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Adoption of Circular Economy and Environmental Certifications: Perceptions of Tourism SMEs

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Abstract

Tourism is one of the most important industries in the world. On the one hand, tourism activities provide a significant boost to many national economies but on the other hand, they severely impact the environment. Tourism SMEs are therefore needed to transform their activities from a linear economy to a circular economy (CE). However, the tourism industry has not yet shown a clear and decisive transition towards CE. There is no or very little academic discussion on why the tourism industry has not yet adopted CE and how tourism SMEs can adopt CE. In this context, we analyzed a sample of 256 tourism SMEs (hotels and accommodations, travel agencies, tour operators, and reservation service activities) based in Cyprus, France, Italy, and Spain. Our survey reveals a ruthless situation regarding the adoption of environmental certifications. There is a very low demand to adopt an environmental certification in the tourism industry. Moreover, the adoption of CE among tourism SMEs is not so high. The main factors that hinder the adoption of green or CE practices are lack of funds, lack of information about potential partners, and lack of skilled personnel. Nonetheless, many tourism SMEs perceive that CE adoption leads to various positive outcomes. Our study provides some suggestions to facilitate the transition towards CE in the tourism industry.

Keywords: barriers, circular economy, drivers, environmental certifications, outcomes, sustainable tourism

1. Introduction

Over the past decades, tourism has become an important industry in the world. It is estimated that the tourism industry contributes to 10.3% of global GDP, accounts for 6.8% of total exports, and provides 1 in 10 jobs (WTTC, 2020). Tourism is indeed the most important source of income for many countries as 1.3 billion people travel for business or pleasure every year (UNWTO, 2018). While providing a significant boost to many local and national economies, tourism activities have been strongly impacting the environment, contributing not only to environmental degradation but also to the raising of GHG emissions (Pang, McKercher, & Prideaux, 2013). The tourism industry is currently responsible for 8% of the global GHG emissions (Lenzen et al., 2018), but future projections are even higher as the number of people traveling around the world will continue to grow by 2030 (UNWTO, 2019). In short, the concept of sustainability has become imperative for the tourism industry not only to conserve the environment but also to maintain economic growth.

The tourism industry in the EU is considered a powerful means to pursue broader EU employment and growth objectives. The competitiveness of the tourism industry in the EU is closely linked to its sustainability, which is understood as environmental, economic, and socio-cultural aspects of tourism development. The EU policies on tourism development are mainly focused on driving Europe towards maintaining its competitive position as a leading tourism destination worldwide but at the same time developing more sustainable forms. However, this can only be possible if tourism SMEs will implement sustainable management in terms of both technological and non-technological innovations (Jaroszewska, Chaja, & Dziadkiewicz, 2019). Put differently, tourism SMEs will have to transform their activities from a linear economy model (take-make-dispose) to a circular economy (CE) model (take-make-use-reuse).

CE is considered vital for sustainable development (Ghisellini, Cialani, & Ulgiati, 2016) and therefore the EU and several national governments have been urging SMEs for CE implementation (Khan, Daddi, & Iraldo, 2021). CE is indeed a potential solution to problems such as resource scarcity, climate change, and environmental pollution. The literature on CE was mainly developed for the manufacturing sector and is still concentrated

around the same sector (Rodríguez, Florido, & Jacob, 2020). To the best of our knowledge, there is a scarcity of research on CE in the tourism industry despite the fact this industry is predominantly based on a linear economy. Although tourism SMEs may adopt an environmental certification and various green or CE practices to reduce consumption of natural resources, waste generation, and GHG emissions. However, the tourism industry has not yet shown a clear and decisive transition towards CE (Rodríguez et al., 2020). There is no or very little academic discussion on why most tourism SMEs are not adopting CE and in case if they want to adopt CE how they may do so.

In this context, this paper aims to investigate the following questions.

1) How much is the demand for environmental certifications and do tourism SMEs intend to adopt them?

2) What are the drivers and barriers to CE adoption in tourism SMEs?

3) What is the status of CE adoption in tourism SMEs?

4) Which specific green or CE practices do tourism SMEs intend to adopt?

5) What are the outcomes of green or CE practices adoption in tourism SMEs?

The rest of this paper is divided into five sections. Section 2 reviews the literature on sustainable tourism and CE. Section 3 describes the methodology used to investigate the proposed questions. Section 4 presents the statistical results. Section 5 discusses these results and point out their implications. Section 6 concludes the discussion, highlights the limitations, and suggests future research opportunities.

2. Literature Review

Sustainable tourism is defined as "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (UNWTO, 2005, pp. 11–12). In light of this definition, tourism SMEs are supposed to use resources wisely and conserve natural heritage and biodiversity. Sustainable tourism aims to "satisfy the need of tourists and hosting regions and, at the same time, preserves and improves future opportunities" (UNWTO, 1998). Put differently, sustainable tourism aims to contribute to poverty alleviation and therefore it emphasizes the viability of economic operations that could provide socio-economic benefits to all stakeholders (i.e., stable employment or earning opportunities and social services to host communities) (Girard & Nocca, 2017). To develop such a sustainable industry, tourism SMEs will have to adopt environmental certifications and implement green or CE practices.

The current economic system is simply unsustainable. Hence, the concept of CE has been gaining increasing attention not only from scholars but also from policymakers. Lieder and Rashid (2016) pointed out that there are various possibilities for defining CE. There is still no clear or standard definition of CE. Nevertheless, CE can be understood as "an economy that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times" (Ellen MacArthur Foundation, 2015, p. 2). Kirchherr, Reike, and Hekkert (2017, pp. 224–225) defined CE as "an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro-level (products, companies, consumers), meso-level (eco-industrial parks) and macro-level (city, region, nation and be-yond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations".

