



Circular Economy as a Factor in the Sustainability of the Tourism Sector. A Study Applied to Accommodation and Restaurants in the Municipality of Setúbal (Portugal)

Ana José Carvalho¹

Sandrina B. Moreira²

Luísa Carvalho³

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Abstract: *The lack of natural resources in the face of population growth is a serious challenge for today's societies. The development of circular economy strategies is a possible way forward, also for tourism as one of the main economic activities in the world. Based on the assumption that the circular economy is a factor in the sustainability of the tourism sector, the main objective of this research was to analyse the existence and implementation of circular economy policies in companies/organizations in the Accommodation, Catering and Similar activity segment in the municipality of Setúbal. The specific objectives included identifying the profile of those responsible for these companies/organizations, identifying the profile of these entities, checking whether they have circular economy practices, identifying the motivations that lead their managers to adopt or not adopt these practices, and analyzing what higher education institutions, such as the Instituto Politécnico Setúbal (IPS), can do to help companies/organizations overcome these difficulties and obstacles.*

For the development of this study, a quantitative approach was used, and the information was obtained through the application of a questionnaire survey to a convenience sample of 200 companies/organizations in the sector in the Municipality of Setúbal, with 45 responses considered valid for statistical treatment using SPSS software.

This study has shown that companies/organizations in the Accommodation, Catering and Similar activities segment of the tourism sector in the municipality of Setúbal are gearing their actions towards sustainability, adopting circular economy policies, particularly in some specific aspects such as reducing plastic and using reusable materials, considering cultural, financial, technological and human aspects as those that most influence the adoption of these practices and looking to the IPS as a fundamental partner in terms of awareness and dissemination.

Looking at the national picture, it can be concluded that, on the one hand, companies/organizations in the sector and segments considered have already started on the road to sustainability by adopting practices typical of the circular economy, but on the other hand, there is still a long way to go in this area, and that working in partnership between these companies/organizations, educational institutions and local and national authorities is essential.



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1. INTRODUCTION

Tourism is one of the main economic activities in the world and one that has contributed significantly to the growth of the Gross Domestic Product (GDP). In 2021, after the COVID-19 pandemic, it represented 6.1% of the global economy, after having already reached 10.3%

¹ Polytechnic Institute of Setúbal - ESCE, Campus do Instituto Politécnico de Setúbal, Estefanilha, 2914-503 Setúbal, Portugal

² Polytechnic Institute of Setúbal - ESCE, BRU-IUL, University Institute of Lisbon (ISCTE-IUL), Portugal

³ Polytechnic Institute of Setúbal - ESCE, EFAGE, University of Évora, Portugal

in 2019 (Turismo de Portugal, 2022). Portugal is one of the countries that has been investing in tourism, with a marked growth in this activity, one of the country's main sources of wealth. By 2022, it is estimated that tourism consumption will have reached 15.8% of the national GDP (Turismo de Portugal, 2023a).

Given the rapid growth of this activity, there has been a common, global effort by tourism-oriented countries to try to counteract so-called “mass tourism”. Thus, they have tried to balance the intensity of the activity according to the natural resources available to them, for two reasons: because these resources are finite; and to try to minimize the impacts on local communities. Only with sustainable tourism will it be possible to grow in a balanced way, taking into account a harmonious relationship between the environment, the economy and society. Given the need for sustainability in the sector, countries that invest in tourism, such as Portugal, conclude that the economic model to adopt is the circular economy. The traditional linear economy model is no longer a solution because resources are not infinite and, if we continue in this way, there will not be enough resources to meet the needs of an ever-growing population.

Setúbal, a district capital located in the south of Portugal, has prioritized the tourism promotion of its products in the national and international markets, with a strong focus on gastronomy and wines. As such, it was important to understand how restaurants and accommodations in the municipality are adopting circular economy practices, with a view to sustainability.

This chapter consists of a first section in which a literature review is presented on the three essential concepts, namely Tourism, Sustainability in Tourism and Circular Economy. The second section presents the general and specific objectives outlined and the methodology adopted. The third section focuses on the analysis and discussion of the results based on the information collected through the questionnaires. The chapter ends with the main conclusions and proposals for future research.

2. LITERATURE REVIEW

According to the 1994 definition issued by the World Tourism Organization, tourism is the “set of activities carried out by people during trips and stays in places outside their usual environment for a consecutive period not exceeding one year, for leisure, business and other reasons” (ONU Turismo, 2021, para. 1).

There are various types of tourism if we consider the reasons why people travel. In other words, “the types of tourism are the result of the reasons why people decide to travel and depend on a wide variety of personal factors (age, gender, personality, cultural and social level)” (Cunha & Abrantes, 2019, p. 26).

It is particularly interesting for this study to give some prominence to the Gastronomy and Wine Tourism dimension, given its content and purpose, and the UNWTO also pays special attention to it. At the same time as “global tourism is on the rise and competition between destinations is increasing, uniquely local and regional intangible cultural heritage is increasingly becoming the deciding factor in attracting tourists.” In a given region or country, food and wine are “an integral part of its history and identity” and “represent an opportunity to revitalize and diversify tourism, promote local economic development, involve various professional sectors and bring new uses to the primary sector”. They are decisive factors in terms of “promoting and branding

destinations, maintaining and preserving local traditions and diversities, and valuing and rewarding authenticity” (UN Tourism, 2021, para. 1-2).

Tourism and gastronomy have been intensifying their relationship. Gastronomy as a tourism product is a global trend (Shalini & Duggal, 2015).

The data provided by Turismo de Portugal shows that the “tourism sector is a fundamental economic activity for generating wealth and employment in Portugal” (Turismo de Portugal, 2023b, para. 1). This commitment to tourism seems to be paying off, as reflected in Figure 1, which includes information released in January 2023.

