N. S., & Mair, H. L. (2022). Boolean Analysis of Factors Affecting Women's Participation in Rural Tourism. *Sustainability*, 14(9). <https://doi.org/10.3390/su14095305>
- Figueras, C. N., Prados, F. J. C., & Sayago, P. E. (2022). 30 years of LEADER in Andalusia, Southern Spain. Diversification, rural tourism and smart growth. *Investigaciones Geograficas-Spain*, 78, 239-258. <https://doi.org/10.14198/ingeo.21118>
- Fuste-Forne, F., & Cerdan, L. M. I. (2021). A land of cheese: from food innovation to tourism development in rural Catalonia. *Journal of Tourism and Cultural Change*, 19(2), 166-183. <https://doi.org/10.1080/14766825.2020.1797757>
- Ghaderi, Z., Shahabi, E., Fennell, D., & Khoshkam, M. (2022). Increasing community environmental awareness, participation in conservation, and livelihood enhancement through tourism. *Local Environment*, 27(5), 605-621. <https://doi.org/10.1080/13549839.2022.2048812>
- Gica, O. A., Coros, M. M., Moisescu, O. I., & Yallop, A. C. (2021). Transformative rural tourism strategies as tools for sustainable development in Transylvania, Romania: a case study of Sanraiu. *Worldwide Hospitality and Tourism Themes*, 13(1), 124-138. <https://doi.org/10.1108/whatt-08-2020-0088>
- Guedes, A., & Rebelo, J. (2020). Winescape's Aesthetic Impact on Lodging Room Prices: A Spatial Analysis of the Douro Region. *Tourism Planning & Development*, 17(2), 187-206. <https://doi.org/10.1080/21568316.2019.1597761>
- GRI (2022). Global Reporting. Available on <https://www.globalreporting.org/>
- Han, H. (2021). Consumer behavior and environmental sustainability in tourism and hospitality: a review of theories, concepts, and latest research. *Journal of Sustainable Tourism*, 29(7), 1021-1042. <https://doi.org/10.1080/09669582.2021.1903019>
- Hjalager, A.M., Kwiatkowski, G. & Larsen, M. Ø. (2018) Innovation gaps in Scandinavian rural tourism. *Scandinavian Journal of Hospitality and Tourism*, 18(1) 1-17, <https://doi.org/10.1080/15022250.2017.1287002>
- INE. (2022). Índice Sintético de Desenvolvimento Regional. Retrieved from https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=540871364&DESTAQUESmodo=2&xlang=pt

- Isik, C., Aydin, E., Dogru, T., Rehman, A., Sirakaya-Turk, E., & Karagoz, D. (2022). Innovation Research in Tourism and Hospitality Field: A Bibliometric and Visualization Analysis. *Sustainability*, 14(13). <https://doi.org/10.3390/su14137889>
- Kastenholz, E., Cunha, D., Cunha, C., Barroco, C., Pereira, A., Carneiro, M. J., & Lane, B. (2022). COVID-19, Wine Routes, Crisis Management and Resilience Amongst Rural Wine Tourism Businesses. *Advances in Hospitality and Tourism Research-Ahtr*, 10(1), 1-26. <https://doi.org/10.30519/ahtr.929800>
- Lane, B. (1994). Sustainable rural tourism strategies: A tool for development and conservation. *Journal of Sustainable Tourism*, 2(1-2), 102-111. <https://doi.org/10.1080/09669589409510687>
- Lane, B., Kastenholz, E., & Carneiro, M. J. (2022). Rural Tourism and Sustainability: A Special Issue, Review and Update for the Opening Years of the Twenty-First Century. *Sustainability*, 14(10). <https://doi.org/10.3390/su14106070>
- Lee, A. H. J., Wall, G., & Kovacs, J. F. (2015). Creative food clusters and rural development through place branding: Culinary tourism initiatives in Stratford and Muskoka, Ontario, Canada. *Journal of Rural Studies*, 39, 133-144. <https://doi.org/10.1016/j.jrurstud.2015.05.001>