To stimulate the transition towards CE in the EU, the European Commission proposed a Circular Economy Action Plan (CEAP) in 2015. CEAP mapped out 54 actions as well as some legislative proposals on waste (EC, 2019). However, the EU recycled on average only 30% of all plastic waste by 2018 and thus the European Commission announced a European strategy for plastics and set new recycling targets for plastics at a minimum of 50% by 2025 and 55% by 2030 (Khan, Daddi, Slabbinck, et al., 2020). In the current era, many environmental certifications exist in the world. An SME may adhere to any national or international certification for improving environmental performance and obtaining public recognition (Daddi, De Giacomo, Frey, & Iraldo, 2018). The most widespread and renowned are ISO 14001 and Environmental Management and Audit Scheme (EMAS). These certifications are recognized by the EU as part of Sustainable Production and Consumption (SCP) tools that may support the transition towards CE (Marrucci, Daddi, & Iraldo, 2019).

Scholars have recently started to discuss CE in the context of the tourism industry. Girard and Nocca (2017, p. 68) pointed out circular tourism as "a model able to create a virtuous circle producing goals and services without wasting the limited resources of the planet that are raw materials, water and energy". However, the literature on

CE in the tourism industry is still in its early infancy (Rodríguez-Antón & Alonso-Almeida, 2019). It is understood that by applying the principles of CE, tourism SMEs can contribute to sustainable tourism. The hotels and accommodations have been already implementing some green practices focused on energy efficiency, water efficiency, and recycling waste (Erdogan & Baris, 2007). Green practices are defined as "a profitable business strategy that adds value to tourism operations that involve environmental conservation initiatives" (Kim, Lee, & Fairhurst, 2017). Green practices provide opportunities for sustainability and long-term recreation activities (Merli, Preziosi, Acampora, Lucchetti, & Ali, 2019), and so by implementing green or CE practices tourism SMEs can reduce their negative impacts on the environment and attract green customers.

In the past two decades, scholars have widely discussed green practices (Ma, Hou, Yin, Xin, & Pan, 2018). They mainly focused on the drivers of green practices. While some scholars investigated the relation between green practices and profitability (Donald, 2009; Yang, Zhang, Jiang, & Sun, 2015), others studied the effect of green practices on customer satisfaction and purchasing intentions in the hospitality industry (Chen & Tung, 2014; Gao & Mattila, 2014; Kassinis & Soteriou, 2015; Kim et al., 2017; Yusof, Jusoff, Ibrahim, & Awang, 2017). Some scholars have studied to what extent tourism development impacts the quality of the environment (Erdogan, 2009; Kasim, 2007). However, to the best of our knowledge, there is a scarcity of research on the adoption of CE from an organizational perspective, particularly in the tourism industry. Moreover, the literature lacks evidence on green practices adoption in travel agencies and tour operators.

3. Methodology

To investigate the adoption of CE and environmental certifications in the tourism industry, we adopted a quantitative research approach and carried out an online survey among tourism SMEs in Cyprus, France, Italy, and Spain. It is worth noting that tourism contributes to employment and GDP in many countries, especially in the EU, where 5 countries are among the top 10 tourism destinations in the world (Rodríguez et al., 2020). Furthermore, the EU has been taking various initiatives to facilitate CE implementation. The European Commission has recently adopted a new CEAP for a cleaner and more competitive Europe (EC, 2020). Hence, a sample from the above-mentioned EU countries fit perfectly to investigate our proposed questions.

As a first step, we reviewed relevant literature and accordingly developed our survey questionnaire. Next, we asked four academicians and practitioners to review the suitability and contents of our survey questionnaire. In this way, we further improved the quality of our survey questionnaire. Afterward, we translated the survey questionnaire into regional languages (French, Italian, Spanish, and Greek) with the help of project partners. We assumed that questionnaires in regional languages may increase the response rate.

We extracted a list of tourism SMEs through the ORBIS database. Then, we randomly selected a sample of 5000 SMEs. Finally, we invited those SMEs via SurveyMonkey to participate in our study which remained active from January to March 2021. In parallel, we requested our project partners to disseminate the online survey link to SMEs by involving local associations. Although we sent reminder messages in due time, we just got 256 responses at the end of the survey. It is worth mentioning that most of the tourism SMEs that responded to our online survey are micro-enterprises with a low annual income (see Table 1).

Table 1. Description of sample

Characteristics	Description	Frequency	Percentage (%)
Country	Cyprus	23	9.0
	France	42	16.4
	Italy	131	51.2
	Spain	60	23.4
Type of Organization (NACE)	Hotels and similar accommodation (55.10)	129	50.4
	Holiday and other short-stay accommodation (55.20)	51	19.9
	Travel agency activities (79.11)	39	15.2
	Tour operator activities (79.12)	27	10.5
	Other reservation service and related activities (79.90)	10	3.9
Number of Employees	1–5	132	51.6
	6–9	49	18.4
	10–25	51	19.9
	26–49	9	3.5
	50–99	10	3.9
	100–249	3	1.2
	More than 250	4	1.6
Annual Income	Less than 1,000,000 Euro	180	70.3
	1,000,000–2,000,000 Euro	34	13.3
	More than 2,000,000 Euro	42	16.4
Respondent Profile	Owner	161	62.9
	Manager	71	27.7
	Other	24	9.4

4. Results

4.1 General Perceptions

We found that 86.3% of tourism SMEs are aware of the concepts of sustainability and CE. In other words, most SMEs know the potential benefits of CE and therefore they generally possess a positive attitude towards CE. In particular, 90.5% of SMEs perceive that CE is beneficial for the whole society and 84.5% of SMEs believe that CE adoption would give them great moral satisfaction. However, only 26.1% of SMEs strongly believe that CE is financially rewarding for their business. It is worth noting that 7.9% of SMEs believe that CE is not financially rewarding for their business and 27.9% do not have a clear stance on this statement (see Figure 1).