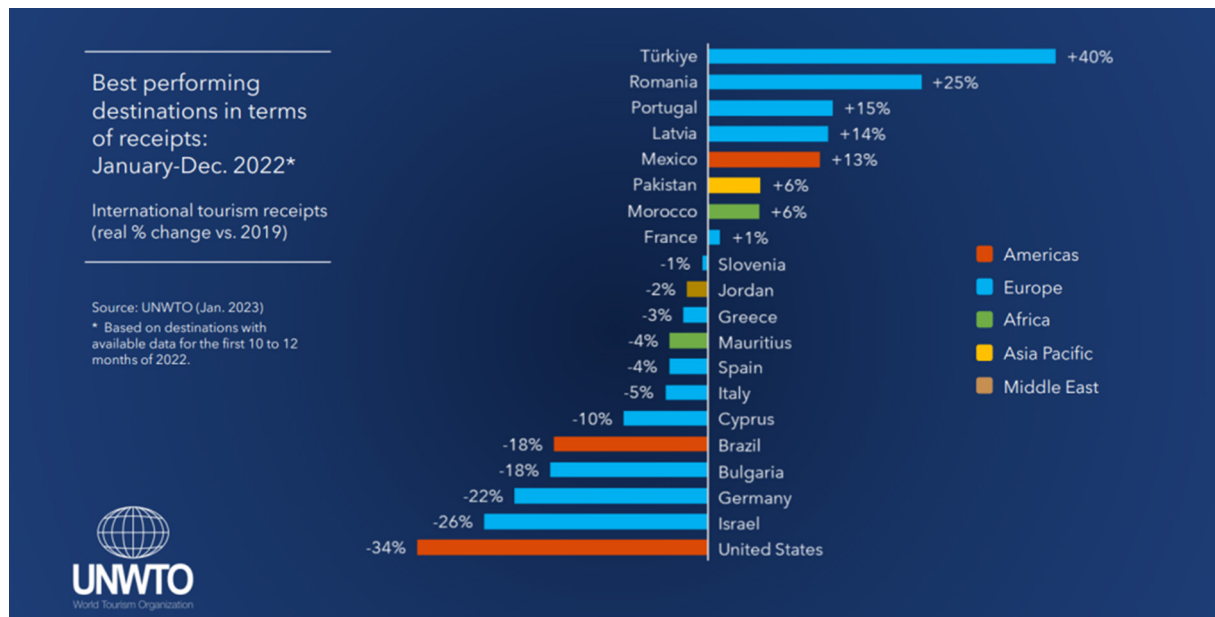


Figure 1. Best-performing destinations in terms of revenue

Source: UNWTO, 2023, p. 16

If we consider the first ten months of the year 2022, of the countries with data available at the time, Portugal was the third-world destination with the highest growth in terms of revenue obtained for the economy, compared to 2019 (Figure 1).

According to the UNWTO, sustainable tourism is “tourism that takes into account its current and future economic, social and environmental impacts to meet the needs of visitors, tourism industries, the environment and host communities” (UNWTO, 2012, p. 1).

According to Holden (2008), the perception of tourism as an economic sector that needs to develop sustainably began in 1997 at the Earth Summit II (New York). The conclusion about the urgency of sustainable development in tourism resulted fundamentally, on the one hand, from the negative impacts and the expression of dissatisfaction on the part of tourists at the clear lack of planning in the face of excesses in terms of exploitation of the economy, and on the other, from the search for a balance between making this economic activity profitable and reducing the negative effects of mass tourism.

Although there is awareness of the urgency of sustainability in tourism among the academic community, the political sector and society in general, Bailoa and Cravo (2021, pp. 34-35)

consider that “little progress has been made towards implementing sustainable tourism in practice. (...) although the paradigm of sustainable tourism has become popular in recent decades, little has been done in practice to implement it, and the context of the pandemic represents an opportunity to adopt sustainable (reduced) levels of consumption.”

Even with the pause caused by the negative effects of the COVID-19 pandemic, the tourism industry is one of the fastest-growing economic sectors. This has led to an increase in sustainability impacts. In this sense, the transition to a circular economy has become one of the European Union’s priorities, given what they advocate in terms of sustainability. However, there are still few studies on the concept of circular tourism (Arzoumanidis et al., 2021).

Since the 1990s, various events have been held on the subject of sustainable development, most notably the 2015 United Nations Sustainable Development Summit, which produced the 2030 Agenda for Sustainable Development (United Nations, 2023). This consists of 17 Sustainable Development Goals (SDGs) - as shown in Figure 2 - and 169 targets, and was signed by the heads of state and government of the 193 Member States of the United Nations (UN) on September 25, 2015, and came into force in January 2016.



Figure 2. Sustainable Development Goals (SDGs)

Source: Masó, 2021

Turismo de Portugal, I.P., for its part, decided to point to 3 of the 17 goals as those most directly related to tourism, namely: goal 8 (Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all), goal 12 (Sustainable Production and Consumption: Ensure sustainable production and consumption patterns) and goal 14 (Protect Marine Life: Conserve and sustainably use the oceans, seas and marine resources for sustainable development) (Dicionário do Desenvolvimento, n.d.).

In the document drawn up by Turismo de Portugal with the Tourism Strategy 2027 (ET27), a vision is assumed that identifies Portugal “as one of the most competitive and sustainable destinations in

the world” (Turismo de Portugal, 2017, p. 6), which represents a serious commitment by the tourism sector to the Sustainable Development Goals. Also in the Turismo +Sustentável 20-23 Plan, which follows on from the guidelines defined by the ET27, more than seven dozen initiatives and projects were listed that aimed to achieve sustainable performance in the tourism sector, particularly concerning the circular economy and climate change (Associação da Hotelaria, Restauração e Similares de Portugal (AHRESP) & Turismo de Portugal, 2021, p. 3). The main objective of this plan was to contribute to the implementation of the circular economy in tourism, i.e. to promote the transition to an economic model based on the prevention, reduction, recovery, reuse and recycling of materials, water and energy (Turismo de Portugal, 2021, p. 9).

