

ANALYSIS OF THE RELATIONSHIP BETWEEN TOURISM AND THE CIRCULAR ECONOMY: A CRITICAL REVIEW OF THE LITERATURE

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Abstract

Considering the importance that circular economy models have in today's society and the concerns that both decision-makers and other interested parties have regarding this concept, in this paper we have proposed to analyze the relationship between the economy circular and tourism, starting from the fact that this is one of the sectors of activity that is characterized both by a high consumption of water, energy and natural resources, as well as by a large food waste, being also a producer of important CO₂ emissions, as a result of the link it has with road, air, maritime transport, and not only that. The research methodology assumed the review of the specialized literature, being inventoried scientific papers indexed Web of Science, and starting from 2 keywords: "circular economy" and "tourism". From the 340 identified scientific works, following the application of several filters regarding language, title, keywords, 33 publications resulted. By applying a restriction regarding the relevance of these works, assessed on the basis of a minimum number of 3 citations, it was possible to establish a sample of 15 publications that were analyzed, identifying both the results presented by the author/authors, as well as the conclusions and the way in which that they could influence the application of circular economy principles in tourism. The analysis carried out showed us that the number of specialized papers in this field is relatively small, which is why, in order to obtain the most conclusive results regarding the proposed theme, we believe that, considering the importance of the theme, it will be necessary to continue the research on tourism and the circular economy. In this way, it will be possible to identify the solutions that will accelerate the sustainable development of tourism., which could thus meet both the leisure needs of tourists who, in turn, are increasingly concerned with the issue of sustainability, as well as the need to protect the environment, so that we allow future generations to enjoy what the new Planet offers us.

Key words: circular economy, tourism, development, sustainability, business model

INTRODUCTION

The term circular economy is not a new one, but it has started to be used more and more often both among specialists and among the general public, with the increase of concerns related to environmental protection and consumption reduction, so that it is not compromises the ability of future generations to meet their own needs [23]. The concept of "circular economy" has been used since 1928 by Leontief in his work "The Economy as a circular flow" and then resumed by Von Bertalanffi in 1937 [12, 26]. Stahel and Reday describe a concept of closing the loop in the economy [22], and in 1980 Pearce and Turner show that the term "circular economy" was used in 1980 describing a closed system through which the interactions between the economy and the environment were ensured

[18]. Since the 1990s, the term has been increasingly used. In 1996 Lyle defines the circular economy as "regenerative design" [13]. The Ellen MacArthur Foundation played an important role in the development and promotion of this concept, by advocating and advocating for the need to move to a circular economy, defined as an economy that "aims to redefine growth, focusing on benefits at the level of the entire society and which involves the gradual decoupling of economic activity from consumption of finite resources and the elimination of waste from the system" [5]. Other definitions consider it as a model of economic development based on the ecological circulation of natural materials [7] as a result of the fact that natural resources are limited and that the environment does not have an infinite capacity to absorb waste [2].

The circular economy also means improving eco-efficiency and adopting a 4R approach (R1-reduction, R2-reuse, R3-recycling and R4-recovery) [8] which can be applied both at the micro level (consumers, companies) and at mezzo (industrial parks) or macro (cities, regions, countries, continent) level [11].

Currently, the model has been extended to 10R (R1 - refuse, R2 - rethink, R3 - reduce, R4 - reuse, R5 - repair, R6 - restore, R7 - remanufacture, R8 - reorient, R9 - recycle and R10 – recovery), which applies to business models [17].

The circular economy thus represents an alternative solution to the linear economy which was developed during the economic boom stage and which was based on consumption with a mentality of the type exploitation - manufacture - consumption - disposal, which led both to the depletion of resources and to the appearance of waste that could no longer be controlled. Therefore, the circular economy promotes the principles of reducing or even eliminating waste, reducing pollution, keeping products and materials in use as long as possible, but also regenerating natural systems. It is an economy adapted to the modern consumer, due to the fact that it is more sustainable, that it pays more attention to environmental pollution, that it tries to contribute to the reduction of climate change, which is due to the concerns of the new generations regarding the future of the planet and the future of the generations to come [16]. Concerns related to the circular economy model exist both worldwide and at the level of the European Union. Thus, in March 2020, the European Commission presented an action plan through which it aims at both a sustainable design of products, as well as the reduction of waste and educating citizens and granting new rights in the field of circularity, emphasizing those sectors that have an intense consumption of resources (electronics, textiles, plastics, constructions).