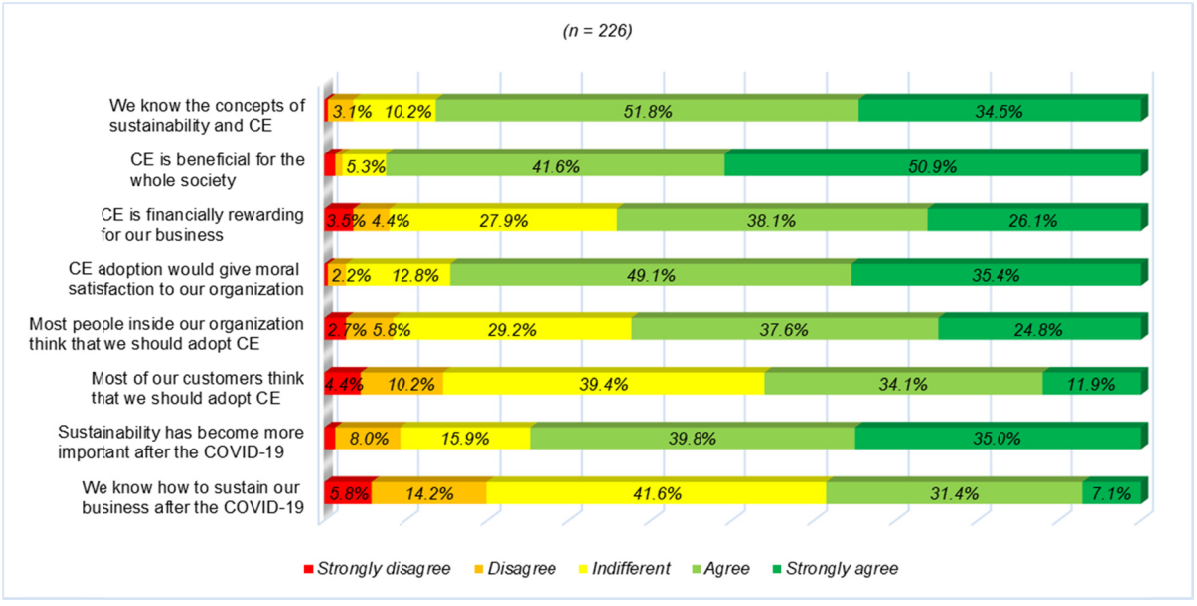

Figure 1. General perceptions

We found that 62.4% of SMEs agree that most people inside their organization are in favor to adopt CE, which is certainly a good sign to accelerate the transition towards CE in the tourism industry. In contrast, only 11.9% of SMEs strongly believe that customers demand or want to see them adopting CE. Put differently, 14.6% of SMEs explicitly indicated that they do not face pressure from customers to adopt CE while 39.4% of SMEs neither agree nor disagree with this statement (see Figure 1). We can say that lack of push from customers is one of the reasons, or demotivating factor, why most tourism SMEs are not adopting CE.

We noted that the significance of sustainability has increased after the COVID-19 or coronavirus pandemic. Almost 75% of SMEs agree with this statement while 9.3% disagree. Although coronavirus pandemic has affected almost everything, tourism SMEs are among the most affected ones. We asked tourism SMEs whether they know how to recover the loss, increase profit, and sustain their business after the coronavirus pandemic. It is unsurprising that only 7.1% of SMEs strongly believe that they can recover and sustain their business after the coronavirus pandemic while 31.4% seem to be a bit confident to tackle this situation. However, 20% of SMEs seem to be despair and 41.6% do not have a clear stance on this statement.

4.2 Status, Demand, and Intention to Adopt Certifications

We found that 77.7% of tourism SMEs do not have any sort of certification. Only 9.0% and 2.7% of SMEs have ISO 9001 and ISO 14001 certifications, respectively. Moreover, only 6.3% and 1.2% of SMEs are certified with EU Ecolabel and EMAS, respectively (see Figure 2).

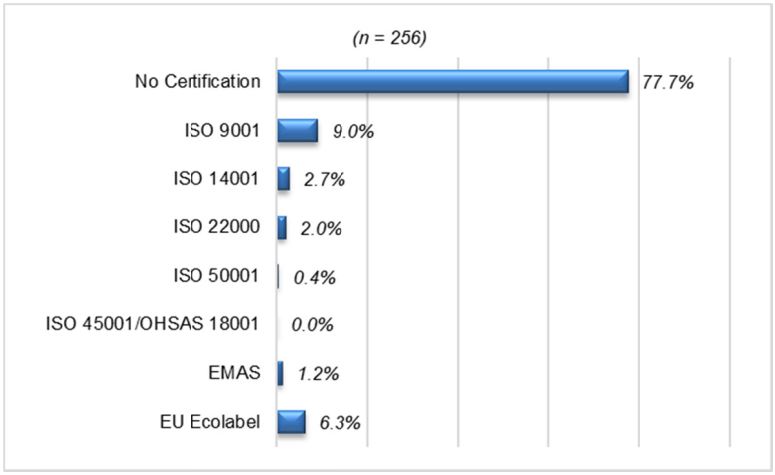

Figure 2. Status of certifications adoption

There may be several reasons why most tourism SMEs do not have adopted environmental certifications. Nonetheless, a prominent reason as indicated by SMEs is that there is a very low demand or expectations of partners, suppliers, and trade associations to adopt an environmental certification or ecolabel scheme in the tourism industry. 50% of SMEs responded that there is a low demand to adopt an environmental certification or ecolabel scheme while only 14.4% of SMEs responded that there is high demand. Interestingly, the demand or expectations of customers for green products or services is relatively higher. 35.1% of SMEs believe that there is a high demand for green products or services while 26.2% disagree with this statement (see Figure 3).