According to Lima (2021), if developed societies want to achieve sustainable development, the way to do so will be through the circular economy. There has been a growing concern for future generations on the part of politicians and academics. Discussing and considering the best way to make the most of resources is precisely what defines the circular economy. The idea is to think of materials through a cyclical process, allowing them to last for a longer period while maintaining their value (Webster, 2017, as cited in da Silva et al., 2021).

The circular economy aims to change our traditional linear perspective to circular logic, taking advantage of waste and transforming it into resources, guaranteeing their circulation in a regenerative way. In other words, the idea is to change our usual perspective, with the support of technology to make it possible to transform what was previously considered “waste” into a valuable product (Borràs, 2018).

According to the Ellen MacArthur Foundation, which sees itself as an entity focused on the transition from the linear economy to the circular economy, this “is based on three principles, guided by design: eliminate waste and pollution; circulate products and materials (at their highest value); regenerate nature” (Ellen MacArthur Foundation, n.d.), as shown in Figure 3. This economic model is based on the definitive use of renewable energies and materials, causing economic activity to break with the consumption of finite resources.



Figure 3. The Three Principles of the Circular Economy

Source: Daniel, 2020

Both economies, companies and users/consumers benefit from the impact of the circular economy, “(...) impact on economic growth, material cost savings, mitigation of price volatility and supply risks, growth of employment in services, resilience of the labor market” (Lewandowski, 2016, p. 15).

According to Laubscher and Marinelli (2014), as cited in Lewandowski (2016), with the circular economy companies can gain some financial value and also gain advantages in terms of public opinion. Beuren et al. (2013); Firnkorn et al. (2012); Laubscher et al. (2014), as cited in Reis (2021), consider that the benefits can represent innovation and competitive advantage, long-term

contracts, increased revenue streams, customer loyalty and response, advantages in terms of internal resource management and positive partnerships throughout the value chain. Also according to Lewandowski, 2016, and as far as consumers/users are concerned, the added value of the circular economy translates into a wider range of options at a reduced cost.

Concerning the obstacles that the development of the circular economy may encounter, Andersen (2007) considers that the analysis of the advantages of implementing the circular economy is still very much linked to an idea of appreciating benefits in terms of material flows rather than monetary ones; Andersen (2007) also refers to the limitation of the benefits of recycling, which can represent high costs at environmental and economic levels; as well as the lack of familiarity of companies and investors with the Circular Economy; as well as the usual association of circular business models with a longer duration, which represents a decrease in financial attractiveness (Cornelia, 2017, as cited in João, 2018).

As for the policies adopted in favor of the circular economy, it was in 2015 that the first action plan for Europe's transition to a circular economy was implemented in the EU, adopting it as a model to be supported and setting targets until 2050 (Berardi & Dias, 2018; European Commission, 2015). The European Commission adopted a new Circular Economy Action Plan on March 11, 2020, which is one of the main pillars of the European Green Deal, Europe's new roadmap for sustainable growth (Direção-Geral da Educação (DGE), 2023).

Since the circular economy has an interdisciplinary dimension, given the economic importance of tourism, tourism and accommodation cannot be ignored. As a relatively recent field of study (Vargas-Sánchez, 2018, as cited in da Silva et al., 2021), research shows that this area of activity has sought to understand and apply the concept in the daily operation of hotel companies and tourist destinations.

When we look at the existing literature, there are no studies that identify clear and specific guidelines for triggering the tourism sector's transition to a circular economy, as there are in other sectors, such as industry, for example. What we can now call circular tourism requires the creation of a model in which each actor involved in tourism (from the tourists to Destination Management Organizations (DMOs), to suppliers (hotels, restaurants, etc.) and the community living in the place they are hosting) defends an ecological approach (Rodríguez et al., 2020).

Circular tourism is defined by Girard & Nocca (2017), as cited in Renfors (2023) as an example of creating a perfect circle of production of goods and services, without wasting the planet's limited resources of raw materials, water and energy. The authors argue that circular tourism is not only about reducing consumption and waste of non-renewable energy sources but also requires recovery, reuse, redevelopment, valorization and regeneration. Manniche et al. (2017), as cited in Renfors (2023), emphasize the need to have a vision of the circular economy in order to rethink it holistically.

3. OBJECTIVES AND METHODOLOGY

The starting question of this study was as follows: "Are companies in the Accommodation, Catering and Similar activities segment of the Tourism sector in the Municipality of Setúbal orienting their actions towards sustainability, adopting circular economy policies?". Subsequently, the general objective established was to analyze the existence and implementation of Circular

Economy policies, from a sustainability-oriented perspective, in companies in the Accommodation, Catering and Similar activities segment of the tourism sector in the municipality of Setúbal.

The following specific objectives were then outlined: (i) to identify the profile of those responsible for companies/organizations⁴ in the Accommodation, Catering and Similar activities segment of the tourism sector in the municipality of Setúbal; (ii) identify the profile of these companies; (iii) to verify the existence of circular economy practices, from a sustainability-oriented perspective, in these companies; (iv) identify the motivations that lead those responsible to adopt or not adopt these practices, i.e. their perception of the benefits and barriers for the company; (v) analyze what higher education institutions, in this case the Polytechnic Institute of Setúbal, can do to help companies overcome these difficulties and obstacles.