In February 2021, a resolution was adopted that seeks to ensure a neutral economy, without carbon emissions and substances with a harmful effect on human health and the environment, and which calls for the adoption

of additional measures that will have the effect of achieving a completely circular economy by 2050. The objective can be achieved under the conditions of the adoption of much stricter rules related to recycling or the consumption of raw materials until 2030.

In March 2022, the European Commission continued measures to accelerate the transition to the circular economy, consisting of promoting sustainable products, but also encouraging consumers to take the step towards the transition to a green economy, to the revision of some regulations regarding construction materials and durable textile materials.

In November 2022, new measures related to packaging were applied and aimed both at improving their design (clear labeling to promote reuse and recycling), but also at the use for their manufacture of plastic materials that have a biological origin, either biodegradable or compostable.

MATERIALS AND METHODS

The research methodology involved a review of scientific papers, articles, studies and research on the relationship between tourism and the circular economy.

The approach started from consulting the existing specialized literature in the Web of Science database.

The database was queried in March 2023. The first word searched was "circular economy", and the second "tourism", the search was carried out in the title, summary, keywords and content.

Only works published in English were analyzed, and the analyzed period was 2005-2023. 340 works resulted, of which only those representing articles, proceeding papers and review articles were selected. The following filtering was done starting from the keywords found in the title, but also in relation to the number of citations (greater than 3). Among the 33 articles that met the first two criteria, a number of 15 articles were selected that were analyzed both from the point of view of the terms, the content, but also in relation to the

results obtained and the conclusions formulated.

RESULTS AND DISCUSSIONS

The analysis was carried out starting from 2 keywords "circular economy" and "tourism", resulting in a number of 340 publications written in English and published in the period 2005-2023. Of these, 319 were articles,

proceeding papers or review articles. From all of them, we followed only those Web of Science categories with more than 10 scientific researches, resulting in that most articles (129) were published in Environmental Science, in Green Sustainable Science (101), in Environmental Studies (90) and in Hospitality Leisure Expert Tourism (44) (Figure 1).