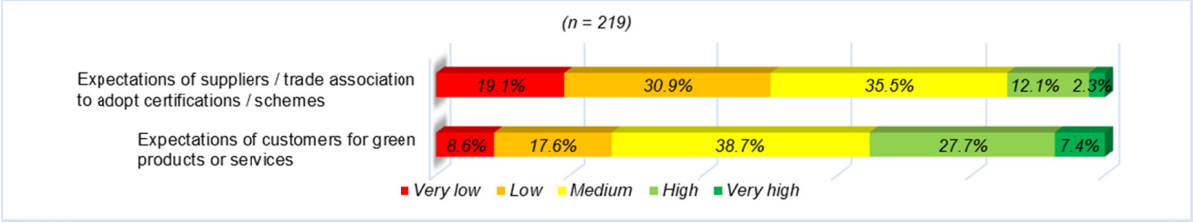

Figure 3. Demand for certifications and green products or services

There are many international environmental certifications or ecolabel schemes. For instance, ISO 14001, EMAS, EU Ecolabel, Green Globe, Green Key, Travelife, Biosphere Tourism, EarthCheck, Nordic Swan, and Blue Angel, etc. Nevertheless, an SME may prefer to adopt national environmental certifications. Therefore, we asked tourism SMEs whether they knew listed certifications. Moreover, to predict whether the current situation (low adoption rate) would improve, we asked about their intention towards listed certifications. Surprisingly, most SMEs did not know about listed certifications or otherwise are not considering their adoption. It is worth noting that only 4.3% and 5.1% of SMEs have successfully adopted ISO 14001 and EU Ecolabel, respectively (see Figure 4).

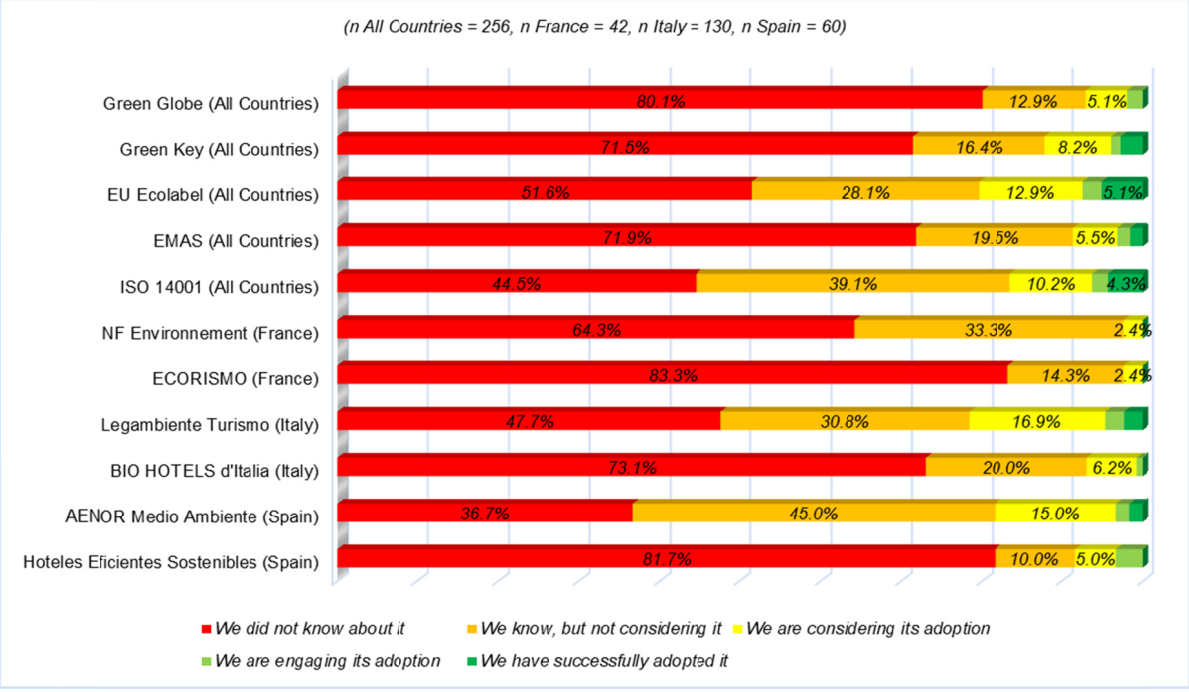

Figure 4. Intention to adopt certifications or schemes

4.3 Status of CE Adoption

We found that most SMEs are focused on recycling and reducing measures. 47.3% of SMEs have been successfully implementing recycling waste while 19.1% of SMEs have been initiating it. 34% of SMEs are already reducing energy consumption and food waste. 32.4% and 31.6% of SMEs have been successfully implementing measures to reduce plastic use and water consumption, respectively (see Figure 5).