Once the databases of tourist accommodation and catering facilities available at Setúbal Town Hall, consisting of a total of 817 establishments at the time - March 2022 were made available, a convenience sample was defined. This non-probabilistic and non-random sampling technique used to create samples was used based on ease of access, so a sample of 200 companies was set up, specifically those that had a contact email associated with them.

The study developed and presented here can be classified as quantitative in terms of how the problem is approached. The questionnaire was the instrument used to collect information, made up of questions selected according to the concepts covered in the literature review, featured multiple-choice and Likert scale survey questions, in which respondents could evaluate a set of items using five-point scales (from 1-strongly disagree to 5-strongly agree). Its Google Forms version was sent via email to a database of 200 companies working in the tourism sector, in the restaurant and/or hotel sectors, in the municipality of Setúbal. The questionnaire, which is attached to this study, was sent out twice, between the end of April and the middle of June 2022. 82 questionnaires were filled in and 45 were submitted and validated (response rate of 22,5%), and later processed using the SPSS (Statistical Package for Social Sciences) statistical analysis program.

4. ANALYSIS AND DISCUSSION OF RESULTS

4.1. Respondent and Company/Organization Main Characteristics

Based on the data collected, it is possible to draw up a profile of the respondent. Most of them are managers/administrators, have been working in the company for around 3 to 5 years, and in the tourism sector for over 20 years, and have a degree, in terms of academic qualifications. From the answers obtained, we can also draw up a profile of the company. The majority have an economic activity code in the restaurant and similar segment, with a founding date between 2011 and 2020, i.e. founded between 3 and 12 years ago, and with many employees that do not exceed 10 (micro/small business).

Regarding the company's business model adopted in the last five years and whether it had ISO 14001 certification, Table 1 reveals the business model that was identified by the respondent, according to a set of parameters, to understand whether the company is positioned in a circular economy logic.

⁴ Hereafter we will use the term "companies", although we refer to both companies and organizations.

Table 1. Company/Organization Business Model

Parameter	Results	Level of Involvement
Environmental Commitment and Concern	42.2% believe that the company's business model is committed to environmental issues.	Very Strong
Resource Optimization and Efficiency	Here, total agreement was even stronger, with 24 answers (53.3%).	Very Strong
Sharing and Dematerialization Platforms	Just over half of the respondents showed no agreement (12 answers, 26.7%) or opted for NA/DK (not applicable and/or don't know) (12 answers, 26.7%).	Very weak
Sharing Material and/or Technological Resources	A third of the answers (15/33.3%) indicate total agreement.	Strong

Source: Own research

Concerning the sale and provision of services with environmental commitment and concern by the company/organization where they work, a significant proportion of respondents show total agreement with this premise. Out of 45 responses, 19 opted for the maximum value on the agreement scale (scale 5), i.e. 42.2% believe that the company's business model is committed to environmental issues, while no one expressed any agreement with the question. However, the second most chosen option was 3 (average value on the agreement scale), with 12 answers (26.7%).

With regard to the provision of services from the point of view of greater optimization and efficiency of resources, the total agreement is even stronger, with 24 responses (53.3%) that services are provided from the point of view of greater optimization and efficiency of resources, and 12 (26.7%) coming next on the scale. Only one person (2.2%) did not agree. With regard to the option of using sharing and dematerialization platforms, just over half of the respondents showed no agreement (12 answers, 26.7%) or opted for NA/DK (not applicable and/or don't know) (12 answers, 26.7%).

When it comes to considering that the company/organization favors/encourages the sharing of material and/or technological resources, this is not as significant as in the first cases, but still with a third of the answers (15/33.3%) indicating total agreement and nine opting for NA/DK (not applicable and/or I don't know) (9/20.0%), the last question still related to the business model adopted.

It was found that the majority of these companies are positioned in a circular economy logic with regard to the following parameters: sale and provision of services with environmental commitment and concern; and provision of services with a view to greater optimization and efficiency of resources. Still at low levels in this circular perspective is the parameter of encouraging the sharing of material and/or technological resources and, at a very low level, the adoption of sharing and dematerialization platforms.

Concerning ISO 14001 certification, 30 of the respondents, which corresponds to two-thirds (66.7%) of the total, said that the company did not have the certification in question, demonstrating the lack of commitment to protecting and safeguarding the environment and reducing and containing any damage by managing the environmental risks associated with the certified organization's activity (Simões, 2022). This does not mean, however, that they are not certified to other standards or that they do not follow all the rules and directives required by law. The ISO 14001 - Environmental Management Systems standard guides the European regulation EMAS (European Management and Audit Scheme), a set of international standards applicable to entities in any sector of activity and aimed at progressively improving the performance of each organization (Entidade Reguladora dos Serviços Energéticos (ERSE), 2020).

4.2. The Company/Organization's Orientation towards Sustainability

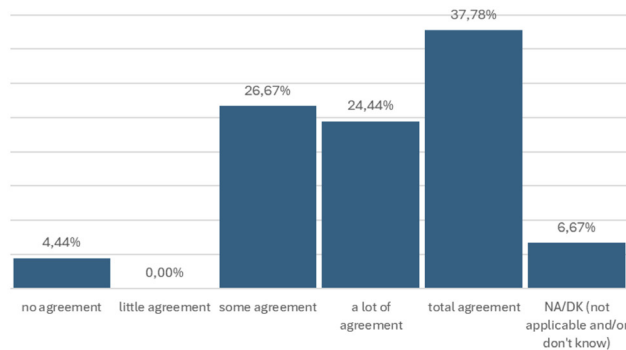
Moving to the set of questions that would make it possible to identify the existence (or not) of a sustainability orientation on the part of these companies, seeking to measure agreement in relation to each of the aspects considered, The following tables and graphs present the aspects identified, the results obtained and whether they were strengths or weaknesses.