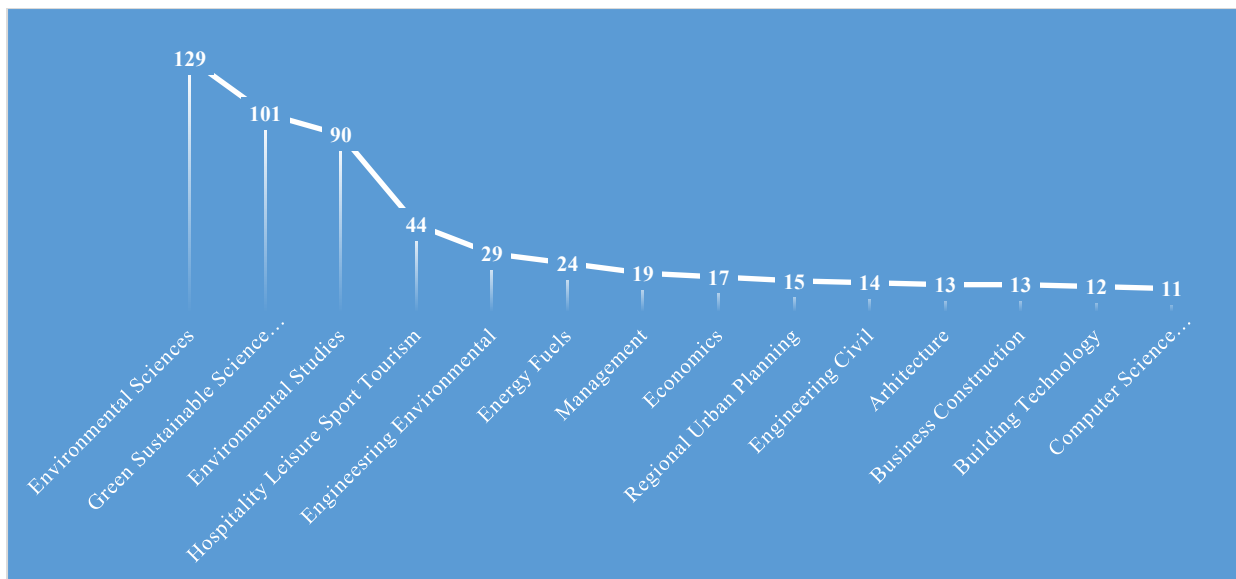


Fig. 1. Number of publications, by Web of Science categories
 Source: own processing based on [29].

The number of publications, related to the country of origin, highlights the fact that most of the research that followed the relationship between the circular economy and tourism was carried out in China (58 publications), Spain (43 publications), Italy (31 publications), Portugal (27 publications), Germany and Romania (20 publications) (fig. 2).

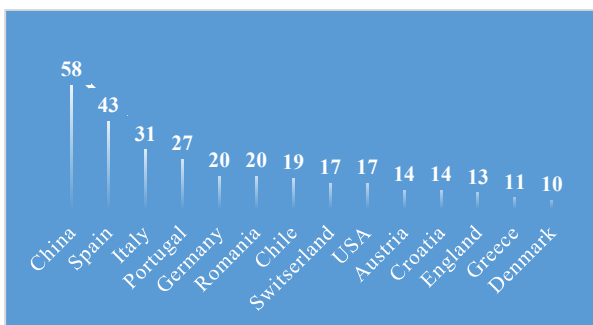


Fig. 2. The number of publications, in relation to the country
 Source: own processing based on [29].

The analysis carried out in the Publishers report highlights the fact that MDPI (89 publications), Elsevier (55 publications), Emerald Group Publishing (26 publications) and Iop Publishing Ltd (22 publications) are in first place in terms of authors' preference. This is due to the rapid process of reviewing and publishing articles, which makes the information useful and current.

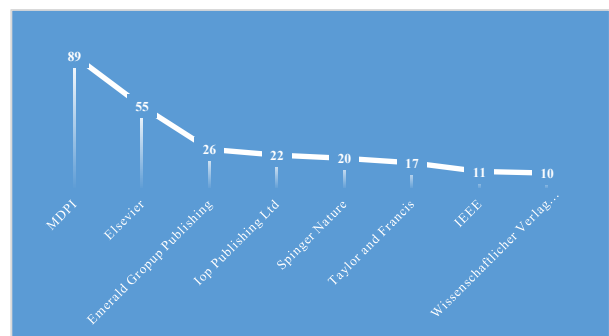


Fig. 3. The number of publications, in relation to Publishers
 Source: own processing based on [29].

The review of specialized literature specific to the circular economy and tourism was carried out in March 2023 and provided a number of 33 publications, of which for establishing the sample it was set as a condition that they have

a number greater than 3 citations. This resulted in a sample consisting of 15 publications that were analyzed according to content and results obtained (Table 1).