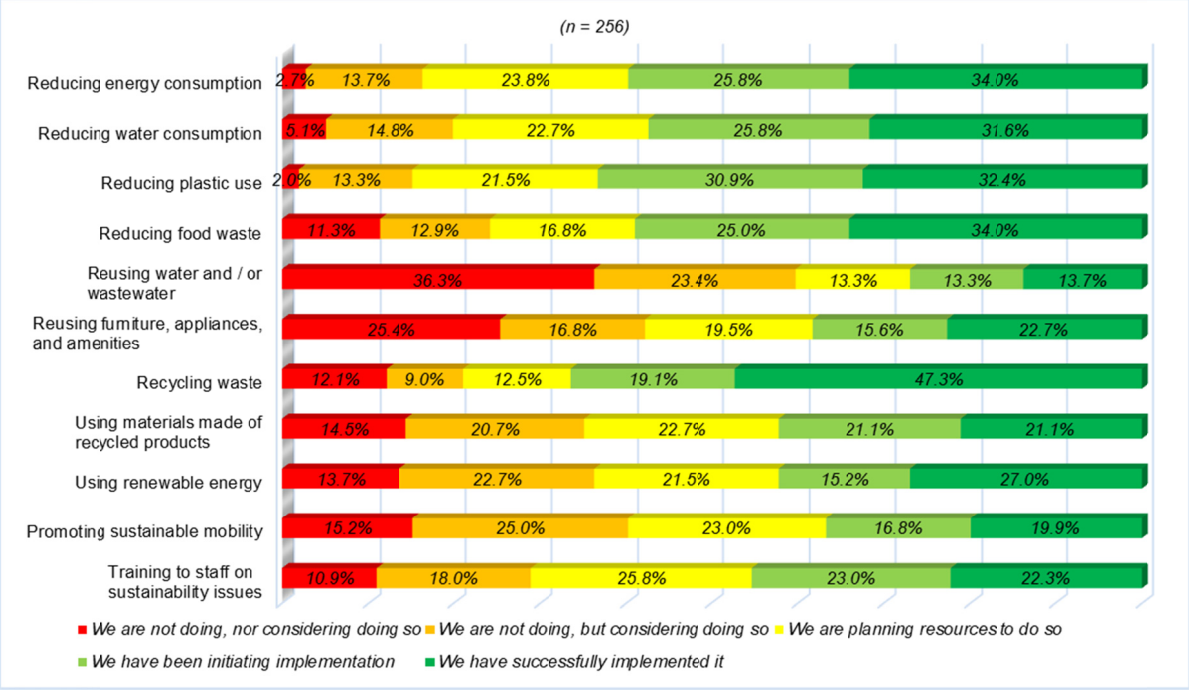

Figure 5. Status of CE adoption

It is worth noting that most SMEs are not interested in the reusing strategy of CE. 36.3% of SMEs responded that they are not doing nor considering reusing water and/or wastewater. A very low preference for this practice may be due to hygienic reasons. It seems to be surprising that 25.4% of SMEs have no interest in reusing furniture, small appliances, and amenities. Perhaps, luxury and comfort are the priority of most hotels and accommodations and so this practice is least preferred by them. In short, the overall level of CE adoption in the tourism sector is not high (see Figure 5).

4.4 Drivers, Barriers, and Intention to Adopt Green or CE Practices

An SME may have two or more drivers (motivating factors) for adopting green or CE practices. The majority of tourism SMEs indicated that the top drivers for adopting green or CE practices are to improve environmental performance, quality of services, and public reputation. In contrast, the least important drivers for adopting green or CE practices are to keep up with main competitors, to improve relations with suppliers, and to satisfy a request from trade associations (see Figure 6). It implies that there is a low pressure from suppliers and trade associations to adopt green or CE practices as well as negligible competition for CE ideas among tourism SMEs. Some scholars point out that pressure from customers and competitors may accelerate the transition towards CE (Khan, Daddi, & Iraldo, 2020).

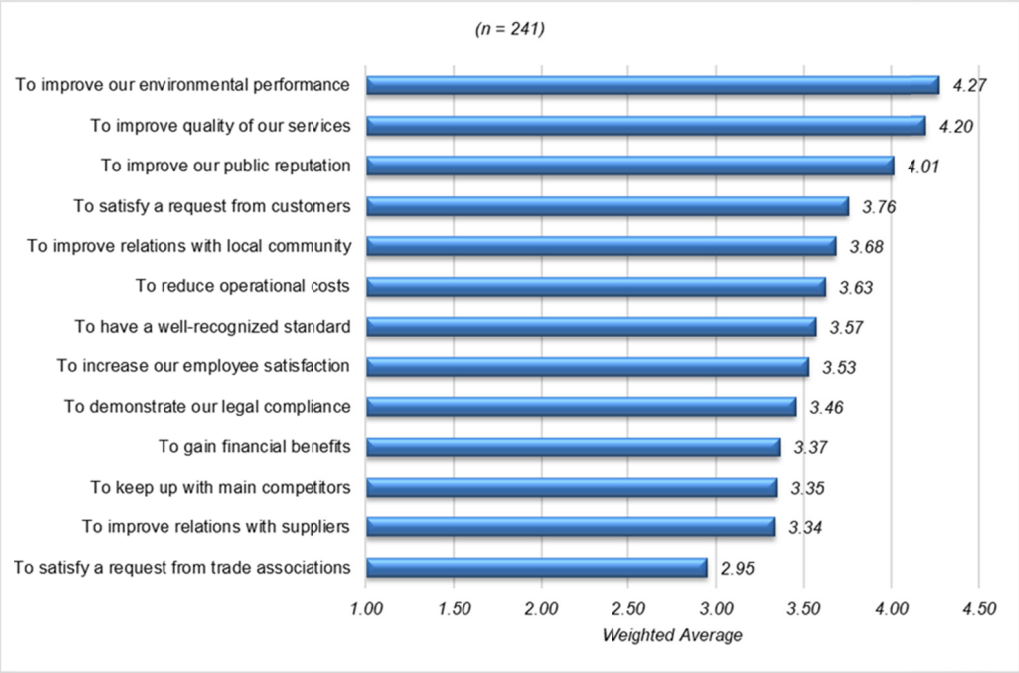

Figure 6. Drivers for adopting green or CE practices

We found that the main factors that hinder the adoption of green or CE practices in tourism SMEs are lack of funds, information about potential partners, and skilled personnel. Unsurprisingly, 78.8% of SMEs responded that lack of funds causes hindrance in the adoption of green or CE practices. CE solutions often need significant investments while SMEs usually do not have such investments. 66.3% of SMEs responded that they do not have information about potential partners who may assist them in the transition towards CE, while 64.5% of SMEs indicated that they do not have skilled personnel to implement green or CE practices (see Figure 7).