As can be seen in Table 2 and graphs 1, 2, 3 and 4, the results show that the organization seeks to maximize energy and water efficiency and/or reduce pollutant emissions, through:

Table 2. Maximizing energy and water efficiency and/or reducing pollutant emissions

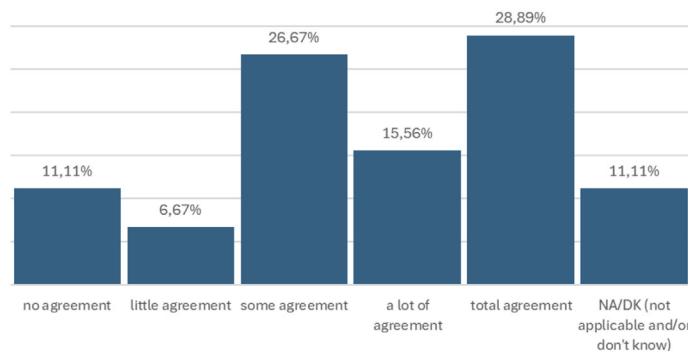
Action	Results	Level of Involvement
Practices to improve energy efficiency	More than a third of the respondents (17/37.8%) fully agreed with this question, with only two respondents (4.4%) ticking the no agreement option and three (6.7%) choosing to answer NA/DK.	Strong
Practices to improve water efficiency	There were still more answers for option 5 (total agreement), specifically 13 answers (28.9%), but not as many as in the previous question. There were five (11.1%) who chose option 1 (no agreement), and also five (11.1%) who answered NA/DK.	Strong
Practices to reduce polluting emissions from the value chain	Also on this question, 14 respondents showed total agreement, representing almost a third (31.1%) of the total, followed by 13 (28.9%) who chose the middle option.	Strong
Introduction of biodegradable and/or recycled materials in the production process	This question is the one that reveals the greatest consensus with regard to the organizations' practices, as more than half of the answers, 23 (51.1%), were in total agreement.	Very Strong

Source: Own research



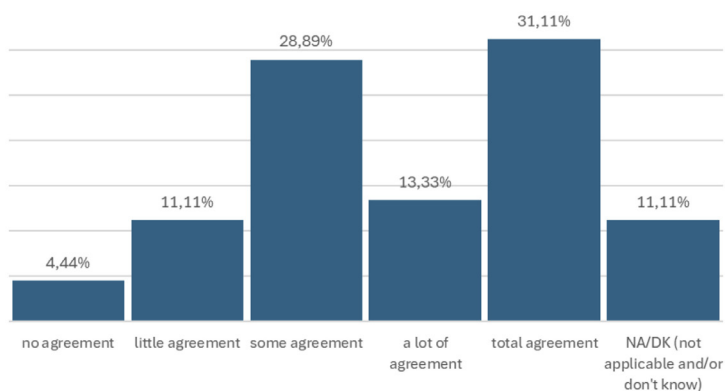
Graph 1. Practices to improve energy efficiency

Source: Own research



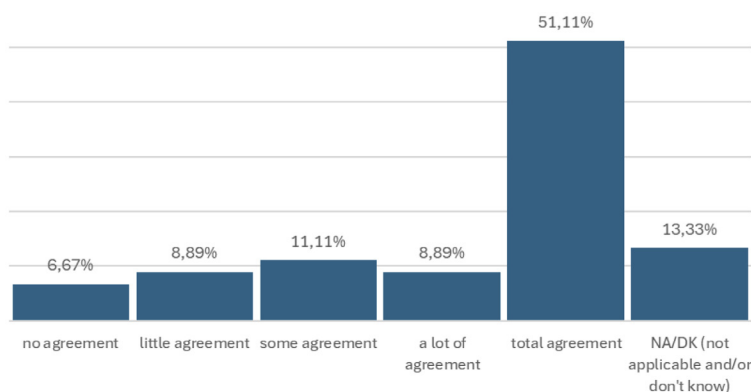
Graph 2. Practices to improve water efficiency

Source: Own research



Graph 3. Practices to reduce polluting emissions from the value chain

Source: Own research



Graph 4. Introduction of biodegradable and/or recycled materials in the production process

Source: Own research

This question is the one that reveals the greatest consensus concerning the organizations' practices, as more than half of the answers, 23 (51.1%), were in total agreement about the introduction of biodegradable and/or recycled materials in the production process and only three (6.7%) represented no agreement, while six (13.3%) assumed NA/DK.

There are several possible actions in this regard, such as opting for reusable packaging, recycled fabrics or fabrics made from sustainable fibers, and upgrading cleaning products with the *European Union's EcoLabel* - an ecological certification awarded to all products and services that guarantee a lower environmental impact. According to Stahel (2013, 2016), as cited in Reis (2021), from a profit and efficiency perspective, the product cycle should tend to be shorter, specifically, only what is broken or damaged will be "repaired", only what cannot be repaired will be "remanufactured", only what cannot be remanufactured will be "recycled", so local production should be taken into account in order to avoid packaging and transportation costs.

The issue of tourism sustainability is extremely important when it comes to the strategy adopted and to be adopted in Portugal, as can be seen from the ET27, which is strongly committed to this issue, having defined economic, social and environmental Sustainability Goals.

As can be seen from Table 3 about the choice of renewable and natural processes, not very significant, but still accounted for the largest number of responses, along with option 4, 11 (24.4%) people opted for total agreement on the commitment to product/service and/or internal process innovation, seven responses (15.6%) did not agree, and five (11.1%) opted for NA/DK.