Table 1. Research results regarding the circular economy and tourism

Author	Result	Conclusion	No. citations
Scheepens, A. E. et al. (2017)	It presents an example of the analysis, design and implementation of a sustainable business model in tourism, using a three-dimensional approach (costs, ecological costs, market value - EVR) that validates the methods based on the creation of eco-efficient value and the transition framework circular [21].	The EVR model showed that the diversification of aquatic recreation, although it had a positive economic effect, is unsustainable for the environment	191
Falcone, P.M. (2019)	Starting from a SWOT analysis, the paper inventories the ways of applying the principles related to the circular economy in the area of Apulia, Italy. The purpose of the research was to integrate and combine the waste management method with the obtaining of renewable energy and bioproducts in tourism [6].	The case study identifies the weak points (lack of infrastructure, technology, bureaucracy, etc.) and threats (lack of a coherent policy in the field, social acceptability, etc.) that can endanger the transition to greater sustainability. in the researched area. The conclusions can be the basis for the design of circular economy policies based on tourism.	37
Jones, P. et al. (2019)	Based on the analysis of some scientific papers, the research had two parts. The first allowed the identification of several definitions related to the circular economy, and the second consisted in the presentation of circular economy models applied by companies active in the field of tourism and hospitality. The goal was to multiply successful models. [9].	The work establishes relationships between the concepts of circular economy and natural capital with the aim of finding resilient solutions for the development of the tourism and hospitality industry.	35
Rodriguez, C. et al. (2020)	One of the objectives of the research was to identify the gaps in the specialized literature related to the concept of circular economy. Another objective was to find business models that ensure the synergy between tourism, social inclusion and local development, in the conditions that all these elements can contribute to the development of sustainable tourism [20].	The tourism industry has an important role in the global economy, and that is why more research is needed to contribute to the identification of solutions for the relaunch and promotion of a sustainable tourism.	23
Vargas-Sanchez, A. (2018)	Based on the analysis of specialized literature, the paper identifies the definitions of the circular economy and the barriers that prevent the application of circularity principles in tourism and hospitality [24].	The research demonstrates the need to integrate the principles of the circular economy into the development strategies of SMEs that need funds to support innovation with the purpose of business development. This can be achieved through the development	21

		of partnerships, through the allocation of funds and legislative implementation to contribute to the development of sustainable tourism.	
Camillieri, M.A. (2021)	The paper presents case studies on the way in which catering companies, but also restaurants and cafes located in different urban tourist destinations can take responsible measures to prevent food waste and use recycling practices to contribute on the one hand to reducing food losses and reducing the amount of waste, but also obtaining economic advantages (increasing business profitability, reducing prices for consumers, etc.) [1].	The work identifies solutions to reduce food waste in tourism and hospitality businesses, but also the ways to involve decision-makers, company management, trade unions or professional organizations to promote responsible behavior and support circularity.	13
Del Vecchio et al. (2021)	The paper analyzes new ways of business innovation and value creation through the application of circular economy models, in the context of the practice of smart, digital tourism, affected by the Covid-19 pandemic, with practical implications for managers of tourist destinations and managers of hospitality companies [4].	Through the case study of Ecobnb, a company that promotes green tourism, smart tourism promotion solutions were identified (digital technology, customization of offers based on big data analysis, diversification of products and services, etc.).	12
Joshi, S. et al. (2020)	Through the AHP-TOPSIS method applied in the analysis of agritourism clusters, the paper identified and ranked the key elements of the application of the circular economy in agritourism with the aim of determining the performance of this branch of tourism. It has been demonstrated that the attractiveness of the tourist destination comes first in terms of decisions related to the application of circularity, followed by community contributions and then by sustainable practices. Both the advantages of building these clusters based on circular economy are identified, as well as the limits of the study. These were due to a rather limited geographical coverage [10].	The authors demonstrate the fact that the increase in performance recorded at the level of agro-tourism clusters can be achieved in relation to the importance given to the application of circular economy principles.	10
Manniche, J. et al. (2021)	The authors had as their objective both the identification of the potential integrator of the circular economy for the development and promotion of sustainable tourism practices, as well as the presentation of a circular business model developed within a hotel in Denmark. [15].	The work demonstrates the fact that tourism, through its relations between host and guests, has a much greater potential for transformation, and this potential is not only due to the circular economy, but also to other integrative factors.	
Zorpas, A.A. et al. (2021)	The work highlights the impact that the tourism industry has on the environment, through the large amounts of waste produced, not only	The promotion of the circular economy is based on taking political and social measures and the encouragement of local tourism	7