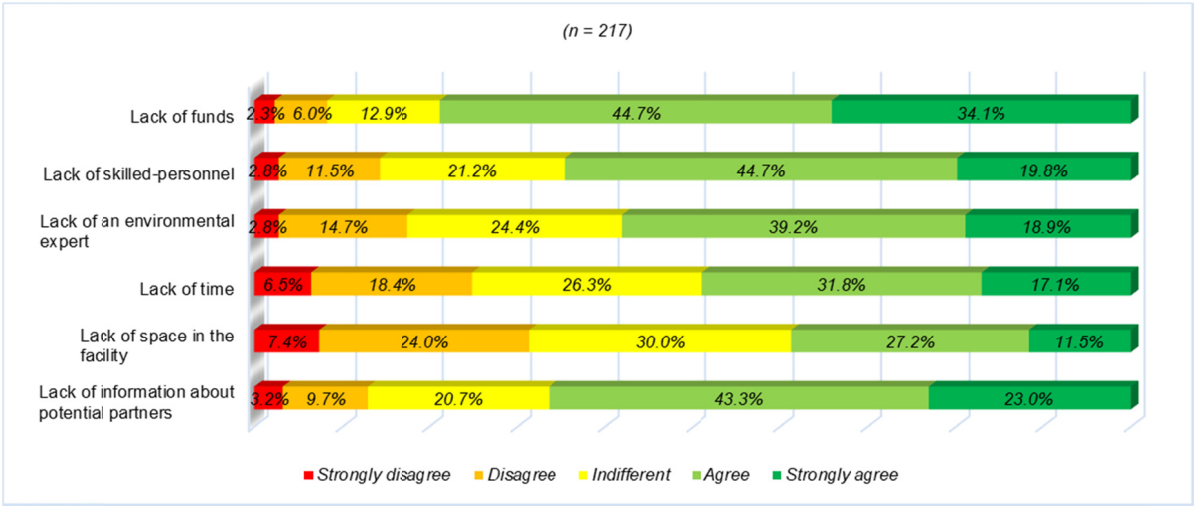

Figure 7. Barriers to adopting green or CE practices

To understand the current situation and to know which are the most preferred green or CE practices, we asked tourism SMEs whether they intend or have already adopted the listed practices. The common green or CE practices that most tourism SMEs have already adopted are the installation of energy-efficient lighting equipment, double-glazed windows, motion sensor light switches, water-efficient fittings, and encouraging

customers for public transport or bicycle (see Figure 8). The most unfavorable green or CE practices that SMEs do not intend to adopt include collection and use of rainwater, installation of energy-efficient kitchen, installation of filtered water bottling system to reuse glass bottles, optimization of laundry operations, and installation of solar water heating system. Nevertheless, the majority of SMEs are keen to adopt many green practices including but not limited to the formulation of a sustainability policy, sustainable tour packages, installation of car charging station nearby facility, installation of smart thermostats, purchase of food or other products considering green procurement criteria, and so on (see Figure 8).