Table 3. Choice of renewable and natural processes

Action	Results	Level of Involvement
Commitment to innovation in product/service and/or internal processes	Not very significant, but still accounting for the largest number of responses, along with option 4, 11 (24.4%) respondents opted for total agreement.	Weak
Encouraging recycling	Almost two-thirds (62.2%) of the answers show total agreement with this statement.	Very Strong
Encouraging the reuse of materials	On this question, too, there was a clear expression of total agreement, with almost half of the answers (22/48.9%) in this direction.	Very Strong
Use of renewable energy sources in day-to-day work	The most chosen option (12/26.7%) equates to no agreement, although 10 (22.2%) chose to answer NA/DK. The second most chosen option was the middle one with 11 answers (24.4%).	Very weak
Replacing materials and processes with new sustainable ones	28.9% of respondents (13) agreed completely, while 11.1% (5) did not agree at all.	Strong
Option to replace physical services/products with virtual services/products	Just over a third of the answers (16/35.6%) were in option 3 (medium level of agreement). Only six respondents (13.3%) expressed total agreement	Weak
Replacing physical materials and internal processes with new digital technologies	There were 13 respondents (28.9%) who fully agreed, followed by 12 (26.7%) in the option below.	Strong

Source: Own research

Almost two-thirds (62.2%) of the answers reflected total agreement with the statement “The organization encourages recycling”. Only one person (2.2%) revealed option 1 (no agreement).

About the organization encouraging the reuse of materials, there was a clear expression of total agreement, with almost half of the responses (22/48.9%) in this direction. Four people (8.9%) opted for 1 (no agreement).

The use of renewable energy sources in their day-to-day work seems to be an aspect that needs greater attention within the companies/organizations represented here, given that the most chosen option (12/26.7%) is equivalent to no agreement, although 10 (22.2%) chose to answer NA/DK. The second most chosen option was the middle with 11 answers (24.4%).

Concerning replacing materials and processes with new sustainable ones, 28.9% of the respondents (13) agreed with their organizations, while 11.1% (5) did not agree at all. Once again, the second most chosen option was 3 (medium level of agreement), with 11 answers (24.4%).

Just over a third of the answers (16/35.6%) were in option 3 (medium level of agreement) regarding the possible replacement of physical services/products by virtual services/products. Only six people (13.3%) were in total agreement and the same number of people (6) did not agree at all. It is also worth noting the number of people (11/24.4%) who opted for NA/DK when asked the question.

There were 13 people (28.9%) who fully agreed with the idea of replacing physical materials and internal processes with new digital technologies, followed by 12 (26.7%) with the option just below, and only three (6.7%) with no agreement at all.

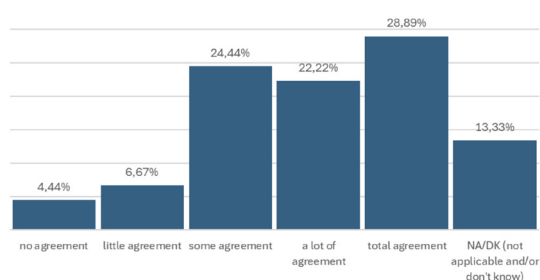
Adherence to electronic invoicing is an example of an action that can be followed up and taken, in the area of consumables, for example.

Regarding the relationship between companies/organizations and society and the environment, as shown in Table 4 and Graphs 5, 6 and 7:

Table 4. Relationship with society and the environment

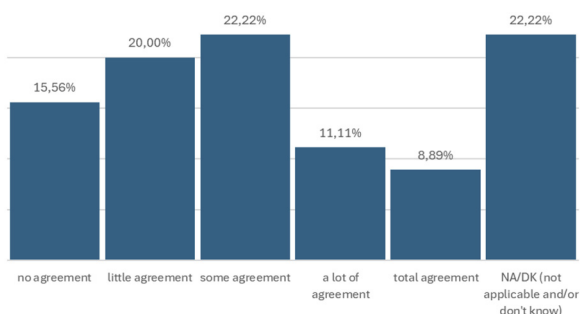
Action	Results	Level of Involvement
Encouraging connections with local communities and other partners to generate social and environmental benefits	About a third of the respondents (13/28.9%) agree completely with this question regarding their organization. Only two (4.4%) disagreed.	Strong
Creating mechanisms to derive the greatest possible benefits from sustainability	The largest number of answers were in the lower options, namely option 3 (10/22.2%), and then option NA/DK (10/22.2%).	Very weak
Investment in developing sustainable solutions for society and the environment	There was a huge dispersion of responses, with the one with the greatest consensus being option 4 (10/22.2%).	Very weak

Source: Own research



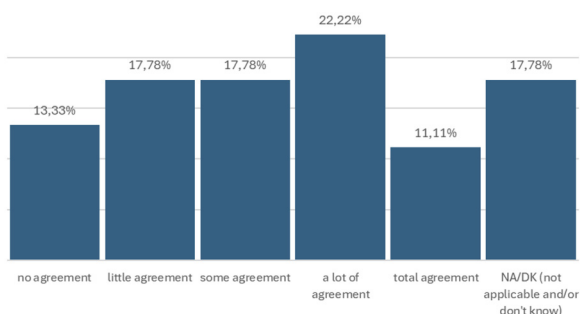
Graph 5. The organization encourages the creation of links with local communities and other partners to generate social and environmental benefits

Source: Own research



Graph 6. The organization creates mechanisms to derive the greatest possible benefits from sustainability

Source: Own research



Graph 7. The organization invests in developing sustainable solutions for society and the environment

Source: Own research

Table 5. Role of leadership in sustainability

Action	Results	Level of Involvement
Encouraging sustainable practices to ensure the well-being of partners	More than four out of 10 respondents (20/44.4%) expressed total agreement with this question. Only two (4.4%) did not agree at all.	Very Strong
Development of actions that encourage sustainable consumption by end users, or the adoption of more sustainable lifestyles	There is a general perception of agreement on this question. Exactly one-third of respondents (15/33.3%) opted for total agreement. Only four respondents (8.9%) opted for no agreement.	Strong

Source: Own research

As can be seen in Table 5, more than four out of 10 respondents (20/44.4%) expressed total agreement with the question of whether their organization encourages sustainable practices to ensure the well-being of partners. Only two (4.4%) did not agree at all.