- Madanaguli, A., Dhir, A., Joseph, R. P., Albishri, N. A., & Srivastava, S. (2023). Environmental sustainability practices and strategies in the rural tourism and hospitality sector: a systematic literature review and suggestions for future research. *Scandinavian Journal of Hospitality and Tourism*, 23(1), 1-28. <https://doi.org/10.1080/15022250.2023.2174179>
- Madanaguli, A., Kaur, P., Mazzoleni, A., & Dhir, A. (2022). The innovation ecosystem in rural tourism and hospitality - a systematic review of innovation in rural tourism. *Journal of Knowledge Management*, 26(7), 1732-1762. <https://doi.org/10.1108/jkm-01-2021-0050>
- McElwee, G., Smith, R., & Somerville, P. (2018). Conceptualising animation in rural communities: the Village SOS case. *Entrepreneurship & Regional Development*, 30(1-2), 173-198. <https://doi.org/10.1080/08985626.2017.1401122>
- Medeiros, E., & Valente, B. (2023). Assessing impacts of public policies towards environmental sustainability in an EU region: North of Portugal. *European Planning Studies*. <https://doi.org/10.1080/09654313.2023.2169068>
- Menicucci, E. (2018). The influence of firm characteristics on profitability: evidence from Italian hospitality industry. *International Journal of Contemporary Hospitality Management*, 30(8), 2845-2868. <https://doi.org/10.1108/IJCHM-04-2017-0219>
- OECD. (2020). *Rural Well-being Geography of Opportunities*. Paris: OECD. <https://doi.org/10.1787/d25cef80-en>
- OECD, & Eurostat. (2005). *OSLO Manual Guidelines for collecting and interpreting innovation data*. Paris: OECD.
- Park, J., Zou, S., & Soulard, J. (2023). Transforming rural communities through tourism development: an examination of empowerment and disempowerment processes. *Journal of Sustainable Tourism*, 1-21. <https://doi.org/10.1080/09669582.2023.2178446>
- Palmi, P., & Lezzi, G. E. (2020). How Authenticity and Tradition Shift into Sustainability and Innovation: Evidence from Italian Agritourism. *International Journal of Environmental Research and Public Health*, 17(15). <https://doi.org/10.3390/ijerph17155389>
- Pato, M. L. (2020). Entrepreneurship and Innovation Towards Rural Development Evidence from a Peripheral Area in Portugal. *European Countryside*, 12(2), 209-220. <https://doi.org/10.2478/euco-2020-0012>
- Pato, M. L., & Kastenholz, E. (2017). Marketing of rural tourism – a study based on rural tourism lodgings in Portugal. *Journal of Place Management and Development*, 10(2), 121-139. <https://doi.org/10.1108/JPM-06-2016-0037>
- Pato, M. L., & Teixeira, A. A. C. (2016). Twenty Years of Rural Entrepreneurship: A Bibliometric Survey. *Sociologia Ruralis*, 56(1), 3-28. <https://doi.org/10.1111/soru.12058>
- Pikkemaat, B., Peters, M., & Bichler, B. F. (2019). Innovation research in tourism: Research streams and actions for the future. *Journal of Hospitality and Tourism Management*, 41, 184-196. <https://doi.org/10.1016/j.jhtm.2019.10.007>
- Pordata. (s.d.). Pordata Estatísticas sobre Portugal e Europa. Retrieved from <https://www.pordata.pt/Municipios/Densidade+populacional-452>
- Purvis, B., Mao, Y., & Robinson, D. (2019). Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*, 14(3), 681-695. <https://doi.org/10.1007/s11625-018-0627-5>

- Ramos, D., Costa, C., & Teles, F. (2018). Fatores de competitividade das áreas rurais adjacentes às zonas costeiras. *Revista Turismo & Desenvolvimento*, (30), 9-21. <https://doi.org/10.34624/rtd.v0i30.1732>
- Rao, Y., Xie, J., & Lin, X. Q. (2022). The Improvement of Women's Entrepreneurial Competence in Rural Tourism: An Action Learning Perspective. *Journal of Hospitality & Tourism Research*, 46(8), 1622-1651. <https://doi.org/10.1177/10963480211031032>