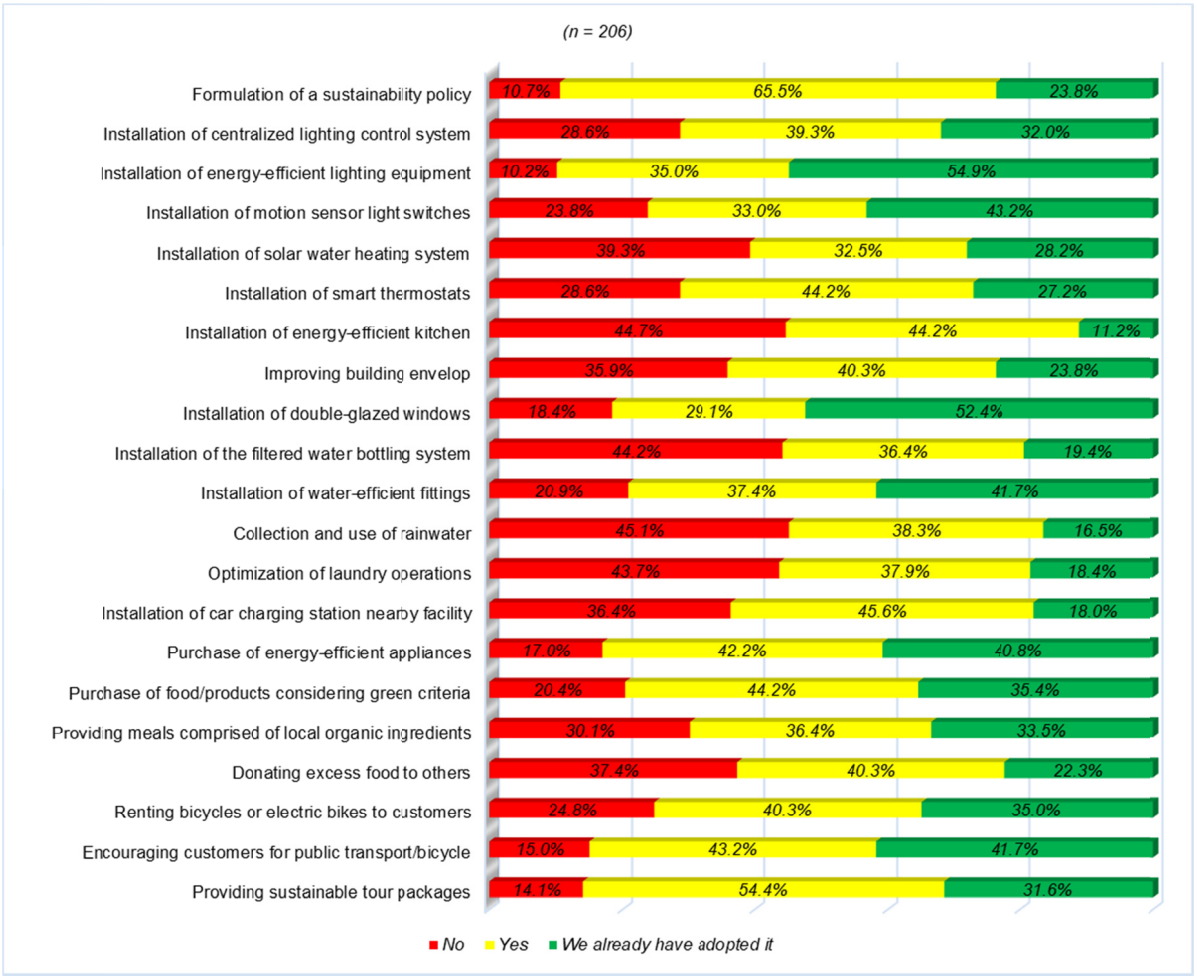

Figure 8. Intention to adopt specific green or CE practices

4.5 Outcomes of Green or CE Practices Adoption

Scholars have demonstrated that the adoption of green or CE practices provides several positive outcomes (Khan, Daddi, & Iraldo, 2020). We found that tourism SMEs who adopted green or CE practices got positive outcomes too. It is worth noting that 62.2% of SMEs indicated that their reputation towards customers and suppliers was improved. 61.7% of SMEs responded that their environmental impact was reduced while 55.8% of SMEs responded that their quality of services was improved (see Figure 9). However, many SMEs indicated that their financial aspect was least improved compared to other aspects. Simply put, 29.0% of SMEs strongly disagree with the statement that their annual turnover was increased and 26.3% of SMEs strongly disagree with the statement that their profit growth was increased.

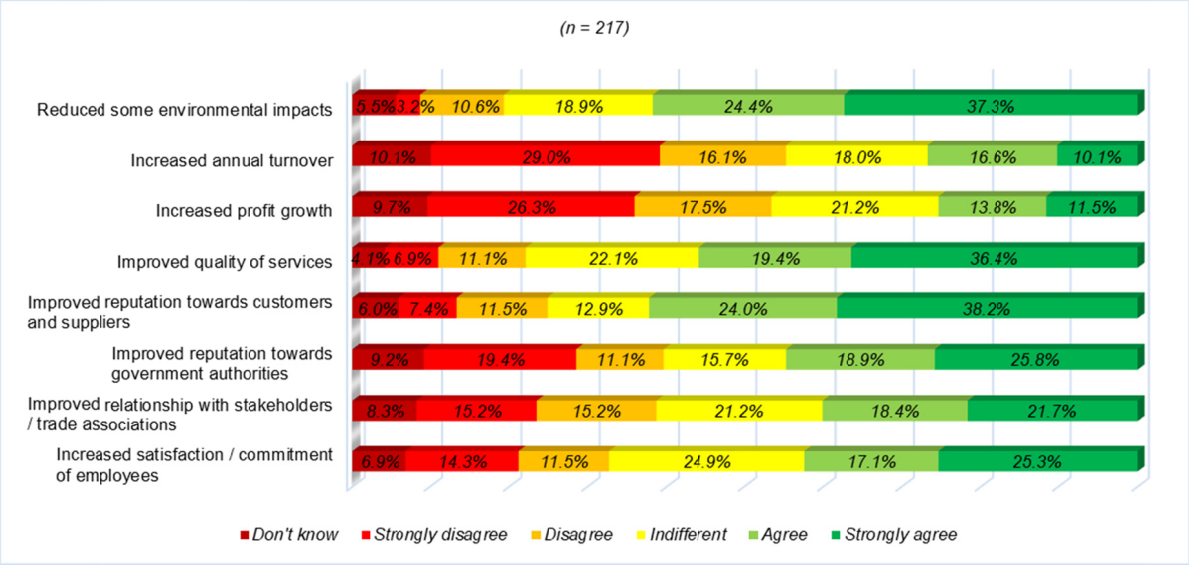

Figure 9. Outcomes of green or CE practices adoption

5. Discussion

Our study focused on multiple objectives. We analyzed environmental sustainability among tourism SMEs from various perspectives such as drivers, barriers, and outcomes for adopting green or CE practices. Moreover, we investigated the adoption level of environmental certifications in the tourism industry. This paper contributes to the ongoing academic debate on sustainable tourism by providing a comprehensive view of the situation. Simply put, unlike most of the previous studies, we did not only analyze the perceptions of owners or managers from the hotels or accommodations but also analyzed the perceptions of owners or managers from travel agencies, tour operators, and other reservations. This paper provides useful insights for both scholars and practitioners by analyzing the adoption level of green or CE practices as well as by analyzing the demand of suppliers and customers for environmental certifications and green products or services.

Our results show a ruthless situation regarding the adoption of certifications. The majority of the sample declared to not have any sort of certification. Moreover, environmental certifications such as EU Ecolabel or ISO 14001 have a lower adoption rate than a quality certification such as ISO 9001. Our results confirmed previous studies on the low diffusion of EU Ecolabel (Iraldo & Barberio, 2017; Marrucci, Iraldo, & Daddi, 2021). According to some scholars, tourist accommodation is one of the less purchased EU Ecolabel categories by consumers (Marrucci et al., 2021; Preziosi, Tourais, Acampora, Videira, & Merli, 2019). This trend is also confirmed by our analysis which indicated that suppliers, trade associations, and customers have low expectations connected to green accommodation, even though consumers registered slightly higher attention on sustainability.