With regard to your organization developing actions that encourage sustainable consumption by end users, or the adoption of more sustainable lifestyles, there is a general perception of agreement on this question. Exactly one-third of respondents agreed (15/33.3%). Only four people (8.9%) opted for no agreement.

It can be concluded that most of them are developing their path in the sustainability direction, through actions that translate into a circular logic, some of which are more present than others, but there is still a long way to go. Specifically, in terms of orientation toward sustainability, four fundamental areas were considered, each with a set of detailed measures and, according to the responses obtained, strengths and weaknesses were identified. As strengths in terms of practices concerning seeking to maximize energy and water efficiency and/or reduce pollutant emissions, we highlight the introduction of biodegradable and/or recycled materials in the production process and then practices to improve energy efficiency, water efficiency, and to reduce pollutant emissions in the value chain (Table 2). In another area, which concerns the company's/organization's choice of renewable and natural processes (Table 3), it is worth highlighting the incentive to recycle, by far the most common practice of all, but also the incentive to reuse materials. Some other practices are adopted by some companies/organizations, but not as strongly as the two already mentioned. These are: replacing materials and processes with new sustainable ones and replacing physical internal materials and processes with new digital technologies. Also in the same area, there was little adherence to practices such as investing in product/service and/or internal process innovation, using renewable energy sources in their day-to-day work and opting to replace physical services/products with virtual services/products. In the area of relations with society and the environment (Table 4), the practice of encouraging the creation of links with local communities and other partners to generate social and environmental benefits stands out, while the creation of mechanisms to derive the greatest possible benefits from sustainability and investment in the development of sustainable solutions for society and the environment have yet to be developed, these being the weak points identified. Finally, concerning the role of leadership in sustainability (Table 5), the strengths identified are the encouragement of sustainable practices to ensure the well-being of partners and the development of actions that encourage sustainable consumption by end users, or the adoption of more sustainable lifestyles.

4.3. Challenges and Opportunities for Companies/Organizations

Finally, two open questions sought to identify challenges and opportunities for the companies represented by the respondents. According to the answers obtained about the circular economy or sustainability

projects developed, the issues of reducing plastic and the importance of using reusable materials are the ones that have been most addressed. The various responses also mention recycling waste and composting, using solar energy to heat water, separating waste completely (paper, glass, plastic, corks, caps, used olive oil, masks and gloves, coffee capsules), and consuming products from small local producers.

In terms of the motivations that lead those responsible to adopt or not adopt these practices, cultural aspects were identified (existence or not of a culture of sustainability and training of human resources), economic-financial aspects and greater or lesser access to technology (costs involved and return on investment), the selection of suppliers with the same ecological concerns and principles, limited options in terms of the type of energy used, organizational bureaucracy, difficulties in creating joint projects for the benefit of the local community, the inadequate tax system which limits growth and the extensive ramification of regulatory bodies.

In the opinion of the respondents, the role that the Polytechnic Institute of Setúbal could play with companies in the region to overcome the difficulties observed is mainly in terms of dissemination and awareness-raising.

5. CONCLUSION

According to the [UNWTO \(2012\)](#), sustainable tourism considers its current and future economic, social, and environmental impacts to meet the needs of visitors, tourism industries, the environment, and host communities. Several authors understand the sustainability of tourism activity based on the combination of three dimensions: environmental, economic, and socio-cultural aspects, and emphasize the need for an appropriate balance between them to ensure long-term sustainability, applicable to all forms of tourism in all types of destinations ([Bailoa & Cravo, 2021](#)). [Bank and Bank \(2019\)](#), as cited in [Lima \(2021\)](#), stress that environmental and economic interests should not be in conflict but rather that economic activity should be profitable while maintaining a sustainable society. Sustainable tourism can therefore be defined as tourism that considers the economic, environmental, and socio-cultural repercussions on host countries and areas, satisfies the needs of visitors, and allows for an appropriate balance between these parameters to ensure long-term sustainability ([Hornero, 2016](#), as cited in [Martín & Carrillo-Hermosilla, 2021](#)).

From a sustainability-oriented perspective, the adoption of circular economy practices will be the only possible way for contemporary societies to overcome the biggest challenge of the scarcity of natural resources compared to population growth.

As tourism is one of the world's main and fastest-growing economic activities, suspended only in 2020 and 2021 due to the COVID-19 pandemic, it has contributed significantly to the development of local economies, even though with widespread concern about its sustainability.

The [ONU Turismo \(2020\)](#) notes that the COVID-19 crisis has reinforced the importance of local supply chains and led to greater reflection on how goods and services are produced and consumed, and that the tourism sector must take this opportunity to align itself with a sustainability perspective, by integrating circularity and increasingly defending resource efficiency in the value chain.

This research carried out a study on sustainability in tourism and circular economy surveying companies in the accommodation, catering and similar activities segment of the tourism sector in the municipality of Setúbal, in Portugal.

Results show that strategies have been defined to guide companies towards sustainability in the sector. However, although some have already been implemented, they have yet to be put into practice as a whole, not least because of the need for greater knowledge, support and pooling of efforts.

This study could trigger the development of more in-depth research specifically focused on circular economy practices for the tourism sector, extending to a larger number of companies and organizations.