- Ribeiro, M., & Marques, C. (2002). Rural tourism and the development of less favoured areas—between rhetoric and practice. *International Journal of Tourism Research*, 4(3), 211-220. <https://doi.org/10.1002/jtr.377>
- Roblek, V., Drpic, D., Mesko, M., & Milojica, V. (2021). Evolution of Sustainable Tourism Concepts. *Sustainability*, 13(22). <https://doi.org/10.3390/su132212829>
- Rodrigues, C., Liberato, D., & Melo, C. (2021). Tourism Sustainable Practices in Rural Territories: The case of Caretos de Podence. *Revista Turismo & Desenvolvimento*, 36(1), 205-220. <https://doi.org/10.34624/rtd.v1i36.23736>
- Saarinen, J. (2006). Traditions of sustainability in tourism studies. *Annals of Tourism Research*, 33(4), 1121-1140. <https://doi.org/10.1016/j.annals.2006.06.007>
- Salvado, J., Kastenholz, E., Cunha, D., & Cunha, C. (2023). The stakeholder-entrepreneur value creation pyramid in wine tourism: Taking supplier collaboration to the next level. *Revista Turismo & Desenvolvimento*, 43, 181-199. <https://doi.org/10.34624/rtd.v43i0.33013>
- Santos, R. (2021). Return Migration and Rural Tourism Development in Portugal. *Tourism Planning & Development*, 1-24. <https://doi.org/10.1080/21568316.2021.1953121>
- Segovia-Perez, M., Santero, R., Figueroa-Domecq, C., & Castro, B. (2019). The gender wage gap in Spanish rural tourism: a comparison with urban tourism. *Ager-Revista De Estudios Sobre Despoblacion Y Desarrollo Rural*, (26), 7-34. <https://doi.org/10.4422/ager.2018.18>
- Shpykuliak, O., & Sakovska, O. (2020). Agricultural cooperation as an innovation for rural development. *Baltic Journal of Economic Studies*, 6(3), 183-189. <https://doi.org/10.30525/2256-0742/2020-6-3-183-189>
- Silva, L. (2022). The impact of the COVID-19 pandemic on rural tourism: a case study from Portugal. *Anatolia-International Journal of Tourism and Hospitality Research*, 33(1), 157-159. <https://doi.org/10.1080/13032917.2021.1875015>
- Sin, A., Nowak, C., Bogusz, M., Kowalska, M., & Janigova, E. (2020). Innovations in rural tourism in Poland and Romania. *Ekonomika Poljoprivreda-Economics of Agriculture*, 67(2), 623-633. <https://doi.org/10.5937/ekoPolj2002623S>
- Singhania, O., Swain, S. K., & George, B. (2022). Interdependence and complementarity between rural development and rural tourism: a bibliometric analysis. *Rural Society*, 31(1), 15-32. <https://doi.org/10.1080/10371656.2022.2062198>
- Trigo, A., & Silva, P. (2022). Sustainable Development Directions for Wine Tourism in Douro Wine Region, Portugal. *Sustainability*, 14(7). <https://doi.org/10.3390/su14073949>
- UN. (1987). *Our common future: Report of the World Commission on Environment and Development*. New York: United Nations.
- UNWTO. (2020). *UNWTO Recommendations on Tourism and Rural Development – A Guide to Making Tourism an Effective Tool for Rural Development*. Madrid: UNWTO. <https://doi.org/10.18111/9789284422173>
- Wang, W., Ding, L., Chan, J. H., & Qi, X. (2022). Process framework for innovation through tradition and its antecedents in rural heritage B&B. *International Journal of Contemporary Hospitality Management*, 34(12), 4329-4354. <https://doi.org/10.1108/ijchm-08-2021-0990>
- Widjojo, H. & Gunawan, S. (2020). Indigenous tradition: an overlooked encompassing-factor in social entrepreneurship. *Journal of Social Entrepreneurship*, 11(1), 88-110. <https://doi.org/10.1080/19420676.2019.1579752>
- Zhu, W. Fengbiao Shang, F. (2021). Rural smart tourism under the background of internet plus. *Ecological Informatics*, 65, 101424. <https://doi.org/10.1016/j.ecoinf.2021.101424>