Despite the negative trend in the adoption level of certifications, the majority of the sample showed a very positive attitude towards environmental sustainability. However, our analysis highlighted a twofold tendency on the diffusion of green or CE practices among tourism SMEs. On the one hand, respondents recognized the importance of sustainability and its positive influence on society as well as underlined the benefits of CE for their organizations but on the other hand, they did not perceive a financial reward from the adoption of green practices nor they felt pressure from customers to boost environmental sustainability in the tourism industry.

To avoid a biased analysis due to the coronavirus pandemic which has strongly affected the tourism industry, we added some questions specifically dedicated to this aspect. Our survey results seem to be more surprising if we assume that practically all respondents are fully aware of the importance of fostering sustainability after the coronavirus pandemic. They declared a high-level awareness but at the same time, they claimed to not know how to sustain their business which indeed indicates their low level of knowledge on green or CE practices. This low level of knowledge was also confirmed regarding the environmental certifications specifically dedicated to the tourism industry. A majority of the sample declared to not aware of the existence of the listed environmental certifications. If we add to this group those SMEs, who are not willing to adopt despite knowing a listed certification, this majority becomes around 90% of the whole sample.

Our study though focused on the tourism industry, but our results are in line with previous studies that focused

on green certifications in other industries. Environmental certifications are facing a difficult time due to two main issues which are indeed the two faces of the same coin. On the one side, the raising of the greenwashing phenomenon (i.e., the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound) is damaging the credibility of the environmental certification (Testa, Boiral, & Iraldo, 2018). Although consumers are interested in green and circular products (Testa, Iovino, & Iraldo, 2020; Yang, 2017) but they are more skeptical of environmental certification reliability (Martín-de Castro, Amores-Salvadó, Navas-López, & Balarezo-Nuñez, 2017). On the other side, the synergies between environmental certifications such as ISO 14001, EMAS, and EU Ecolabel with the CE are not yet fully exploited (Marrucci et al., 2019).

Although these certifications are part of SCP tools, their contribution to CE transition is still scant (Marrucci et al., 2019). In addition to EMAS and EU Ecolabel, even product/organization environmental footprint (PEF/OEF), the EU version of the life cycle assessment (LCA) should take into account by the tourism industry as a useful strategy not only to boost sustainability into their activities but also to communicate to all stakeholders their efforts and commitment towards the environment. The adoption of these tools or other similar tools such as carbon footprint would allow tourism SMEs to achieve a twofold objective. First, they would be able to identify their environmental hotspots i.e., the most impactful activities from an environmental point of view. In this way, they can identify the best solution, to reduce their pressure on the environment, fostering CE facing climate change. Second, they would be able to quantify the environmental savings obtained by the adoption of the green practices using a different unit of measures such as tons of CO2, etc. SMEs from different sectors have already started this path and thus obtaining successes both in terms of both economic savings and environmental performance (Daddi, Nucci, & Iraldo, 2017; Marrucci, Marchi, & Daddi, 2020).

This paper highlights a substantial stillness and aversion towards the adoption of green or CE practices, regardless of the typology of the activities. The main barriers that we identified are the lack of financial resources and the lack of information about potential partners. Thus, despite tourism SMEs recognized a desire to improve their environmental performance, the lack of benefits in terms of turnover, profit growth, and reputation among clients is hampering the adoption of green or CE practices.

6. Conclusion

This paper contributes to the debate on the adoption of green or CE practices in the tourism industry. Through our online survey in hotels, accommodations, travel agencies, and tour operators, we approached the topic from different points of view considering several managerial and technical issues connected with sustainable tourism development. Even though limited to the sample, we can draft some recommendations based on our study. Our results seem more similar to a qualitative study rather than a quantitative, they can be the basis for a deeper and wider analysis of the whole sector.

As regards the drivers that push tourism SMEs to adopt green practices, the possibility to improve their environmental performance and to increase the quality of the service are the main reasons perceived by the sampled SMEs. The main issues that hindered the widespread of green or CE practices are mainly economic. Indeed, the lack of funds and the lack of return in terms of financial benefits such as increased turnover and profit, are respectively the main barrier and the less perceived benefits for the adoption of green or CE practices. Moreover, respondents indicated energy-efficiency practices such as double-gazed windows and LED lighting equipment as the most suitable green practices for their organizations. Lastly, even though tourism SMEs are declared to have a high level of awareness on environmental issues such as climate change and resource consumption, at the same time their level of knowledge on the strategy to reduce their environmental impact is limited.

Policymakers can contribute to overcoming both the economic and the informative barriers. As regards the lack of funds, economic investments may be financed, and subsidies may be channeled from governmental organizations towards those tourism SMEs which prompt the adoption of green or CE practices. As regards the lack of knowledge, policymakers may foster training courses on sustainable tourism engaging also trade associations and chambers of commerce in order to increase the widespread of these activities. As regards environmental certifications, even on this issue policymakers can have a central and crucial role. To foster their adoption among tourism SMEs, policymakers may prompt some form of regulatory relief, such as extended duration of some permits, reductions in financial guarantees, and tax reductions, to facilitate and support SMEs in the path to the adoption of environmental certification. This strategy may help also to revitalize some certifications whose number of registration are significantly decreasing (Daddi et al., 2018).

This paper, besides its merits, has some limitations. We followed the recommended guidelines to ensure the

quality of the data. However, social desirability bias which is commonly found in surveys could not be ruled out. In other words, the respondents' perceptions may not coincide with the objective and rational reality. Moreover, this paper is limited to the sample size of 256 SMEs from four EU countries. Therefore, the results of this paper may only be generalized to other countries with caution. One of the main limitations of this paper can also be a future topic to investigate. Indeed, our analysis did not fully consider consumers' awareness, perception, and willingness to buy sustainable accommodation. Future studies may in-depth analyzed these aspects also investigating the relationship between consumers' purchasing choices and environmental certification of tourist accommodations.

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