One of the limitations of this study, which could be one of its potentialities in the future, is the need for a more detailed and in-depth statistical analysis of the data obtained through the questionnaire, such as assessing the relationship between the level of employee engagement and motivation or analyzing the causes of low levels of engagement.

Considering the difficulties in terms of availability on the part of the target audience, some questionnaires in person could be assumed, as well as understanding the perspective of consumers when choosing accommodation and/or catering establishments. Finally, new or strengthened institutional partnerships could be settled between tourism organizations, local authorities, and higher education institutions, with a view to greater and better results for sustainability, based on greater involvement, a real commitment to training and research, and the development of joint good practices.

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Appendix

Questionnaire Survey (<https://inqueritos.ips.pt/index.php?r=survey/index&sid=427856&lang=pt>)

Management for sustainability and the circular economy

This research aims to analyse the influence of management for sustainability and the circular economy on the business model of companies and organizations in the district of Setúbal. It is being conducted by a research group from the Polytechnic Institute of Setúbal, under the coordination of Professor Luísa Cagica Carvalho.

We would like to invite your company/organization to complete this questionnaire. Please note that all the information obtained will be used for academic purposes only, and the results of the study will be published in aggregate form, with interested companies/organizations making the data available to support improved management.

Any questions can be addressed to: luisa.c.carvalho@esce.ips.pt.

Thank you in advance for your attention to the above, and we remain at your disposal for any further clarification.

Block I – Profile of the Respondent

1 – Position currently held:

- Manager/Administrator;
- Technical director (commercial, financial, HR, operational);
- Other. Which _____ .

2 – How long have you worked in the organization?

- Less than 3 years;
- 3 to 5 years;
- 6 to 10 years;
- 11 to 20 years;
- More than 20 years.

3 – How long have you worked in your current sector (in years)?

- Less than 3 years;
- 3 to 5 years;
- 6 to 10 years;
- 11 to 20 years;
- More than 20 years.

4 – Education (Choose only one option):

- Basic Education;
- Technical/Vocational Education;
- Secondary education;
- Degree;
- Master's degree;
- Doctorate;
- Other. Which _____ .

5 – If you would like to receive the results of the study, please enter your e-mail address below:

_____ .

Block II – Organizational profile

6 – Indicate the CAE _____ .

7 – Indicate when the organization was founded:

- Before 1980;
- Between 1981 and 2000;
- Between 2001 and 2010;
- Between 2011 and 2020;
- After 2021.

8 – Indicate the total number of employees currently in the organization (choose only one option):

- Up to 10 workers;
- From 11 to 50 employees;
- 51 to 250 employees;
- 251 or more employees.

9 – I believe that our business model over the last 5 years:

(reflect, based on a scale of agreement of 1 (no agreement) – 5 (total agreement); NA/DN (not applicable and/or I don't know))

- Sells and provides services with environmental commitment and concern.
- Provides services with a view to greater optimization and efficiency of resources.

- Uses sharing & dematerialization platforms (e.g. direct consumer sales and purchase marketplaces, second-hand product sales platforms, subscription platforms).
- Privileges or encourages the sharing of the organization's material and/or technological resources.

10 – Do you know if the company has ISO 14001 certification (environmental management system)?

Yes, No

Block III – Orientation towards sustainability

The following questions seek to measure your AGREEMENT with each aspect presented. Choose the option that best applies to you on a scale of 1 (no agreement) to 5 (total agreement) or NA/DK (not applicable/don't know):

11 – In your opinion, the organization strives to maximize energy and water efficiency and/or reduce polluting emissions by:

(1 (no agreement) – 5 (full agreement); NA/DK (not applicable and/or don't know))

- Practices to improve energy efficiency.
- Practices to improve water efficiency.
- Practices to reduce polluting emissions from the value chain (from the supplier to the delivery of the product/service to the end consumer).
- Introduction of biodegradable and/or recycled materials in the production process.

12 – In your opinion, the organization opts for renewable and natural processes.

(1 (no agreement) – 5 (total agreement); NA/DK(not applicable and/or don't know))

- The organization is committed to product/service innovation and/or internal processes with the aim of introducing renewable resources and energies and developing new solutions by imitating what happens in nature.
- The organization encourages recycling.
- The organization encourages the reuse of materials.
- The organization uses renewable energy sources in its day-to-day work.
- The organization replaces materials and processes with new sustainable ones.
- The organization chooses to replace physical services/products with virtual services/products.
- The organization replaces physical materials and internal processes (e.g. paper, printing) with new digital technologies (dematerialization).

13 – In your opinion, with regard to society and the environment:

(1 (no agreement) – 5 (total agreement); NA/DK (not applicable and/or I don't know))

- The organization encourages the creation of links with local communities and other partners to generate social and environmental benefits.
- The organization creates mechanisms to derive the greatest possible benefits from sustainability (sustainability incubators and internal and/or external idea-sharing platforms).
- The organization invests in developing sustainable solutions for society and the environment.

14 – Regarding the role of leadership in sustainability, in your opinion:

- (1 (no agreement) – 5 (total agreement); NA/Dk (not applicable and/or I don't know))
- The organization encourages sustainable practices to ensure the well-being of partners (employees, customers, suppliers, shareholders).
 - The organization develops actions that encourage sustainable consumption by end users, or the adoption of more sustainable lifestyles.

Block IV – Challenges and Opportunities

15 – List some circular economy or sustainability projects in which your organization is involved and reflect on the value they can have for the organization, society and the environment.

16 – Given all the existing challenges in implementing sustainable or circular economy business models, indicate those in which your organization encounters the greatest barriers (e.g. economic-financial, technological, know-how, human resources, organizational culture) and how you think the Instituto Politécnico de Setúbal (IPS) could provide an assertive response and help companies in the region overcome the difficulties observed.

Thank you very much for your participation!