	on the environment in general, but especially on biodiversity. For the implementation of circular models in tourism, a paradigm shift is needed [28].	businesses are identified (tax exemptions, tax reductions, granting of loans or financial guarantees, access and financial support), but also the taking of digitization measures (gamification, applications, software, etc.) to contribute to the reduction of pollution.	
Xu, A. et al. (2022)	The research identifies the existence of a gap between the assessment of sustainability in tourism, from a theoretical and practical point of view. Another contribution is represented by the index system used to improve the concept of greening in the tourism industry. [27].	The study combines the LE model with the DPSIR model for promoting and implementing the circular economy in tourism.	4
Ma, X.H. et al. (2016)	Starting from the fact that renewable energy ensures the application of the principles of the circular economy, the work presents the method of its use in tourism [14].	The obtained results demonstrate the fact that the implementation of renewable energy systems in tourism constitutes a feasible model of circular economy.	4
Owais, K. et al. (2022)	The paper assesses the attitude of 256 small and medium-sized tourism enterprises regarding the circular economy models applicable to them. The applied model is PLS-SEM, demonstrating that although the intentions towards this concept are positive, most of them do not have finality due to the gap determined by different contextual factors [19].	The study identifies some of the measures that can contribute to the realization of circular tourism and that relate to the dynamic capacities of SMEs.	3
Vatansever, K. et al. (2021)	The research identifies, evaluates and ranks the barriers in the tourism industry that prevent the transition process to a circular economy. Starting from a series of semi-structured interviews applied to tourism experts and using the FAHP method, pairs of relevant data are compared to achieve the research goal [25].	In the hierarchy of barriers, the organizational elements that hinder the supply chain (structure/infrastructure) are on the first place. This has a direct impact on the circular economy. Through the obtained results, measures can be taken regarding the transition of the tourism industry to the circular economy.	4
Cornejo-Ortega, L.J. et al. (2020)	The paper measures the capacity of companies regarding the possibility of implementing circular economy practices in Puerto Vallarta, Mexico. The working tool used was the questionnaire, applied to a number of 64 tourism companies [3].	The results obtained demonstrated that in Mexico companies apply different strategies that can be assimilated to the circular economy: strategies to reduce the consumption of fossil fuels, waste treatment, etc.. Although these strategies have a positive impact on the environment, they cannot be considered to be circular economy strategies. This is due to insufficient knowledge of this concept.	3

Source: own processing based [29].

The current study demonstrates the fact that although the concept of circular economy is one that is more and more frequently

encountered in specialized works of recent years due to concerns related to pollution, global warming, resource depletion, being

addressed in an important number of researches, in terms of its relationship with tourism, there are still few publications that deal with this subject.

After analyzing the most relevant 15 researches out of the 33 that corresponded to the searches in the Web of Science database, we found that most of the works started from studying the specialized literature with the aim of defining the concept of circular economy and establishing its relationship with the tourism industry. Most of the works present empirical business models that can be multiplied so that they can have an important contribution in the implementation of the circular economy concept in tourism and in complementary fields (leisure, catering, restaurants, etc.). The questionnaires applied to the different categories of actors involved in this industry allowed the identification of strengths, weaknesses, opportunities and threats that it faced when it comes to the application of circularity., but the measures that can be used to achieve both the objectives related to ensuring circularity and the creation of value and profit for tourism investors are identified and ranked.

All the analyzed studies constitute models to follow and useful guides both for practitioners and for decision-makers, so that the objectives proposed at the community and world level for the year 2030, and then for 2050 can be achieved.

CONCLUSIONS

One of the reasons for the analysis of the circular economy-tourism relationship is based on the importance that the tourism and tourism industry has both in the economy of a country and in the world economy. Another reason was represented by the fact that tourism contributes to the registration of large amounts of waste produced both by tourists and by the complementary industries that contribute to ensuring their hospitality. Therefore, the introduction of resources belonging to these branches of the economy in circularity could contribute to the

development of a much more sustainable tourism.

The research carried out in the Web of Science database demonstrates the fact that there is still not a very large number of specialized works that address the relationship between tourism and the circular economy. This aspect is in contradiction with the important role that circularity has in the development of today's society.

The application of circular tourism business models is not only necessary, but also mandatory in the context of sustainable development.

In conclusion, we consider that although the number of specialized works has increased in recent years, there is still a need for new research and case studies through which to implement and multiply concrete solutions that can contribute to the development of sustainable tourism, under the conditions in which the new generations are much more concerned with the future of the planet, with the practice of circular tourism. The achievement of these objectives must also be ensured by the implementation of policies and administrative measures that can ensure a global circular strategy in the tourism and hospitality industry.

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